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UH Mānoa recognizes its obligation to provide program accessibility for persons with disabilities. Contact the KOKUA Program at (808) 956-7511 (Voice/Text) to obtain information to the existence and location of services, activities, and facilities that are accessible to persons with disabilities. This Catalog is available in alternate format upon request by persons with disabilities.

The University of Hawai‘i at Mānoa is accredited by the Western Association of Schools and Colleges (WASC) Senior College and University Commission, 985 Atlantic Avenue, Suite 100, Alameda, CA 94501, tel: (510) 748-9001, fax: (510) 748-9797, email: wascsr@wasc senior.org, web: www.wascweb.org
As Interim Chancellor of the University of Hawai‘i at Mānoa, I welcome you to the 2015-2016 General Catalog. Begin your academic journey on these pages, as you learn more about the nation’s most unique campus of higher education.

UH Mānoa is a world-class university situated in the middle of the Pacific Ocean, where East meets West. We are also proud to be a major research university, with an important international reputation for discovery spanning land, sea, and sky.

Our students are learning, doing research, developing critical thinking, and being imbued with a global sense of citizenship. And they are matriculating on a campus grounded in the traditional values of the Native Hawaiian culture.

Commence your visit to UH Mānoa by reviewing this updated Catalog, brimming with general information on our colleges, schools, programs, courses, and personnel. Discover the academic programs and dedicated individuals united by our main responsibilities—providing high-quality undergraduate education; offering a broad range of high-quality undergraduate specializations; facilitating advanced education, which will lead to the earning of doctorates in selected fields; maintaining a research university with very high research activity; serving the Hawai‘i community; and serving the world.

Aloha,
Robert Bley-Vroman
Interim Chancellor
UH Mānoa
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The University of Hawai‘i System

The University of Hawai‘i (UH) is a postsecondary education system composed of 10 campuses throughout the 50th state. In addition to the flagship campus at Mānoa, the UH system includes UH Hilo, a four-year campus located on the island of Hawai‘i, and UH West O‘ahu, a four-year campus located on the leeward side of O‘ahu. There are four UH Community College campuses on O‘ahu (Honolulu Community College, Kapi‘olani Community College, Leeward Community College, and Windward Community College) and one on each of three neighbor islands (UH Maui College, Kaua‘i Community College, and Hawai‘i Community College), making college classes accessible and affordable in easing the transition from high school to college for many students.

The mission of the UH system is to provide quality college and university education and training; create knowledge through research and scholarship; provide service through extension, technical assistance, and training; contribute to the cultural heritage of the community; and respond to state needs. The campuses, organized under one board, differentially emphasize instruction, research, and service. The system’s special distinction is found in its Hawaiian, Asian, and Pacific orientation and international leadership role. Core values bind the system together: Hawai‘i’s gracious spirit of aloha; collaboration and respect; academic freedom and intellectual vigor; institutional integrity and service; access, affordability, and excellence; active learning and discovery; diversity, fairness, and equity; leveraged technology; Hawaiian and Asian-Pacific advantage; innovation and empowerment; accountability and fiscal integrity; and mālama‘aina sustainability.

The UH seal contains a torch and a book titled Mālamalama in the center of a circular map of the Pacific, surrounded by the state motto, *Ua mau ke ea o ka ‘âina i ka pono* (“Above all nations is humanity”). The motto, inscribed in both the Hawaiian and English languages on Founders’ Gate at UH Mānoa is *Maluna a’e o nā lāhui a pau ke ola o ke kanaka* (“Above all nations is humanity”). The motto is reflected in the ethnic diversity of UH students: 23.8 percent Hawaiian or part Hawaiian, 18.4 percent Caucasian, 13.3 percent Filipino, 8.1 percent Japanese, 4.6 percent Chinese, 13.6 percent mixed ethnicity, and 18.2 percent other.

UH governance is vested in the Board of Regents, appointed by the governor of Hawai‘i and confirmed by the State Legislature. The regents in turn appoint a president of the UH.

The UH Mānoa Campus

University of Hawai‘i at Mānoa (UH Mānoa) is a research university of international standing. It creates, refines, disseminates, and perpetuates human knowledge; offers a comprehensive array of undergraduate, graduate, and professional degrees through the doctoral level, including law and medicine; carries out advanced research; and extends services to the community. Students have special opportunities for Asian, Pacific, and Hawaiian educational experiences and involvement in research activities, service learning, and co-curricular activities.

UH Mānoa has widely recognized strengths in tropical agriculture, tropical medicine, oceanography, astronomy, electrical engineering, volcanology, evolutionary biology, comparative philosophy, comparative religion, Hawaiian studies, Asian studies, Pacific Islands studies, and Asian and Pacific region public health. UH Mānoa offers instruction in more languages than any U.S. institution outside the Department of State.

The main UH campus located in Mānoa valley on the island of O‘ahu began in 1907 as a land-grant college of agriculture and mechanic arts. With the addition of a College of Arts and Sciences in 1920, the college became the University of Hawai‘i. In 1972, it became UH Mānoa to distinguish it from the other units in the growing UH System.

Today, nearly 20,000 students are enrolled in UH Mānoa courses, on campus or via distance delivery, studying toward bachelor’s degrees in 97 fields of study. Master’s degrees in 85, doctorates in 57, first professional degrees in architecture, law, and medicine, and a total of 60 undergraduate and graduate certificates. UH Mānoa also offers 5 post-baccalaureate certificates. There are 298 degrees and certificates offered. In addition, 72.4 percent of UH Mānoa students are undergraduates, 55.8 percent are women, and 74.5 percent attend school full-time. The mean age of students is 25.

The beauty of Mānoa valley serves as a backdrop for a unique yet inviting campus. Wander through the campus and find an authentic Japanese tea house and garden located on the East-West Center grounds, a studies center that is a replica of a Korean king’s throne hall, and a Hawaiian taro patch. Other structures include the Student Recreation Center on campus and a privately donated marine biology facility on Coconut Island.

UH Mānoa is accredited by the Accrediting Commission for Senior Colleges and Universities of the Western Association of Schools and Colleges. Professional programs are individually accredited by appropriate agencies.

A popular campus symbol is the rainbow, a frequent sight in Mānoa valley. Green and white are UH Mānoa’s colors.
Check the online Calendar at www.hawaii.edu for the most updated version.

### 2015 Fall Semester

*Orientation/academic advising/registration for continuing, new, and unclassified students

Visit manoa.hawaii.edu/graduate/content/graduate-programs for deadline information as graduate admission deadlines vary by program. The Office of Graduate Education begins processing applications around August 1 for the following fall semester.

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* Refer to the Registration Guide

** Some programs have earlier deadlines.

Check with your department or school.
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**2016 Summer Session**

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<td>Fall admission application deadline for post-baccalaureate unclassified students</td>
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<tr>
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Assistant Vice Chancellor for Undergraduate Education
Queen Lili‘uokalani Center for Student Services 213
2600 Campus Road
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Tel: (808) 956-6231
Fax: (808) 956-2191
Web: manoa.hawaii.edu/undergrad/oavcue/
AVCUE: Ronald E. Cambra
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Fax: (808) 956-4148
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Tel: (808) 956-8010
Fax: (808) 956-7830
Email: uhmanoa.records@hawaii.edu
Web: www.manoa.hawaii.edu/records/

Admission requirements for UH Mānoa are similar to those of comparable state institutions of higher education. Applicants are advised to consult appropriate UH Mānoa colleges/schools for specific information since individual academic programs may have special admission policies and procedures.

The following regulations and procedures are subject to change without prior notice. Prospective students should consult the most current Catalog and/or an advisor before applying for admission.

International students should refer to “Admission of International Applicants” within this section of the Catalog.

Admission of Classified Students
Classified undergraduates are those admitted to approved programs of study leading to UH Mānoa baccalaureate degrees. Students who have earned 0–29.99 credit hours are freshmen; those with 30–59.99 credit hours are sophomores; those with 60–89.99 credit hours are juniors; and those with 90 or more credit hours are seniors.

Freshmen and sophomores are lower division students, while juniors and seniors are upper division students.

Admission of Freshmen
Students applying for admission as a freshman must complete the Self-Reported Application. The initial admissions decision will be based on self reported data. Upon request from the Office of Admissions, an official transcript and official College Board (SAT) or American College Test (ACT) scores must be submitted. Applicants taking the General Education Development (GED) high school-equivalency test must submit GED results in addition to the Self-Reported Application. Applicants who have been home schooled must submit GED scores, or SAT subject tests (minimum of the subjects) including math, or ACT subscores in addition to the Self-Reported Application. A high rating in one area will not ensure admission, nor will poor performance in an area exclude applicants if other evidence shows they may be successful in university-level work.

SAT or ACT. Candidates for fall admission should take the SAT or ACT no later than November of their senior year in high school. Candidates for spring admission should take the test before July. Applicants must also take and submit scores of the writing test. Information is available from high school counselors or from the testing agencies. For SAT, contact College Board, P.O. Box 205505, Miami, FL 33102. For ACT, contact American College Testing Program, P.O. Box 414, Iowa City, IA 52243.

High School Record. Applicants should have grades high enough to place them in the upper 40 percent of their graduating class.

Minimum Unit Requirements. Applicants should complete 22 units of high school work (grades 9–12) of which at least 17 are college preparatory. The term “unit” means satisfactory completion of a full school year’s course of study or the equivalent in laboratory and shop exercises. A listing of courses and grades from the ninth through twelfth grades must be included. College-preparatory subjects must include at least four units in English; three in mathematics including college-preparatory geometry and second-year algebra; three in natural sciences; three in social sciences; and four additional units, which may include higher mathematics, additional science, additional social studies, and foreign language. All other courses for which the high school grants credit may be offered to satisfy the remaining unit requirements, although there should be no less than a half-unit nor more than two units in any one subject.

Students entering curricula in engineering, mathematics, and biological and physical sciences must meet the special mathematics requirements listed in the college sections of this Catalog.

Profile of Admitted Students. All applications are evaluated on an individual basis. Generally, successful applicants attain a B (not B-) average for all college-preparatory high school course work, achieve SAT scores of 510 (critical reading), 510 (writing), and 510 (math) or ACT score of 22 in each section, and rank in the upper 40 percent of their graduating class.

UH Mānoa accepts all Hawai’i residents who meet UH Mānoa admissions standards.

Nonresident applicants should await notice of acceptance before coming to Hawai’i. By Board of Regents policy, the number of nonresidents admitted is limited.

Admission decisions are made independent of the availability of financial aid and housing. Students must apply separately for financial aid and housing. (See the “Tuition, Fees, and Financial Aid” and “Student Life” sections of this Catalog.)

Admission of Requirements of Homeschooled Applicants
Complete homeschooled applicants are expected to meet the minimum admissions requirements indicated for freshman applicants. Please review the detailed requirements below for homeschooled applicants.

Required Documents
Complete the Self-Reported Application if your homeschool transcript reflects a traditional high school curriculum. If you are in a non-traditional program, please include a separate statement that includes titles and descriptions of all course work completed. Other additional information such as textbooks used, methods of teaching, and methods of evaluation and the resulting grades or structured assessments must be entered in the “Comment” box. If the additional information exceeds the amount of space given, attach an additional sheet to the hard copy Self-Reported Supplement or submit an email if you completed the online version.

Also, one of the following: GED scores, SAT subject tests (minimum of three subjects) including math, or ACT subscores.
Admission of Transfer Applicants

Transfer applicants are those currently or previously enrolled at a college or university other than UH Mānoa. Transfer applicants include those who previously attended UH Mānoa and subsequent to their UH Mānoa attendance enrolled at another UH college, university, or UH Mānoa. To obtain an application form, refer to “Application Procedures” within this section of the Catalog.

Applicants who have earned at least 24 semester credit hours of work or completed 12 transferable credits and have at least 12 credits in progress in courses comparable to UH Mānoa offerings at a regionally accredited U.S. college or university must submit an application and have each postsecondary institution previously attended send an official transcript (including withdrawals, courses taken, and grades received) directly to the Office of Admissions. Unofficial transcripts, hand-carried transcripts, faxed transcripts, and student copies of transcripts or grade reports will not be accepted.

Applicants who have earned fewer than 24 acceptable credit hours or who have enrolled in an unaccredited institution must submit high school transcripts and official SAT or ACT scores in addition to official transcripts from all postsecondary institutions previously attended. Admission will be based on both college and high school work.

Transfer applicants are expected to present a satisfactory academic record in courses comparable to UH Mānoa offerings. Nonresident candidates must present a better than average record. The number of nonresidents admitted is limited by Board of Regents policy.

Applicants enrolled at another college or university must have a final transcript submitted to the Office of Admissions at the end of the current term. Until this is received, any acceptance is provisional. Failure either to submit the transcript within a reasonable time or to complete the semester’s work satisfactorily will result in denial of admission or, in the case of registered students, cancellation of registration.

Credit hours in courses taken at U.S. regionally accredited colleges or universities that are substantially equivalent to UH Mānoa offerings and in which grades of D (not D-) or better have been earned will be transferred. Grades and grade points from other institutions are not transferred. Credit/No Credit and Pass/Fail credits may be accepted if the standard for these credits is equivalent to that at UH Mānoa (see “Grades” within this section of the Catalog).

However, not all transfer credits accepted will necessarily satisfy curricular requirements toward a particular degree. UH Mānoa applies no more than 60 credit hours from non-UH community or junior colleges toward the credits required for a bachelor’s degree. Other notable restrictions on transfer credit include:

- Courses taken out of sequence (backtracking): Credit is not awarded for lower level courses if they are taken subsequent to or concurrently with a higher level course for which there are explicit or implicit prerequisites.
- College Level Examination Program (CLEP) and Advanced Placement (AP): Credits awarded for CLEP and AP examinations do not count toward meeting the 24-credit requirement for admission as a transfer student nor do they exempt other applicants from submitting SAT/ACT scores and high school transcripts.
- Correspondence school credit: No more than 30 credits of correspondence course work from regionally accredited U.S. colleges and universities will be accepted in transfer.
- Life experience: UH Mānoa does not award credits for life experience. By individual arrangement, enrolled students may arrange for credit by examination.
- Military service or schooling: Course work taken through military schools may be considered for credit with the consent of the appropriate UH Mānoa department. The student’s DD-214 or DD-295 form or American Council of Education (ACE) Registry transcript must be submitted. Credits awarded for military schooling do not count toward meeting the 24-credit requirement for admission as a transfer student nor exempt other applicants from submitting SAT/ACT scores and high school transcripts.
- Courses with nontraditional grades: Courses completed with nontraditional grades such as CR (credit), P (pass), S (satisfactory) may be transferable only if the grade represents a D (not D-) or better. Generally, courses with nontraditional grades will be accepted as elective credit only and will not fulfill UH Mānoa, college, school, or departmental requirements.
**Admission of International Applicants**

International students wishing to apply should request an application and a form called “Supplementary Information for International Students.” The deadline is January 5 for fall admission and September 1 for spring admission. If admitted, international students must receive two clearances in order to register: (1) University Health Services clearance documenting adherence with health regulations, and (2) International Student Services (ISS) clearance documenting adherence to international student regulations and proof of adequate health insurance. **Note:** International applicants with a non-immigrant visa status other than student status should contact the ISS. Federal restrictions on full-time study may apply.

**Additional Requirements**

**Transcripts.** In addition to the application, applicants must present evidence of having completed or received the equivalent of a U.S. high school diploma. Official transcripts of all secondary and postsecondary work must be sent directly to the Office of Admissions by each institution attended. Certified photocopies of the certificates and results of any qualifying examinations (e.g., General Certificate of Education) must also be submitted. Certified English translations must be attached to documents and transcripts written in a foreign language.

Applicants enrolled in a secondary school or another college or university must have a final transcript submitted to the Office of Admissions at the end of the current term. Until this is received, any acceptance is provisional. Failure to submit the transcript or to complete the semester’s/year’s work satisfactorily will result in denial of admission and/or cancellation of registration.

**Examinations.** Applicants also must submit official results of the SAT or American College Test (ACT) (see “SAT or ACT”) and the Test of English as a Foreign Language (TOEFL). These examinations are normally required of all foreign applicants, including students who either have been admitted to or have matriculated at other universities. SAT applications may be obtained by writing to the College Board, P.O. Box 025505, Miami, FL 33102. ACT applications may be obtained by writing to the American College Testing Program, P.O. Box 414, Iowa City, IA 52243. TOEFL applications may be obtained by writing to Educational Testing Service, P.O. Box 6151, Princeton, NJ 08541.

**ACT or SAT Exemptions.** Students who have earned at least 24 semester hours of acceptable credits—including English Language Institute and/or English as a Second Language courses—are exempt from submitting the ACT or SAT results. The credits must have been completed at a regionally accredited U.S. college or university and must be equivalent to UH Mānoa offerings.

**TOEFL Requirements and Exemptions.** Applicants are required to score a minimum of 61 (internet-based), 173 (computer-based), or 500 (paper-based) on the TOEFL. The following applicants are exempt from the TOEFL examination: (a) those whose native language is English; (b) those who hold a bachelor’s or master’s degree from a regionally accredited university in the U.S. or a recognized university in Australia, Britain, Canada (excluding Quebec), Ireland, or New Zealand; (c) those who score 510 or better on the verbal and 510 or better on the writing sections of the SAT; (d) those who score 22 in English and 22 in reading sections of the ACT; (e) those who have completed six years of continuous schooling through the high school or college level in American Samoa and/or Guam and in one of the countries listed above under (b); (f) those who have completed English composition at a regionally accredited U.S. institution with a D or better grade; or (g) those who completed at least three years of high school in Hawai’i with a cumulative GPA of 3.2 and SAT critical reading of 460 and SAT writing of 460. Admission to summer ELI classes does not imply a waiver of the TOEFL exam for fall or spring semester admission.

**English Language Institute.** International and immigrant students who are admitted to UH Mānoa and whose native language is not English are referred to the English Language Institute to determine if they must take the ELI placement tests and the Mânoa Writing Placement examination. If a student does not fulfill this obligation, ELI will place a hold on the student’s registration. Please contact the Department of Second Language Studies for additional information. (See the “ELI” section of this Catalog)

**Admission of International Exchange Students**

Students matriculating at a university outside the U.S. may apply for admission as an international exchange student in the third or fourth year of study, through the Mânoa International Exchange (MIX). Admission may be granted for a maximum of two semesters as a “Visiting Student.” Priority is given to students from institutions with a formal exchange agreement with UH; however, other qualified students from any foreign institution may also be considered.

Those sponsored by their home government or an external scholarship program such as Fulbright or Rotary International may also be admitted as exchange students, either as a classified, degree seeking student, or as a non-degree visiting student. Exchange students may enter the U.S. under either the F-1 or J-1 visa, depending on the funding source and preferences of the sponsoring agency.

Exchange students must submit standard admission materials, official TOEFL scores of 68 (internet-based), 190 (comput-
er-based), or 520 (paper-based) unless exempt (see “Admission of International Applicants” for exemption criteria), and for those engaged in non-degree study, a special MIX application. For further information, contact International Student Services, Queen Lili‘uokalani Center for Student Services, 2600 Campus Road, Honolulu, HI 96822, or visit www.hawaii.edu/issmanoa.

Admission of Returning Students

A student who experiences a break in enrollment at UH Mānoa without having taken an approved leave of absence or who has been suspended or dismissed must apply for readmission. A student who has attended another college or university, or UH campus subsequent to attendance at UH Mānoa must apply as a transfer student (see “Admission of Transfer Applicants”). Readmission is not automatic because of enrollment limitations and changes in academic regulations. Students who are readmitted will be subject to the General Education Core, major, and graduation requirements in effect at the time of readmission. Questions concerning readmission should be directed to the student academic services office in the college/school to which the student is applying.

Admission of Unclassified Students

Persons who wish to take UH Mānoa courses but do not wish to enroll in degree programs may apply for admission as unclassified students through the Office of Admissions. Undergraduate applicants must meet the admission standards for a regular classified, degree seeking undergraduate. Post-baccalaureate applicants should contact the Office of Graduate Education.

Classified applicants receive admission priority; thus, unclassified applicants may be denied admission because of enrollment restrictions.

Persons interested only in taking courses offered by Outreach College should refer to the “Outreach College” section of the Catalog, or should inquire at Outreach College, (808) 956-7221 or (1-800) 862-6628.

High School/Dual Enrollment Program

High school students who have demonstrated exceptional academic achievement, have completed most of their high school graduation requirements, and can no longer benefit from high school offerings may enroll concurrently in UH Mānoa courses while enrolled in high school. Eligibility is restricted to high school juniors and seniors.

Students wishing to take advantage of this program should follow the procedures for “Admission of Freshmen.” Eligible students must present outstanding high school grades and SAT or ACT scores, be recommended by school authorities, and have the permission of their parent(s) or legal guardian to participate in the High School/Dual Enrollment Program.

Regular UH Mānoa admission deadlines, normal tuition and fee schedules, course prerequisites, and admission requirements other than high school graduation all apply to the High School/Dual Enrollment Program.

Application Procedures

To obtain admissions related information, prospective students should consult their high school counselors (in Hawai‘i) or write to the Office of Admissions, 2600 Campus Road Room 001, Honolulu, HI 96822. The application is available online (apply.hawaii.edu). The application is valid only for the semester specified. For deadline information, refer to the “Calendar.”

For information regarding application procedures for non-U.S. citizens and/or nonnative speakers of English, refer to “International Admission Process.”

Deadlines

The admission application initial deadline for the fall semester is January 5; the final deadline is March 1. The initial deadline for the spring semester is September 1; the final deadline is October 1. Some professional schools and individual programs may have earlier deadlines. Consult the appropriate student academic services dean for specific deadlines.

In addition to the application form, applicants must submit official test scores and arrange to have official transcripts of all schools, colleges, universities, business, and postsecondary schools attended sent directly from each institution involved by the appropriate deadline. Unofficial transcripts, hand-carried transcripts, faxed transcripts, and student copies of transcripts or grade reports will not be accepted. All other required credentials, as noted in the application, should also be sent with the application form. No applications, even those received before the closing date, will be acted upon after enrollment is filled for a program. Applications and documents submitted to UH Mānoa are deemed the property of UH Mānoa and therefore will not be returned to the applicant nor be available for copying.

Application Fee

Applications must be accompanied by a nonrefundable, non-transferable application fee. The application and fee are valid only for the semester specified on the application.

Special Instructions

Student Identification Numbers

UH Mānoa will issue student identification numbers at the point of acceptance and intent to enroll to all students for use as his or her permanent identification.

Student Ethnicity Data

Students are urged to supply racial/ethnic information on applications and other forms when requested, since UH Mānoa must provide a number of federal, state, and educational agencies with this data each year. Whenever such information is lacking, UH Mānoa personnel must make an educated guess. Self-identification is preferable.

Email Correspondence

Electronic mail is a Board of Regents approved communications method. Email communications to students will be sent to email addresses submitted on the students’ admissions application. Email communications will be sent to the student’s University of Hawaii email address after the student’s user account has been established.

Change of Address

Students are responsible for keeping UH Mānoa’s Office of the Registrar (Queen Lili‘uokalani Center for Student Services 010) informed of their correct address (i.e., mailing, permanent, email, etc.). Change of address may also be completed through the MyUH Portal at myuh.hawaii.edu.
Misrepresentation

By UH Mānoa policy, all applicants for admission are required to list all current and previous enrollment in any postsecondary institution on the application form. Applicants for admission who fail to inform UH Mānoa of such enrollment at the time of application or who submit, or have submitted on their behalf, any required information or document that is inaccurate, incorrect, or fraudulent or that has been altered without proper authorization may be denied admission to UH Mānoa. If the omissions and/or alterations are discovered after the student is enrolled, the student’s admission may be rescinded and his or her enrollment canceled. Credits earned at any unreported college or school are not accepted in transfer. The student or prospective student may also be referred to the Student Conduct Committee for possible disciplinary action.

Academic Advising

Academic advising at UH Mānoa is an expression of our educational mission and ideals. Advising helps students to integrate and discern meaning from the many facets of their academic journey and to locate their unique journey within the context of their hopes, dreams, abilities, goals, interests, and in fact, within the full trajectory of their lives. Advising conveys higher education’s modes of thinking, learning, and decision making, teaches students to think critically about their roles and responsibilities, and encourages students to become active members in our higher education community as well as leaders in our global community.

Overseen by the Assistant Vice Chancellor for Undergraduate Education and coordinated through the Council of Academic Advisors, academic advising is college- and school-based: the students’ primary connection remains with their academic unit. UH Mānoa provides academic advising for undergraduate students through the student academic services office in their college/school. In addition, students can log onto the STAR system via MyUH Portal (myuh.hawaii.edu) to see how courses taken might fulfill degree requirements. STAR is an advising tool that allows students to manage their academic course work, but should not be considered a substitute for meeting with advisors to verify degree requirements. Academic advisors bring to their responsibilities as educators not only knowledge of academic disciplines, but also understanding of the rationale that underlies the curricula of the colleges/schools and UH Mānoa. Students are strongly encouraged to seek advising assistance early in their academic journeys.

Academic advising involves:
- Assisting students in clarifying, articulating, and attaining academic and life goals;
- Facilitating students’ adjustment to the campus;
- Educating students on how to develop educational plans and assess their academic progress;
- Explaining and clarifying requirements, policies, and procedures;
- Encouraging students to think critically about their roles and responsibilities as students and as members of a democratic and global community;
- Helping students locate and access available resources and to engage in the UH Mānoa community;
- Counseling students on personal issues as they relate to academic progress; and
- Serving as advocates and mediators for students.

College/school advisors complement departmental advisors, who are specialists in their subjects. Departmental advisors advise on major requirements, available opportunities, career options, and graduate or professional degrees in their discipline. Students can locate their academic advisors at manoa.hawaii.edu/academics/advising.

Mandatory Advising and Declaration of Majors

All students will benefit from two major academic policies related to advising. First, they will receive mandatory advising every semester for their first two years. Second, students will be required to declare their major prior to the start of their junior year. These policies were introduced to encourage early identification of potential majors, support efficient graduation, and promote each student’s engagement in his or her academic journey.

Registration and Enrollment

Registration Procedures

Registration is open to those students officially admitted to UH Mānoa by the appropriate admissions office and to students in good standing who are continuing in an approved program of study. Students who have graduated, withdrawn, or have not been continuously enrolled must complete the admission process before being permitted to register. New, transfer, and returning classified students who are admitted to UH Mānoa are required to pay a nonrefundable, nontransferable tuition deposit to confirm their admitted status. Admitted students may be barred from registration until they have complied with all UH requirements, including but not limited to, medical clearances, the purchase of health insurance by nonimmigrant foreign students, and required English language placement testing. Students may also be barred from registering until they have cleared all academic or financial obligations.

Students are assigned specific appointment times in which to register. All registration activity is conducted by personal computer through the World Wide Web. The MyUH Portal website at myuh.hawaii.edu provides the UH community with secure, personalized access to enrollment services such as registration. Each student’s registration time will be available through the MyUH Portal approximately two weeks before registration.

Information on registration procedures is contained in the online Registration Guide at www.hawaii.edu/myuh/manoa/, which includes registration dates and instructions. The Registration Guide is available shortly before registration begins each fall and spring semester. The listing of course offerings with up-to-date class location and meeting times is found at the Check Class Availability website: www.sis.hawaii.edu/uhdad/avail.classes?i=MAN.

Unclassified students and auditors register after classified students.

Auditors

Auditors are regularly admitted students who enroll for informational instruction only, and attend classes with the consent of the instructor. Auditors receive no credit, and they do not take course examinations. The extent of their classroom participation is at the instructor’s discretion. Auditors are not generally allowed in art studios, laboratory science, mathematics, elementary and intermediate Hawaiian and foreign languages, creative writing, English composition, physical education, communicology and other performance courses, or in classes...
where they might displace credit students. Audit courses are entered on student transcripts with a grade of L and are subject to regular tuition and fee charges. Audit courses are not counted in determining a student’s enrollment status.

Late Registration
Students who failed to register during the designated registration period may still register for credit during the first 10 calendar days of instruction (see the “Calendar”). There is a fee for late registration.

Maximum Registration
Undergraduate students who request enrollment in 20 or more credit hours of work in any semester must obtain special approval from their college student academic services office and process their changes during the Change of Registration period after instruction begins. Students may not register for courses in Outreach College, for credit or audit, in excess of the maximum registration allowed by the college/school in which they are enrolled unless given permission for an overload by the college/school.

Enrollment Status
For academic purposes, students may be classified as either part-time or full-time students. A full-time undergraduate carries a minimum of 12 credit hours. Undergraduate students carrying fewer than 12 credits are classified as part-time. Audited courses are not counted in determining the enrollment status of a student.

Change of College or Major
Classified students may apply for transfer from one college to another during the fall or the spring semester. Application for transfer must be made on a form supplied by the student academic services office of the college/school that the student wishes to enter. The application must be approved by the dean of that college/school. Deadlines for transfers within UH Mānoa are determined by individual student academic services offices. Contact the college/school directly for deadlines. Students planning to transfer into professional schools should consult the dean’s office for deadlines. Students wishing to enter the College of Education should follow the procedures specific to that college.

Changes in Registration
All deadlines for adding courses, partial withdrawal, or complete withdrawal are subject to change. Refer to the current Registration Guide for applicable deadlines and procedures.

To Add a Course
Courses may be added during the first 10 calendar days of instruction.

To Drop a Course (Partial Withdrawal)
A course may be dropped through the sixth day of instruction without notation on the student’s record. Thereafter, grades of W will be posted. The colleges/schools differ in their policies, but, in general, a course may be dropped from the seventh day of instruction up to Friday of the ninth week of instruction with the consent of the instructor and the approval of the student’s college/school dean.

After the ninth week no withdrawals are permitted except for unusual or extenuating circumstances beyond the control of the student. These withdrawals require the consent of the student’s college/school dean, and consent may be given only after the dean consults the instructor.

If students do not officially complete the withdrawal procedure, an F or NC, as appropriate, may be awarded by the instructor in place of a passing grade.

Complete Withdrawal
Students occasionally find, for a wide variety of reasons, that they are unable to complete the semester and need to withdraw completely from the university. Students should note that once school starts, they have incurred a financial obligation to the university. Withdrawing completely from UH Mānoa does not release the student from his or her financial obligations.

Prior to the first day of instruction, students can withdraw online. No course registration will appear on their records, and the students will incur no financial obligation for tuition and fees.

From the first to the sixth day of instruction, students withdrawing completely from UH Mānoa will have a withdrawal action noted on their records. No courses will be listed for that semester.

From the seventh day through the ninth week of instruction, students withdrawing completely from UH Mānoa will receive a W grade for each course on their record.

After the ninth week of instruction, students are not allowed to withdraw except in unusual or extenuating circumstances beyond their control. Withdrawing after the ninth week requires petitioning for approval from the student’s college/school dean. Students who receive approval will receive a W grade for each course on their record.

To apply for a complete withdrawal, students should see the student academic services office of their college/school. Once the student receives approval to withdraw, the student must obtain all signatures as indicated on the forms and submit the completed forms to the UH Mānoa Cashier’s Office.

Complete withdrawal does not release the student from his or her financial obligations to the university. The refund
schedule for withdrawal is noted in both the “Tuition, Fees, and Financial Aid” section of this Catalog and in the Registration Guide.

When withdrawing, a continuing classified undergraduate student who has completed at least one semester at UH Mānoa may choose to apply for a leave of absence. Leave of absence forms are available through the student academic services office of the student’s college/school and require approval by the college/school dean. Students who do not obtain a leave of absence must apply for readmission by submitting the UH System Application Form to the Office of Admissions before the specified deadline and must be readmitted before they are able to register.

**Automatic Withdrawal**

Faculty will verify attendance of students registered in their courses by the end of the first week of each semester. Students who fail to attend class (“no show”) will be dropped from that class and will have their financial aid recalculated accordingly.

**Retroactive Withdrawals**

Retroactive withdrawals are partial or complete course withdrawals processed after the semester has ended. UH Mānoa is obligated to insure the integrity of the transcript as an historical document, which must reflect the actual history of a student’s experience at UH Mānoa. Because of this, the student who is requesting a retroactive withdrawal will need to present a convincing case and provide relevant documentation that supports the existence of circumstances beyond their control that prevented them from initiating the withdrawal request in a timely manner. Any request submitted two or more years after the course ended will not be reviewed. Should a retroactive withdrawal be approved, the action will result in the grade being changed to a W. Tuition refunds will not be considered and any academic action applied for that semester will remain on the student’s record.

If you were a financial aid recipient during the semester in which you are seeking a withdrawal, be sure to check with Financial Aid Services to determine whether this will result in a financial obligation or future ineligibility for financial aid.

**Credits and Grades**

Work accomplished by students is usually recognized in terms of credit hours, grades, grade points, and grade point averages.

Students must complete a minimum of 120 (45 upper division (300+ level)) credits and have a minimum of a C (not C-) average (minimum GPA of 2.0) to earn a baccalaureate degree. Colleges, schools, and degree programs have specific requirements. Students should check with their college/school advisor.

**Credit Hours**

Credit hours (or credits) for course work are determined on a semester or semester-equivalent basis for work satisfactorily accomplished. Credit hours granted for specific courses are listed in this Catalog and the Check Class Availability website each semester.

**Grades**

Student achievement is designated by the following grades: A+, A, A- (excellent), B+, B, B- (above average), C+, C, (average), C-, D+, D, D- (minimal passing), F (failure), CR (credit), NC (no credit), I (incomplete), and L (audit). A grade of I is given to a student who has not completed a small but important part of a semester’s work if the instructor believes that the incomplete was caused by conditions beyond the student’s control. Each student receiving a grade of I should consult his or her instructor promptly to determine the steps to be taken and the deadline to complete the course work for changing the grade of I to a final grade. The designated November and April deadlines (see the “Calendar”) refer to the dates instructors must report adjusted grades. Student deadlines for completing their course work must be adjusted accordingly.

An instructor recording a grade of I on the final grade sheet will also record the grade that will replace the I if the work is not made up by the deadline; that grade is computed on the basis of what grades or other evidence the instructor does have, averaged together with Fs or zeros for all incomplete work (including the final examination, if it has not been taken). If the work is completed prior to the deadline, the instructor will report a change of grade, taking the completed work into consideration. If the instructor does not submit a grade to replace the incomplete, the grade of I will be replaced by an F or an NC (as appropriate) as of the April or November deadline. All grades of I must be cleared by a student’s college prior to graduation.

**Credit/No Credit Option**

The credit/no credit option encourages students to broaden their education by venturing into subjects outside their fields of specialization without risking a relatively low grade. The CR designation denotes C (not C-) caliber work or better. However, students should be aware that some colleges and graduate and professional schools evaluate CR as C and NC as F. The same is true of some employers and scholarship awarding agencies.

Certain courses may be designated as mandatory CR/NC. In addition to any such mandatory CR/NC courses, no more than 40 credit hours of CR may be counted toward the degree. Neither CR nor NC is computed in the grade point average. The CR/NC option must be exercised during the registration period. The CR/NC option is limited to elective courses; this option is not allowed for any course taken to fulfill a UH Mānoa undergraduate general education, college, school, or department nonelective requirement, with the exception of those courses offered for mandatory CR/NC.

**Grade Points**

Grade points for each credit hour received in a course will be computed as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.0</td>
</tr>
<tr>
<td>A</td>
<td>4.0</td>
</tr>
<tr>
<td>A-</td>
<td>3.7</td>
</tr>
<tr>
<td>B+</td>
<td>3.3</td>
</tr>
<tr>
<td>B</td>
<td>3.0</td>
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<tr>
<td>B-</td>
<td>2.7</td>
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<tr>
<td>C+</td>
<td>2.3</td>
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<tr>
<td>C</td>
<td>2.0</td>
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<tr>
<td>C-</td>
<td>1.7</td>
</tr>
<tr>
<td>D+</td>
<td>1.3</td>
</tr>
<tr>
<td>D</td>
<td>1.0</td>
</tr>
<tr>
<td>D-</td>
<td>0.7</td>
</tr>
</tbody>
</table>

Students entering as undergraduates are not given grade points for work done outside UH Mānoa.

**Grade Point Averages**

Grade point averages (GPA) are determined by dividing the total number of grade points by the total number of credit hours for which a student has received letter grades (excluding I, NC, CR, W, or L).

The semester GPA is calculated on any one semester’s credits and grade points. The cumulative GPA is calculated on all such work taken at UH Mānoa.
“Repeatable” Courses

Some courses are designated “repeatable” in the Catalog and can be taken for credit a limited number of times, as indicated by the course description.

Students may take “repeatable” courses as many times as allowed by the Catalog description. For these courses, all grades are permanently recorded on the transcript and impact the GPA. Students cannot count toward degree requirements.

When students take “repeatable” courses beyond the designated limit, grades continue to be recorded on the transcript, but those grades do not impact the GPA and the credits are not counted toward degree requirements.

All courses that are not designated “repeatable” can only be taken for credit once. This means that only one set of credits (i.e., 1 credit for a 1-credit course; 3 credits for a 3-credit course, etc.) can count toward degree requirements, even if you repeat the course.

UH Mānoa will not provide financial aid for a course that is not listed as repeatable in the course description or if a student repeated the course more than the number of times listed in the course description. Financial aid recipients who are repeating courses should see the Financial Aid Services Office with any questions.

Repeating Failed Courses

Students who receive an F or NC earn no credits. Students may repeat any course in which they received an F or NC for that semester. For courses taken as a repeat, the last grade received for the course shall be included in the student’s cumulative GPA. The grade from the previous attempt shall be excluded from the GPA. Grades for each attempt are permanently recorded on the transcript.

Repeating Courses with Grades of C-, D+, D, or D-

Students who receive grades of C-, D+, D, or D- earn the credits for that course. Students may repeat any course in which they received a grade of C-, D+, D, or D-. For courses taken as a repeat, the last grade received for the course shall be included in the student’s cumulative GPA for that semester. The grade from the previous attempt shall be excluded from the GPA. Grades for each attempt are permanently recorded on the transcript. Only one set of credits (i.e., 1 credit for a 1-credit course; 3 credits for a 3-credit course, etc.) can count toward degree requirements. Students should check with their academic advisor on repeating courses that they have already received a minimal passing grade.

For students who receive financial aid repeating courses in which they received a grade of C-, D+, D, or D-, their enrollment status will not include the repeat course and may affect the amount of aid received. Students should check with the Financial Aid Services Office on repeating courses that they have already received a minimal passing grade in regards to their eligibility for financial aid.

Repeating Courses with Grades of C or Higher

Students who have already received a grade of C or higher for a course that is not designated as “repeatable” may repeat it only with the permission of the instructor or of the department offering the course. Grades for each attempt are permanently recorded in the transcript, but only the first grade (not the repeat) is included in the GPA. Only one set of credits (i.e., 1 credit for a 1-credit course; 3 credits for a 3-credit course, etc.) can count toward degree requirements.

For students on financial aid, repeating courses in which they received a passing grade, their enrollment status will not include the repeat course and may affect the amount of aid received.

Duplicate Credits

Students can earn only one set of credits (i.e., 1 credit for a 1-credit course, 3 credits for a 3-credit course, etc.) for courses that are equivalent or comparable in content. Examples include:

- Cross-listed courses (e.g., BIOL 402 and MBBE 402)
- Transfer equivalencies (e.g., ZOOL 141 and PHYL 141, ENG 255 and ENG 271)
- Different levels of the same material (e.g., CHEM 151 and CHEM 161)
- Equivalent credits earned through exams, such as AP, IB, CLEP, etc.

Backtracking

“Backtracking” refers to taking either a prerequisite course or the lower level course in a tracked sequence concurrently with or after a more advanced course. Examples include:

- Completing Korean 211 and then taking Korean 102, its prerequisite
- Completing Japanese 202 and then taking Japanese 101, a lower level
- Taking Math 432 and then taking Math 431, a two-semester sequence that must be taken in order

If students choose to backtrack, credit is not awarded for the lower-level/prerequisite course, and although the grade is recorded in the transcript, it does not impact the GPA. In some cases, students may backtrack with the express permission of the student’s college/school academic services office.

Excess Credit Policy

A student who by the end of any semester has earned 24 credit hours beyond those required for graduation and has fulfilled all specific program and UH requirements may be graduated by action of the student’s college/school.

Grades

Grades are available through the MyUH Portal one week after the final examination period each semester. Grades for courses taken through Outreach College do not follow this schedule.

Examinations

Course Examinations

Final examinations are required in all undergraduate courses (except writing courses, directed reading, creative arts, research, seminars, internships, and field experiences) and must be taken during the scheduled examination period. No examinations (other than laboratory tests and short quizzes) are allowed during the two calendar weeks before the last day of instruction. Take-home final exams may be distributed at any time but may not be required to be turned in before finals. The schedule of final examinations is published in the Registration Guide.

Language Courses

Students who plan to continue the study of a language begun elsewhere must take a placement test to determine the course in which they should enroll.

For specific regulations governing courses that native or bilingual speakers may take for credit, students should consult the
department chairs of European languages, East Asian languages, Hawaiian language, or Indo-Pacific languages.

**Advanced Placement Examination**

The Advanced Placement examinations are administered in high schools by the Educational Testing Service for the College Entrance Examination Board for students who have completed specific college-level courses in high school. Students should consult the Office of Admissions for the most current UH Mānoa credit granting policy.

**Credit by Examination**

Students who wish credit by examination for basic courses in calculus, general biology, general chemistry, economics, English literature, psychology, and sociology should consult the Counseling and Student Development Center. Students apply to the center, pay the fee, and take the corresponding subject examination under the College-Level Examination Program (CLEP). A satisfactory score on these examinations, as determined by the appropriate department, yields course credit.

If a written exam is appropriate in other courses, it is prepared under the auspices of the department concerned, is more comprehensive than the usual "final examination," and is designed to serve as the scholastic equivalent of the course.

Applicants must be enrolled classified students; must present evidence that they have a mastery of the content of the courses (but have not received college credit); must apply, with department approval, to the dean’s office by the specified deadline; and must pay the current fee. Applications are available in the college/school student academic services office.

Courses passed by examination do not carry grades or grade points.

**Recognition of International Baccalaureate**

UH Mānoa recognizes the international baccalaureate for course credit. Students should submit higher-level examination scores to the Office of Admissions. Course credit is granted for acceptable scores. Contact the Office of Admissions for more information.

**Academic Programs**

**Undergraduate Certificate Programs**

UH Mānoa offers a number of undergraduate certificate programs, some of which are interdisciplinary. Certificates require a minimum of 15 credit hours of specified courses and a 2.5 GPA in those courses.

Undergraduate certificate programs are listed in the "Degrees, Minors, and Certificates" section.

**Bachelor's Degree**

**Objectives**

Institutional learning objectives include both academic and co-curricular learning and are listed on page 25. The baccalaureate academic program provides the student with a coherent undergraduate education that includes a comprehensive set of integrated learning opportunities. There are five basic components (listed below). Students can see the five components and requirements on bachelor degree program sheets at manoahawaii.edu/ovcaa/programsheets/.

**Requirements**

**General Education Requirements.** The General Education requirements are based on the conviction that an educated person has access to a shared body of knowledge; a comprehension of the major divisions of learning; and an understanding of the commonality in our ways of thinking, of experiencing self, and of acquiring new knowledge and skills. The common body of knowledge focuses broadly on heritage; values; political, economic, and social life; and a relationship with nature. Its study requires critical reading and listening, careful judgment, and clear exposition. The common thread in general education is the interconnectedness of human knowledge. See the "Undergraduate General Education Requirements" section for more information.

**Graduation Requirements.** See the “Focus” and “Hawaiian or Second Language” parts of the "Undergraduate General Education Requirements" section.

**Degree Requirements.** Some programs have degree-specific requirements, such as course requirements that distinguish a Bachelor of Arts from a Bachelor of Science.

**College or School Requirements.** Colleges/schools may specify which General Education courses should be taken to meet their requirements. They may also have additional requirements. Students should refer to specific college/school sections for more information.

**Major or Academic Specialization Requirements.** The major consists of a specific number of credit hours and required courses in a particular field or discipline and related courses in other subjects that are associated with and contribute to that discipline. Students must satisfy the requirements for the selected major and, if applicable, the minor or concentration selected. Detailed information can be found in the appropriate major or academic specialization sections. Students may also consult the bachelor degree program sheets at manoahawaii.edu/ovcaa/programsheets/.

**Minor Requirements.** Some departments offer a minor, which is a set of courses that relate to an approved baccalaureate degree. A minor course of study consists of a minimum of 15 credit hours of non-introductory work (i.e., upper division courses and 200-level courses that have a college-level prerequisite) that is completed with a grade of C (not C-) or better. Minors are listed in the “Degrees, Minors, and Certificates” section.

**Multiple Undergraduate Majors/Degrees**

Students may pursue simultaneous multiple undergraduate majors or degrees in one or more colleges/schools at UH Mānoa. Approval must be granted by all of the colleges/schools involved. Students requesting approval should submit an academic plan and/or written justification. There are five basic components to baccalaureate degree programs: (a) the General Education Core requirements (i.e., Foundations and Diversification); (b) the General Education graduation requirements (i.e., Hawaiian/Second Language, Focus, and credit requirements); (c) degree requirements; (d) individual college or school requirements; and (e) an academic specialization comprising a major; as well as electives that complement the other requirements.

Multiple undergraduate major and degree requirements are subject to the following:

1. Students pursuing multiple majors or degrees must complete all five components listed above for each school or college involved.
2. Shared General Education Core requirements, General Education graduation requirements, degree requirements, and college requirements may count towards multiple majors/degrees.
3. The same course(s) may not be used to satisfy major requirements of multiple programs unless the same specific course is a shared requirement.
4. Students must complete at least 15 credits of each of the multiple majors and degrees at UH Mānoa.
5. The decision to admit students into multiple undergraduate major or degree programs is at the discretion of the colleges/schools involved. For additional information and to request approval to pursue multiple majors or degrees students should consult their academic advisor.

**Second Bachelor’s Degree**

Applicants for a second bachelor’s degree must meet admission and graduation requirements of UH Mānoa, the college/school and the academic specialization. Students seeking their first bachelor’s degree have priority for admission and registration. Admitted students should confer with their academic advisors about graduation requirements.

**Graduation Requirements and Policies**

**Progress Toward the Bachelor’s Degree**

Students are expected to complete their academic work and apply for a degree in a timely manner (see “Excess Credit Policy”). The department or program in which the student is pursuing a degree may decide that certain courses required for the major that were taken in the past must be retaken. Courses that are declared outdated for the major will still count toward the General Education Core if they meet core requirements. Students should consult with their academic advisor in their major field of study for details.

**Residency Requirements**

Students must earn a minimum of 30 credit hours in residence (i.e., taking credit courses or their equivalent by examination) at UH Mānoa. However, meeting the residency requirements does not necessarily mean that degree requirements have been met; the latter are determined by individual colleges or schools.

A degree candidate must be registered and in attendance during the semester (or summer session) he or she completes the requirements for his or her degree, unless permission has been given for graduation in absentia by the appropriate college/school dean.

**Application for Degree**

An application for graduation must be obtained at the student academic services office of the appropriate college/school. This must be done by the deadlines specified in the “Calendar.”

**Academic Honors**

**Dean’s List**

Undergraduate students are awarded the Dean’s List distinction if they: (1) earn a semester grade point average of 3.5 or higher based on 12 credits or more taken for a grade, and (2) do not receive grades of W, I, F, or NC for that semester. The grades used for calculation of grade point average will be those earned by a date determined by the Office of the Registrar. Colleges/schools may establish independent criteria for the award of Dean’s List distinction with the approval of the Vice Chancellor for Academic Affairs.

**Graduating with Honors**

Honors degrees are granted only to participants in the UH Mānoa Honors Program (see page 21).

**Graduating with Distinction**

Graduating seniors who have completed 30 or more credit hours of work at UH Mānoa with the following cumulative GPA are eligible for graduation with distinction as noted: 3.5 to 3.74 *cum laude* 3.75 to 3.9 *magna cum laude* over 3.9 *summa cum laude*

Graduation with distinction is subject to the following stipulations:
1. The 30 or more credit hours from UH Mānoa must come from courses carrying grade points (this excludes CR/NC); 2. The cumulative GPA for graduating with distinction is calculated on the total college work (which encompasses academic work at UH Mānoa and all other colleges and universities, if any). This academic work includes both transferable and nontransferable credits carrying grade points but excludes CR/NC or other non-letter grade options such as pass/fail; and 3. Candidates for second degrees are not eligible.

The appropriate designations will be recorded on the diploma and transcripts.

**Honor Societies**

Alpha Kappa Delta, *International Sociology Honor Society*

Alpha Omega Alpha, *National Honor Society in Medicine*

Beta Alpha Psi, *National Accounting Honor Society*

Beta Gamma Sigma, *National Business Honor Society*

Beta Phi Mu, *International Library Science Honor Society*

Chi Epsilon, *National Civil Engineering Honor Society*

Delta Omega, *National Honor Society for Public Health*

Delta Phi Alpha, *National German Honor Society*

Eta Kappa Nu, *National Electrical Engineering Honor Society*

Eta Sigma Delta, *International Hospitality Management Honor Society*

Gamma Kappa Alpha, *National Honor Society for Italian*

Gamma Sigma Delta, *National Agriculture and Human Resources Honor Society*

Gold Humanism Honor Society, *Medical Honor Society*

Golden Key International Honour Society, *International Undergraduate Honor Society*

Japanese National Honor Society

Kappa Tau Alpha, *National Journalism Honor Society*

Lambda Delta, *Freshmen Honor Society*

Lambda Pi Eta, *National Honor Society for Communication*

Mortar Board, *Senior Honor Society*

National Society of Collegiate Scholars, *Sophomore Honor Society*

Omega Epsilon Delta, *International Honor Society in Economics*

Phi Alpha Theta, *National Honor Society in History*

Phi Beta Kappa, *National Liberal Arts and Sciences Honor Society*

Phi Upsilon Omicron, *National Home Economics Honor Society*

Pi Delta Phi, *National French Honor Society*

Pi Kappa Lambda, *National Music Honor Society*

Pi Lambda Theta, *National Education Honor Society*

Pi Sigma Alpha, *National Political Science Honor Society*

Pi Tau Sigma, *National Mechanical Engineering Honor Society*

Psi Chi, *International Honor Society in Psychology*
Regents and Presidential Scholars
Sigma Delta Pi, National Spanish Honor Society
Sigma Phi Alpha, National Dental Hygiene Honor Society
Sigma Pi Sigma, National Physics Honor Society
Sigma Theta Tau, National Honor Society in Nursing
Tau Sigma, National Honor Society for Transfer Students
Tau Sigma Delta, National Honor Society in Architecture and Allied Arts

For further information on these honor societies, contact the appropriate academic unit.

Satisfactory Academic Progress Toward a Degree, Minimum UH Mānoa Academic Standard, and Good Academic Standing

Once a student has attempted at least 24 college credits at UH Mānoa, he or she shall make satisfactory academic progress toward a degree and remain in good academic standing by maintaining a cumulative grade point average of 2.0.

Academic Probation, Suspension, and Dismissal

No academic action shall be taken until a student has attempted 24 credit hours.

- Suspension and dismissal actions for all students will only be taken after spring semester.
- All students who have or would have had an academic action taken will be directed to see their academic advisor immediately and a “hold” will be placed on their registration until that meeting has occurred. The college advising office will work proactively with the student over the course of the semester to help improve academic performance.
- All retention and continuation data will be collected from colleges and units at the end of spring semester to assess the effectiveness of their intervention strategies.

Undergraduate and unclassified students seeking exemption for cause from regulations and requirements contained in this Catalog should consult the dean of student academic services of their college/school. UH Mānoa reserves the right to withhold the degree or to request the withdrawal of a student for cause.

Probation

Students may be placed on academic probation at the end of any semester when their cumulative GPA falls below 2.0 or when they fail to maintain the minimum academic requirements of their college, school, or program. Probationary students may register for classes at UH Mānoa, but must achieve a current GPA of at least 2.0 in each probationary semester to be allowed further registration. Failure to meet these conditions may result in suspension or dismissal.

Unless an extension has been granted by the college/school’s student academic services dean, students may be put on probation if they have taken 24 credit hours beyond those required for graduation but still have not completed their specific program requirements.

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

Suspension

Students may be suspended when they fail to achieve a cumulative GPA of at least 1.7 after attempting 24 credit hours or when they fail to meet the terms of probation.

Once suspended, a student is not eligible for readmission to UH Mānoa or Outreach College for one full semester (fall or spring). A suspended student who is currently registered in an Outreach College summer course may complete the course. However, completion of the course will not change the suspension.

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

Applications for Return from Suspension

Students who wish to return after suspension should apply to the Office of Admissions—for the fall semester by the initial deadline of January 5 or final deadline of March 1, and for the spring semester by the initial deadline of September 1 or final deadline of October 1.

Suspended students who attend another institution will be considered “transfer students” when reapplying to UH Mānoa, and must meet all transfer requirements. They will have their work evaluated by the college/school in order to determine eligibility for readmission.

Students who take no courses after being suspended for the required one semester are eligible to be readmitted into the college/school from which they have been suspended provided they submit an application form by the official deadline. However, readmission is not automatic if the student stays out beyond the required period.

Students readmitted after suspension are placed on probation and must meet the terms and conditions of probation as specified above. Failure to do so will result in dismissal.

Dismissal

Students who have been suspended and who subsequently fail to maintain the minimum academic requirements of UH Mānoa or their college, school, or program or fail to meet the terms of probation may be dismissed. Such students will be readmitted only in unusual circumstances. Students admitted on probation may be dismissed if they fail to maintain the minimum academic requirements or to meet the terms of probation.

Once dismissed, a student is not eligible for readmission to UH Mānoa or Outreach College for a minimum of one academic year (fall and spring semester). A dismissed student who is currently registered in an Outreach College Summer Session course may complete the course. However, completion of the course will not change the dismissal.

Regulations governing academic dismissal are applied at the end of each semester (fall or spring).

The following conditions apply to students who have been dismissed one or more years:
1. To apply for readmission as a classified or unclassified student at UH Mānoa, the student should do so on the admissions application form, following established procedures and deadlines. The student must meet the standard admission criteria applicable to all students. The Colleges of Arts and Sciences require a written statement from the student explaining the circumstances of the dismissal and a rationale for reinstatement. If readmitted, the student is placed on academic probation and must meet established terms of probation;
2. To enroll in Outreach College, the student is eligible if he or she has attended any UH System campus or other regionally accredited college or university subsequent to the dismissal and earned a cumulative post-dismissal GPA of 2.0 or better.
for a minimum of 12 earned credits. Transcripts will be required to establish eligibility; or

3. To enroll in Outreach College, the student who has not earned a cumulative post-dismissal GPA of 2.0 or better for a minimum of 12 earned credits at another UH System campus or other regionally accredited college or university subsequent to dismissal may petition the dean of Outreach College for special enrollment consideration.

Other Provisions
Upon finding that a student is suffering from a physical or mental condition detrimental to the student or to UH Mānoa, the vice chancellor for students will, on medical advice, recommend proper action to the appropriate college/school’s student academic services dean. The dean may request that the student be withdrawn officially, without prejudice or academic penalty. Readmission is contingent upon review and recommendation by the college/school’s student academic services dean and the vice chancellor for students.

Leave of Absence
Continuing classified undergraduate students may apply for a leave of absence for a specified period of one or two semesters if they (1) have just completed their prior semester (fall or spring) at UH Mānoa, (2) are in good standing (neither on probation nor subject to suspension or dismissal), and (3) are not enrolled at any institution. Students who do not meet the requirements may consult their College Student Academic Services offices. Students may not take more than two regular semesters of leave before graduation; additional semesters of leave will be granted only under extenuating circumstances. The granting of a leave of absence indicates a continuing relationship with UH Mānoa and allows students to resume studies at a specific time without applying for readmission. Students who take a leave of absence will continue to be subject to the core, major, and graduation requirements in effect at the time their leave began.

Students have two options for taking an official leave of absence: (1) a planned leave, and (2) a leave taken at the time of withdrawal from UH Mānoa. To apply for a planned leave for the upcoming semester, students should submit an application for leave of absence prior to the beginning of the semester that the leave is to be taken. Application for a leave can also be submitted at the time of complete withdrawal from UH Mānoa. Applications for a leave of absence are available in the student academic services office at the student’s college/school. The date of return from leave must be specified at the time of application.

Students who do not reenroll at UH Mānoa at the end of their leave of absence will be considered to have withdrawn without notice; they will be required to apply for readmission to UH Mānoa and will be subject to the core, major, and graduation requirements in effect at the time of readmission.

Students should be aware that taking a leave of absence may affect their residency status and eligibility for programs such as financial aid, intercollegiate athletics, etc. Upon return from an approved leave of absence, students may also find that registration in courses with fixed faculty/student ratios may be dependent upon availability of space.

Programs

Financial Literacy Program
Crawford Hall Room 225
2550 Campus Road
Honolulu, HI 96822
Tel: (808) 956-6572
Email: finlit@hawaii.edu
Web: manoa.hawaii.edu/undergrad/finlit/
Coordinator: S. Miyashiro

The Financial Literacy Program (FLP) provides tools and solutions to our UH Mānoa students equipping them to become responsible and financially independent by better managing their personal finances, improving their economic opportunity and to obtaining a desirable quality of life. FLP offers free workshops, presentations, seminars, resources and interactive activities on a variety of financial topics such as goal setting, personal budgeting, savings, obtaining and managing credit, student loans, investing, retirement, insurance and much more. Our workshops and seminars include practical tips and strategies that students can apply to their personal financial situations. All of our services are available to our UH Mānoa community.

First-Year Programs
Student Success Center
Gregg M. Sinclair Library
2425 Campus Road
Honolulu, HI 96822
Tel: (808) 956-8626
Email: freshman@hawaii.edu
Web: www.manoa.hawaii.edu/undergrad/freshman/
Coordinator: K. Van Duser

First-Year Programs ease the transition of new students into the academic and social communities at UH Mānoa. First-Year Programs provide the opportunity to develop personal relationships with faculty and other students, enhance active involvement in the educational process, and build connections to UH Mānoa. In addition, First-Year Programs familiarize students with the array of resources and programs available at UH Mānoa.

Access to College Excellence
Tel: (808) 956-8626
Web: manoa.hawaii.edu/undergrad/freshman/access-to-college-excellence/
Coordinator: K. Van Duser

Access to College Excellence (ACE) learning communities offer a combination of three general education courses and a small group, 1-credit integrating seminar (CAS 110: Integrating Seminar I). Courses are grouped to provide freshmen with an introduction to various academic perspectives while fulfilling graduation requirements. CAS 110 is led by an upperclassman peer mentor who supports freshmen cohorts in their new learning environment. Successful college students themselves, peer mentors assist with the development of successful academic strategies, creation of social and interpersonal networks, and involvement in a variety of campus events. ACE espouses a well-rounded, multifaceted approach to college education. Freshmen who are eager to learn, enthusiastic about making friends while
increasing independence, and excited about getting involved will benefit from what ACE has to offer.

**Freshman Seminars**
Tel: (808) 956-8626  
Web: manoa.hawaii.edu/undergrad/freshman/program-overview/  
Coordinator: K. Van Duser

Freshman Seminars offers freshmen a variety of courses, which enable them to learn in small class environments (classes are limited to 10 students). The purpose of this program is threefold:  
1. To create an intimate learning community for faculty and students who place a high value on the human dimension of education;  
2. To provide students with small classes in which they take an active and responsible part and receive constant peer stimulation, support, and feedback;  
3. To offer advanced students an opportunity to gain experience in leadership and mastery over their major by teaching.  

The three credit seminars are mainly, but not limited to, General Education Core classes led by qualified advanced students under the direction of department faculty. These seminars provide valuable learning experiences for both the students taking the class and the students leading the class. Courses vary each semester, but may include: communology, ethnic studies, library and information systems, political science, religion, and sociology. They are listed in the *Registration Guide* under each department.

**General Education Office**  
Bilger Hall 104  
2545 McCarthy Mall  
Honolulu, HI 96822  
Tel: (808) 956-6660  
Fax: (808) 956-9170  
Email: gened@hawaii.edu  
Web: www.hawaii.edu/gened  
Director: H. Aikau

The General Education Office (GEO) is the administrative support arm of Mānoa’s faculty-governed General Education (GenEd) Program. GEO staff assist the faculty groups that oversee GenEd by coordinating faculty review of proposed and existing GenEd courses, maintaining records of the GenEd Program, and assisting with faculty development and training efforts.

**Honors Program**
Gregg M. Sinclair Library 128  
2425 Campus Road  
Honolulu, HI 96822  
Tel: (808) 956-8391  
Web: manoa.hawaii.edu/undergrad/honors/  
Director: V. Gonzalez

The Honors Program provides opportunities for talented and motivated undergraduates to excel in their academic studies. Students complete a challenging enquiry-based curriculum that encourages learning through independent research and creative expression. They enjoy intimate and personalized educational experiences within the setting of a large research university through small classes, dedicated advising, peer mentorship, and faculty guided projects. The Honors Program encourages critical thinking and excellence in oral and written communication; instills respect for diversity and commitment to social justice; and develops the capacity for civic engagement and leadership. It fosters among its students and faculty a sense of identity and a joy of learning, which it promotes within the university and beyond.

**Selected Studies**

Selected Studies is the lower division component of the Honors Program. It offers both its own Honors courses, conducted in seminar format and specially designated “A Sections,” which are small, discussion-based versions of regular departmental offerings. These courses are designed to meet the General Education requirements of students in the Honors Program. A full list of Honors (HON) courses is available in the “Courses” section.

A certificate for Sophomore Honors is awarded to students in Selected Studies who complete sufficient credits in Honors courses and who maintain a minimum GPA of 3.25 in those courses and overall. In addition, a special notation is made on the student’s transcript.

Admission to Selected Studies is by invitation to high school students with outstanding academic records and aptitude test scores. Others may be nominated or may apply with the recommendation of a high school teacher or counselor. UH Mānoa students may also apply in their first year with the recommendation of a university instructor.

**Upper Division**

Honors degrees are awarded in most disciplines at UH Mānoa, but candidates must be enrolled in the UH Mānoa Honors Program. Upper Division Honors students take a sequence of 12 credits that culminates in a Senior Honors Project, which is independent thesis research or creative work completed under the supervision of a faculty member. The sequence begins with a Junior Honors Seminar and an upper-division seminar course on research methods. Subsequently, students pursue a two-semester program of independent research for the Senior Honors Project under the supervision of their faculty advisor. The Senior Honors Project is presented or performed at the Fall Forum or the Spring Symposium. The full list of courses is available in the “Courses” section of this *Catalog* under Honors (HON).

To graduate with Honors, students must complete the requirements for a bachelor’s degree and maintain a minimum cumulative GPA of 3.2 in both their major and in their senior-junior years. In addition, at least one of these GPAs must be in the top 25% of the graduating class in their college/school. The Honors Council receives written assessments of performance from instructors and thesis supervisors for all coursework in Upper Division Honors, and receives a copy of the Honors Senior Project. Assessing this evidence, the Honors Council decides whether candidates are awarded “Honors,” “High Honors,” or “Highest Honors.” Students receive a diploma, their achievement is acknowledged at Commencement, and a notation is made on their transcript.

Admission to the Honors Program is by invitation to those on Deans’ lists, but others may be nominated or may apply with the recommendations of instructors and faculty at UH Mānoa. Students need at least three semesters to complete the requirements so it is best to apply in the second semester of the sophomore year or early during the junior year.
Interdisciplinary Studies

Krauss 116
2500 Dole Street
Honolulu, HI 96822
Tel: (808) 956-7296
Web: manoa.hawaii.edu/undergrad/is/
Director: J. Odin

The objective of the Interdisciplinary Studies (IS) Program is to provide students with an opportunity to pursue a course of study that is not restricted to conventional departmental or unit boundaries. A crucial feature is the advising process, which aims to develop the student’s ability to formulate a major equivalent comprised of upper division courses with thematic integrity and continuity. This ensures flexibility in the curriculum while precluding loss of academic substance and rigor. Thus students create their own degree proposals that must draw upon no less than three disciplines in the UH Mānoa Catalog in the study of a particular problem or theme, along with specifically designed IS courses.

While the IS program encourages creation of individually-conceived curricula, it also serves to accommodate students in a variety of fields that lack an undergraduate major and are interdisciplinary in nature. These include:
1. Pre-professional majors (e.g., pre-law, pre-med, pre-optometry, pre-physical therapy);
2. Undergraduate majors that are established at UH Mānoa only as graduate programs (e.g., astronomy, educational psychology, linguistics); and
3. Interdisciplinary majors for which there is no currently existing department or program (e.g., criminology, gerontology, disability studies, health studies, globalization studies, international studies).

Students interested in these programs should see both the program in Interdisciplinary Studies for an orientation at Krauss Hall 116 and an advisor from the relevant program. Degree proposals must focus upon the identified academic theme, be made in writing, and be accepted by the interdisciplinary studies faculty before the student enrolls for 21 of the 36 credits required in the major equivalent.

In all cases, IS students must satisfy the UH Mānoa degree graduation requirements and General Education Core in order to be eligible for a bachelor’s degree. Students must also maintain a minimum 2.5 GPA for the major equivalent courses. These courses may not be taken CR/NC, unless mandatory. Successful candidates earn a bachelor of arts in Interdisciplinary Studies from the Colleges of Arts and Sciences in the appropriate interdisciplinary program.

Details about admission to the IS program offered in the Colleges of Arts and Sciences, and assistance in preparing an individually designed major are available at the program office.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Learning Assistance Center

Student Success Center, Gregg M. Sinclair Library
2425 Campus Road
Honolulu, HI 96822
Tel: (808) 956-6114
Email: learning@hawaii.edu
Web: www.manoa.hawaii.edu/undergrad/learning/
Director: R. Woodruff

The Learning Assistance Center (LAC) is a developmental education program that provides academic counseling services and assists students in developing learning skills to increase academic success. The LAC assists students in becoming autonomous, confident, and effective learners in order to successfully meet academic standards. It assists students in the ongoing development of academic and affective skills that contribute to positive adjustment and performance in the learning environment. Students can participate in individual or group sessions to become more proficient in managing time, reading, writing, taking notes, taking exams, and to enhance academic motivation. A tutoring program that provides help for courses that students find particularly challenging is available. Initial assessment, counseling and support services for students with learning disabilities are also provided.

Mānoa Advising Center

Queen Liliʻuokalani Center for Student Services 101
2600 Campus Road
Honolulu, HI 96822
Email: macadv@hawaii.edu
Web: manoa.hawaii.edu/undergrad/MAC/
Director: M. Makino-Kanehiro

The Mānoa Advising Center (MAC) is an advising office for students who have not yet declared a major.

- MAC provides advising to select pre-majors (students who must apply/be admitted to or be selected as majors) such as Pre-Business, Pre-Medical Technology, Pre-Dental Hygiene, Pre-Social Work, Pre-Medicine, Pre-Pharmacy, and Pre-Law with special attention paid to admission requirements and planning to facilitate successful transition into their chosen majors.
- MAC assists exploratory students who have not yet selected a major with their selection process by presenting options and providing general education advising.

Students with declared majors are referred to appropriate major, school, and college advisors.

MAC is staffed by academic advisors and peer advisors (specially selected and trained upperclassmen).

MAC Student Learning Outcomes: (1) students can identify major options; (2) students can learn, identify, and understand general education, graduation and program requirements using advising combined with supplemental services; and (3) students can identify and use campus resources available to them.
Mānoa Transfer Coordination Center
Student Success Center, Gregg M. Sinclair Library
Mezzanine 2, 2425 Campus Road
Honolulu, HI 96822
Email: jb26@hawaii.edu
Web: manoa.hawaii.edu/undergrad/Transfer/
Coordinator: J. Brown

The Mānoa Transfer Coordination Center (MTCC) is to help students transfer smoothly from a UH community college to UH Mānoa and provide advising support throughout the transfer process, including the Ka‘ie‘ie Degree Pathway Program.

Transfer advisors can:
- Explain the various transfer options for UH Mānoa
- Identify and provide contact information of specific college and major advisors at UH Mānoa
- Identify UH Mānoa campus resources
- Address transfer issues
- Provide guidance to students in the Ka‘ie‘ie Degree Pathway Program.

Mānoa Writing Program
Bilger Hall 104
2545 McCarthy Mall
Honolulu, HI 96822
Tel: (808) 956-6660
Fax: (808) 956-9170
Email: mwip@hawaii.edu
Web: manoa.hawaii.edu/mwp/
Director: H. Aikau

The Mānoa Writing Program was created by the UH Board of Regents in 1987 to administer General Education writing requirements. Its efforts are guided by a board of seven professors, each from a different department. The faculty board reviews requests to give classes writing-intensive (W) Focus designations, offers faculty workshops on teaching with writing, and surveys students, who must complete five W courses to graduate. Administering over 500 W sections per semester, the Mānoa Writing Program’s ultimate goal is to prepare all UH Mānoa graduates for the different writing tasks that society and their professions will present to them.

Pre-Health/Pre-Law Advising Center
Gregg M. Sinclair Library 108
2425 Campus Road
Honolulu, HI 96822
Tel: (808) 956-8646
Email: uhpac@hawaii.edu
Web: www.manoa.hawaii.edu/undergrad/PAC/
Director: K. Shiroma

The Pre-Health/Pre-Law Advising Center (PAC) is a walk-in resource for students interested in law, medicine, or any other health field (dentistry, occupational therapy, optometry, pharmacy, physician assistant, physical therapy, etc.). PAC advisors help students explore and clarify their career goals, plan appropriate coursework, find opportunities to gain experience, apply to professional programs, review personal statements and résumés, provide mock interviews, and hold workshops throughout the year.

Service Learning Program
Queen Lili‘uokalani Center for Student Services 209
2600 Campus Road
Honolulu, HI 96822
Tel: (808) 956-4641
Fax: (808) 956-3394
Email: slp@hawaii.edu
Web: manoa.hawaii.edu/undergrad/servicelearn/
Director: A. Pascua

The Service Learning Program offers UH Mānoa students and community agencies the opportunity to participate in a partnership of volunteer service.

The Service Learning Program functions as a clearinghouse. It links UH Mānoa students interested in donating their valuable time and experience with volunteer agencies within the community.

Students receive information on the volunteer experience, and agencies have access to enthusiastic, energetic, and skilled student volunteers.

The Service Learning Program serves as the headquarters for Hawai‘i/Pacific Islands Campus Compact, a membership organization comprised of presidents and chancellors to promote civic engagement in higher education. Hawai‘i/Pacific Islands Campus Compact also provides opportunities for students to become members of Americorps, a federal service program.

Student Athlete Academic Services
Nagatani Academic Center
1337 Lower Campus Road, PE/A
Honolulu, HI 96822
Tel: (808) 956-3388
Fax: (808) 956-5042
Web: manoa.hawaii.edu/undergrad/SAAS/
Director:

Student Athlete Academic Services (SAAS), is the academic support program for student-athletes at UH Mānoa. Working closely with instructional faculty, coaches, and campus resources, academic advisors assist students in formulating and meeting their academic goals while participating in intercollegiate athletics. SAAS is conveniently located in the Nagatani Academic Center (NAC), adjacent to the Stan Sheriff Arena in the Athletic Department complex.

SAAS provides orientation programs, academic and athletic advising, and registration assistance. Learning services include peer mentoring, subject tutoring, and small group study sessions.

Student Success Center
Gregg M. Sinclair Library
2425 Campus Road
Honolulu, HI 96822
Tel: (808) 956-5425
Email: duser@hawaii.edu
Web: manoa.hawaii.edu/undergrad/ssc/
Interim Director: K. Van Duser

The Student Success Center in Sinclair Library offers students a welcoming and convivial place to study and to learn, and provides them the information and skills they need to be successful in their academic career and beyond. The center provides seating that facilitates collaborative learning, is open long hours, and permits students to bring their own snacks, all in a space that has natural light and air.
The Student Success Center provides a place for students to address individual needs with librarians, mentors, tutors, advisors, counselors, and/or teachers. At the entrance to the center, the Information Concierge Desk has staff available to assist students in finding the help they need, including referral to other departments on campus, that supports success in their academic work. In addition, the center hosts a number of partners including the First Year Programs, Honors Program, Learning Assistance Center (LAC), Pre-Health, Pre-Law Advising Center (PAC), Manoa Transfer Coordination Center (MTCC), and the Wong Computer Lab and Digital Media Center where students can find equipment for word processing and production of digital media products. Generous study spaces with electrical power for personal devices are spread throughout the first floor. Group study rooms with media equipment are available for student use via online reservation. More details about the center are available at manoa.hawaii.edu/undergrad/sss/.

**Student Support Services**

Krauss 114  
2500 Dole Street  
Honolulu, HI 96822  
Tel: (808) 956-8402  
Fax: (808) 956-9763  
Email: sss@hawaii.edu  
Website: manoa.hawaii.edu/undergrad/sss/  
Director: M. Yoshimoto

Student Support Services (SSS) is a federally funded program that provides academic advising and planning, special courses, financial aid advice, graduate and professional school advising, tutoring, mentoring, and academic enrichment activities to program students enrolled at UH Mānoa.

Students are selected to participate based on income and financial aid eligibility, whether parents have completed a bachelor’s degree, and potential to benefit from program services.

The goal of SSS is to increase college retention, academic success and graduation rates of program participants. For application and other information, please contact SSS Advisors Gary Tachiyama and Barbara Watanabe at (808) 956-8402.

**Study Abroad Center**

Moore 115  
1890 East-West Road  
Honolulu, HI 96822  
Tel: (808) 956-5143  
Fax: (808) 956-9319  
Email: uhmsac@hawaii.edu  
Web: www.studyabroad.org  
Director: S. Rai

The Study Abroad Center (SAC) collaborates with various UH Mānoa academic departments to provide opportunities for students to study, and faculty members to teach and conduct research, in another country. SAC develops, implements, and evaluates UH Mānoa study abroad programs. The center provides informational, advisory, and support services to students and faculty concerning international educational opportunities.

SAC programs are offered for a summer term, a semester, or an academic year. The essence of SAC programs is to acquire knowledge through academic work and to develop a cross-cultural understanding through cultural immersion. Students earn UH Mānoa credits for course work completed abroad. The courses offered in these study abroad programs may be used to fulfill a student’s major, language, general education, graduation, or elective course requirements. Any Study Abroad course may be used as an exemption to fulfill a focus requirement. Students on Study Abroad may use the focus exemption to satisfy an appropriate 3-credit diversification and/or focus requirement. Courses taken overseas will appear on UH Mānoa transcripts as UH Mānoa courses.

SAC provides faculty members with opportunities to develop courses and publications based upon research and teaching experiences within the global arena. In addition, faculty members who lead study abroad programs have a wide range of responsibilities in their capacity as “in-country” resident directors.

SAC programs and course offerings may vary each academic term.

**Semester and Year Programs**

SAC offers semester programs in Australia, Denmark, England, France, Italy, Japan, and Spain. The Year-in-Japan program is offered only for a full academic year. Students enrolled in these programs must register for a minimum of 12 credit hours each term. All programs offer several content courses that are taught in English.

**Summer Programs**

SAC summer programs require enrollment in a minimum of 6 credit hours. Course offerings include, but are not limited to, archaeology field schools (Tuscania and Cyprus), architecture and design, environmental sustainability, social sciences, international business, health policy (Copenhagen), Arabic (Seville), business, humanities/social sciences (Paris), Engineering (Lelle), European art and architecture (various locations in Western and Eastern Europe), French (Annecy and Angers), German, business humanities and political science (Berlin), Italian humanities (Florence), Japanese (Kobe), Mandarin (Hainan), Russian (Vladivostok), and Spanish and Latin American film and literature (Mendoza).

**Self-Designed Study Abroad Programs**

Students can design a study abroad program different from those offered by SAC and receive UH Mānoa credits. Such a program may fall under the category of the Self-Designed Study Abroad Program. A Self-Designed Study Abroad Program can be created for countries and/or cities where UH Mānoa does not have an existing study abroad program. Students have conducted Self-Designed Study Abroad Programs in Austria, Brazil, Cambodia, China, Costa Rica, Egypt, Greece, Ghana, India, Israel, Japan, Mexico, Morocco, Nepal, New Zealand, South Africa, Spain, Switzerland, Taiwan, Vietnam, and United Arab Emirates.

**Study Abroad Internships**

Study Abroad internships are available in Florence, London, Paris, and Seville. Internships are carefully planned and each student is placed in a working environment that has been requested and carefully selected according to specific criteria. Internships are generally unpaid. Internship credits will be based on the field of the internship. Internship credits range from 2, 3, 4, or 6 credits in the areas of Academy of Creative Media, Apparel and Product Design and Merchandising, Business, Finance, Human Resources, Management and Information Systems, Marketing, Real Estate, Social Work, and Travel Industry Management.
Admission Requirements
SAC programs are designed primarily for undergraduate students who have completed a minimum of 24 credits with a cumulative GPA of 3.0. UH Mānoa Financial Aid is applicable and available to eligible students. Several program specific scholarships are also available. Admission to some intensive language programs require a minimum of one year of language study at the college level. For program brochures, detailed information, and an application, contact SAC or visit the website at www.studyabroad.org.

Initiatives

Exploratory Program
Queen Liliuokalani Center for Student Services 101
2600 Campus Road
Honolulu, HI 96822-2217

The Exploratory Program will require all exploratory students to select one of seven broad interest areas upon entering UH Mānoa. The broad interest areas are as follows: Sciences; Integrative Studies; Business and Industry; Language Studies; Humanities and Social Sciences; Visual, Creative and Performing Arts; and Exploratory. Students will use the STAR pre-registration system to help guide them into one of the seven broad interest areas and select appropriate courses. Students will complete an assessment examining their values, interests, and career goals. The Exploratory Program will provide advising, a series of major/occupational workshops and co-curricular opportunities designed to support exploratory students in their declaration of a major and encourage active student engagement within the UH Mānoa community.

Mānoa Peer Advisor Program
Queen Liliuokalani Center for Student Services 101
2600 Campus Road
Honolulu, HI 96822-2217
Email: uhmpa@hawaii.edu
Web: manoa.hawaii.edu/undergrad/mac/mpa/
Supervisors: M. Makino-Kanehiro and A. Kapaona

The Mānoa Peer Advisors (MPA) program provides peer advisors for advising offices throughout campus. The purpose of MPA is to increase students’ access to academic advising, relieve workload for academic advisors, develop valuable skills, and provide role model representatives for UH Mānoa. MPAs are selected each spring in a competitive application process to be trained intensively during Summer Session I on UH Mānoa General Education requirements, advising practices, the philosophy and techniques of advising, and the resources available to students. Upon successful completion of training, MPAs are matched with advising offices, where they provide advising to fellow students during the academic year.

Mānoa Sophomore Experience Program (MSE)
Email: secondyr@hawaii.edu
Web: manoa.hawaii.edu/undergrad/sophomore/
Coordinator: R. Tagalicod

The Mānoa Sophomore Experience (MSE) is a program dedicated to helping sophomores navigate academic requirements and campus life so they become engaged with the campus community and invested in their college experience. Committee members include faculty and staff from various departments in Student and Academic Affairs, student representatives, and a dedicated peer mentor.

Mānoa Institutional Learning Objectives for Undergraduate Students

Institutional Learning Objectives (ILOs) encompass the UH Mānoa undergraduate experience as a whole—academic and co-curricular. It is through the combined efforts of faculty, students, staff, and administrators that students achieve the ILOs.

1. Know—Breadth and Depth of Knowledge
Students develop their understanding of the world with emphasis on Hawai‘i, Asia, and the Pacific by integrating:
a. General education knowledge (arts and humanities, biological sciences, languages, physical sciences, social sciences, technology);
b. Specialized study in an academic field; and
c. Understanding of Hawaiian culture and history.

2. Do—Intellectual and Practical Skills
Students improve their abilities to:
d. Think critically and creatively;
e. Conduct research; and
f. Communicate and report.

3. Value—Personal and Social Responsibility
Students demonstrate excellence, integrity, and engagement through:
g. Continuous learning and personal growth;
h. Respect for people and cultures, in particular Hawaiian culture;
i. Stewardship of the natural environment; and
j. Civic participation in their communities.
To graduate from UH Mānoa, a student must satisfy (a) General Education requirements, (b) requirements of the student’s college or school, and (c) requirements of the student’s specific academic major. (Consulting his or her college/school advising office can help a student select courses that simultaneously satisfy more than one requirement.) This section of the Catalog describes the four components of the UH Mānoa General Education requirements:

1. Foundations
2. Diversification
3. Focus
4. Hawaiian or Second Language

Foundations and Diversification together are UH Mānoa Core requirements. Focus and Hawaiian or Second Language together are UH Mānoa Special Graduation requirements.

Students who transfer to UH Mānoa having completed the Foundations/Basic requirements at another UH System school are considered to have fulfilled UH Mānoa Foundations requirements. Students who transfer to UH Mānoa having completed the Diversification/Area requirements at another UH System school are considered to have fulfilled UH Mānoa Diversification requirements. Finally, students who transfer to UH Mānoa having completed both the Foundations/Basic and the Diversification/Area requirements at another UH System school are considered to have fulfilled the UH Mānoa Core (Foundations and Diversification) requirements.

A grade of D (not D-) or higher is required for a course to fulfill General Education requirements. The Credit/No Credit option is not allowed for any course taken to fulfill a General Education requirement, with the exception of those courses offered only for CR/NC. (See “Grades” on p. 15 of the Catalog for additional information.)

1. Foundations Requirements: 12 credits

The Foundations requirements are intended to give students skills and perspectives that are fundamental to undertaking higher education. Students complete the Foundations requirements during their first year at UH Mānoa. Courses taken to fulfill the Foundations requirements may not be used to fulfill Diversification or Focus requirements.

- **Written Communication (FW): 3 credits**

  Written Communication courses introduce students to the rhetorical, conceptual, and stylistic demands of writing at the
Undergraduate General Education Requirements for Students Entering Fall 2015

General Education Goals

UH Mānoa provides an environment in which both faculty and students can discover, examine, preserve, and transmit the knowledge, wisdom, and values that will enrich present and future generations. UH Mānoa’s special and global distinction is found in its Hawaiian, Asian, and Pacific orientation. The academic program structure and research enterprise take special advantage of Hawai‘i’s unique environment.

General Education at UH Mānoa involves a flexible and diverse multi-disciplinary curriculum. The General Education requirements foster a deeper appreciation of the complexities and potentialities of the human experience from the perspectives of the arts, humanities, and the natural and social sciences. They also encourage an understanding of imagination and creativity through the application of abstract and intuitive thinking. Upon graduation, students will be able to:

- Appreciate the values and ideas of cultures as they have evolved and as they find expression in literature, history, philosophy, religion, art, and music;
- Reason and analyze effectively;
- Communicate clearly and effectively in Standard English;
- Know the aims and methods of science;
- Recognize the ways in which individuals and social institutions organize and shape behavior.

**Symbolic Reasoning (FS): 3 credits**

Symbolic Reasoning courses expose students to the beauty and power of formal systems, as well as to their clarity and precision; courses do not focus solely on computational skills. Students learn the concept of proof as a chain of inferences. They learn to apply formal rules or algorithms, engage in hypothetical reasoning, and traverse a bridge between theory and practice. In addition, students develop the ability to use appropriate symbolic techniques in the context of problem solving and to present and critically evaluate evidence.

**FS Courses**

- BUS 250* Applied Math in Business
- ICS 141 Discrete Mathematics for Computer Science I
- ICS 241* Discrete Mathematics for Computer Science II
- MATH 100 Survey of Mathematics
- MATH 112* Math for Elementary Teachers II
- MATH 140** Precalculus: Trigonometry and Analytic Geometry
- MATH 161 Precalculus and Elements of Calculus for Economics and the Social Sciences
- MATH 203** Calculus for Business and Social Sciences
- MATH 215** Applied Calculus I
- MATH 241** Calculus I
- MATH 251A** Accelerated Calculus I
- NREM 203 Applied Calculus for Management, Life Sciences, and Human Resources
- PHIL 110, 110A Introduction to Deductive Logic
- PHIL 111 Introduction to Inductive Logic

* Has a prerequisite.

** Requires placement by Math Department’s Precalculus Assessment; visit www.math.hawaii.edu.

** Global and Multicultural Perspectives (FG): 2 courses, 6 credits**

Global and Multicultural Perspectives courses provide thematic treatments of global processes and cross-cultural interactions from a variety of perspectives. Students will gain a sense of human development from prehistory to modern times through consideration of narratives and artifacts from diverse cultures. At least one component of each of these courses will involve the indigenous cultures of Hawai‘i, the Pacific, or Asia.

**FG Courses**

To satisfy this requirement, students must take a total of six credits; the six credits must come from two different groups.

**Group A** (courses marked FGA in this Catalog and online cover the time period prehistory to 1500)

- ANTH 151, 151A Emerging Humanity
- ART 175 Survey of Global Art I
- HIST 151 World History to 1500
- HIST 161A World Cultures in Perspective
- LLEA 151 World Myth to 1500 C.E.
- OCN 105 Sustainability in a Changing World
- WS 175 History of Gender, Sex, and Sexuality in Global Perspectives to 1500 CE

**Group B** (FGB; courses cover the time period 1500 to modern times)

- AMST 150 America and the World
- ANTH 152, 152A Culture and Humanity
- ART 176, 176A Survey of Global Art II
- FSHN 141 Culture and Cuisine: The Global Diversity of Food
- GEOG 102 World Regional Geography
- HAW 100 Language in Hawai‘i: A Microcosm of Global Language Issues
- HIST 152 World History since 1500
- HIST 162A World Cultures in Perspective
2. Diversification Requirements: 19 credits

The Diversification requirements are intended to assure that every student has exposure to different domains of academic knowledge, while at the same time allowing flexibility in choice of courses for students with different goals and interests.

Students can complete the Diversification requirements over the full four years of their academic program. Students may satisfy the Diversification requirements by taking approved courses for which they meet course prerequisites. Some courses that satisfy diversification requirements may also simultaneously satisfy Focus and/or major requirements. (See the “Can a single course satisfy more than one requirement?” table on the next page.)

- **Arts, Humanities, and Literatures (DA, DH, DL): 6 credits**
  To satisfy this requirement, students must take six credits; the six credits must include two of the three different areas: Arts “DA,” Humanities “DH,” and Literatures “DL.”

- **Natural Sciences (DB, DP, DY): 7 credits**
  To satisfy this requirement, students must take three credits in Biological Sciences “DB,” three credits in Physical Sciences “DP,” and one credit of Science Laboratory “DY.”

- **Social Sciences (DS): 6 credits**
  To satisfy this requirement, students must take a total of six credits from two different departments.*

Diversification Courses

Diversification courses are identified in this Catalog on pp. 366-515 with the following letters after the course description:

- **DA = Arts**
- **DB = Biological Sciences**
- **DH = Humanities**
- **DL = Literatures**
- **DP = Physical Sciences**
- **DS = Social Sciences**
- **DY = Laboratory (science)**

3. Focus Requirements

The Focus requirements identify important additional skills and knowledge necessary for living and working in diverse communities. Courses fulfilling Focus requirements are offered in departments across the curriculum and vary each semester. To meet a Focus requirement, a course must have an official UH Mānoa Focus designation during the semester in which it is taken. Courses taken outside the UH System cannot be used to fulfill Focus requirements. Instead, non-UH System transfer students’ Focus requirements are adjusted according to the number of credit hours awarded by UH Mānoa for non-UH System courses. (See next page.)

- **Hawaiian, Asian, and Pacific Issues (H or HAP): 1 course, any level**
  These courses focus on issues in Hawaiian and Asian or Pacific cultures and history; they promote cross-cultural understanding between nations and cultures.

- **Contemporary Ethical Issues (E or ETH): 1 course, 300- or 400-level**
  These courses involve significant readings on, and discussion of, contemporary ethical issues; they give students tools for the development of responsible ethical judgments.

- **Oral Communication (O or OC): 1 course, 300- or 400-level**
  These courses provide students with training in oral delivery and give them the opportunity to do individual and/or group oral reports.

- **Writing Intensive (W or WI): 5 courses, including at least two at the 300- or 400-level**
  These courses collectively help students both to learn course content and to communicate through writing. Small writing-intensive classes, in which instructors work with students on writing related to course topics, are offered in nearly all departments.

**Note:** Students are strongly encouraged to satisfy the Foundations-Written Communication (FW) requirement before they enroll in writing-intensive courses.

Focus Courses

Focus courses change each semester. Therefore, Focus designations are not shown in this Catalog, but appear each semes-

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*Some departments have multiple course alphas. Students who take their two DS courses from the same department but with different course alphas are considered to have fulfilled the DS requirement. For example, the Family and Consumer Sciences Department offers two course alphas: Family Resources (FAMR) and Fashion Design and Merchandising (FDM). A student who takes FAMR 230 and FDM 200 is considered to have fulfilled the DS requirement.
ter on Class Availability at www.sis.hawaii.edu/uhdad/avail. classes?i=MAN. Focus designations are indicated in the GenEd/ Focus column as ETH, HAP, OC, and/or WI.

Focus Requirements for Students with Non-UH System Credits

Students who transfer credits from a non-UH System institution may have adjusted (“prorated”) Focus requirements. The adjustment is based on the number of non-UH System transfer credit hours accepted when a student is admitted to UH Mānoa.

Therefore, non-UH System credits completed while an active UH Mānoa student are not included in proration (summer courses, Study Abroad, National Student Exchange, etc.).

Focus Requirement

Number of accepted non-UH credit hours: W H E O
0-36 5* 1 1 1
37-54 4* 1 1 1
55-88 3* 1 1-E or 1-O
89+ 2* 1 0 0

*At least two “W” courses must be numbered at the 300- or 400- level.

Focus Requirements for UH System Transfer Students

Students who enter the UH System in Fall 2011 and thereafter must meet all of the Focus requirements. Students who entered the UH System from Spring 2005 through Spring 2011 must meet requirements given in the following table. Students who entered UH prior to Spring 2005 should check with a UH Mānoa college/school advisor to determine their Focus requirements. Depending on the number of UH transfer credit hours accepted, E and O requirements for transfer students may be reduced. The W and H requirements are not affected, since students may transfer approved UH System courses to help them satisfy the W and H Focus requirements.

Focus Requirement

Number of accepted UH credit hours: W H E O
0-54 5* 1 1 1
55-88 5* 1 1-E or 1-O
89+ 5* 1 0 0

*At least two “W” courses must be at the 300- or 400- level.

Exemption from a Focus Requirement

Students who have engaged in one or more extraordinary educational experiences that took place outside of the ordinary university curriculum may request exemption from up to three Focus requirements that are directly related to the educational experience(s). To earn exemption, students must demonstrate to the General Education Committee that the experience(s) fulfilled the goals of the requested Focus area(s). Approved exemptions reduce the number of courses required for the approved Focus area(s); however, they do not reduce the total number of credit hours needed to graduate. Students are limited to three exemptions. Restrictions apply. For more information, consult a college/school academic advisor or visit www.hawaii.edu/gened/focus_exemption.htm.

4. Hawaiian or Second Language Requirement

Knowledge of a second language encourages deeper awareness of the structure of language and its relation to thought. It develops sensitivity to other ways of ordering personal experience and social institutions, provides a direct way of comparing another culture to one’s own, and provides insight into the workings of one’s native language.

Before graduation, students must show competence at the 202 (or equivalent) level in Hawaiian or a second language by doing one of the following:

a. Completing a four-semester sequence (usually 101, 102, 201, and 202) in a single language.

b. Demonstrating competence by taking a UH Mānoa language-competency exam if one is offered. Check with the language department in question.

c. Receiving a language-requirement waiver by demonstrating 202-level second language competency. For example, waivers may be given to students who are native speakers of a language other than English. Contact an academic advisor in your college for further information.

Important Note: The Hawaiian or Second Language requirement has been modified or waived for students in the following schools and colleges: Shidler College of Business; College of Education; College of Engineering; John A. Burns School of Medicine; School of Nursing and Dental Hygiene; School of Ocean and Earth Science and Technology; Myron B. Thompson School of Social Work; College of Tropical Ag-
Agriculture and Human Resources. (See www.hawaii.edu/gened/hsl.htm for additional information.) Students in these colleges/schools should consult a college/school advisor.

Students should be aware that changing their major may involve a change in their college/school and thus a change in their Hawaiian or Second Language requirement. A list of majors and their respective colleges/schools can be found on pp. 74-78.

Credits for Previous Language Experience

All students under the current General Education requirements with experience in a language other than English (including native speakers) may earn “back credits.” These students may take any UH Mānoa course appropriate to their level of proficiency in which there is significant use of that language. (Appropriate level is determined by a placement exam or an advisor; significant use is determined by the course content.) Upon completion of this course, students will receive between 3 and 16 back credits if they earn a letter grade of C (not C-) or better. (The course must be the first Hawaiian or second language course taken since high school; and it must be taken for a letter grade, not CR/NC.) Back credits may be earned for only one language. Other restrictions apply. Check with the appropriate language department for details and forms. Information is also available at www.hawaii.edu/gened/hsl.htm.

Languages in which a Four-semester Sequence is Offered

Arabic, Cambodian (Khmer), Chamorro, Chinese (Mandarin), Filipino, French, German, Greek, Hawaiian, Hindi/Urdu, Ilokano, Indonesian, Italian, Japanese, Korean, Latin, Maori, Portuguese, Russian, Samoan, Sanskrit, Spanish, Tahitian, Thai, Tongan, Vietnamese.

Some language courses are not offered regularly, and this is noted in the course description section of this Catalog. American Sign Language also fulfills the language requirement. Courses in American Sign Language are not offered at UH Mānoa, but the campus will consider students who complete American Sign Language to the second level of study as having met UH Mānoa’s Hawaiian or Second Language requirement.

Academic Planning: Tips for New Students

UH Mānoa has a wide range of fields, majors, and courses from which to choose and build a dynamic and satisfying academic program. Here are some tips to help students get started:

■ Contact an advisor. Assistance in planning an academic program is available. Resources include:
  –New Student Orientation and Fall Extended Orientation workshops, (808) 956-3667, www.hawaii.edu/nso;
  –College/school and major advisors. (See contact information at the end of this section.)

■ Explore different academic areas. Most freshmen are exploring possible majors during their first year. These students may select General Education Foundations and Diversification courses that allow them to sample different fields, which can help in deciding on a major. See pp. 26-27 for a list of Foundations courses; see the “Courses” section of this Catalog to find courses with a Diversification designation. The “Courses” section also lists course prerequisites.

■ Plan ahead. Majors and colleges/schools may have requirements that should be met in the first year. Once students decide on a major, they should find out what particular courses are required for the major and also by the college/school in which the major is located. (Program requirements and four-year academic plans for all undergraduate majors can be found at manoa.hawaii.edu/ovca/programsheets.) Students who have not yet decided on a major should become familiar with potential majors and with their college/school requirements in order to take recommended courses when possible.

■ Enhance educational experience through special opportunities. Consider participating in one of the following:
  –First-Year Programs, (808) 956-8626, manoa.hawaii.edu/undergrad/freshman/
  –Honors Program, (808) 956-8391, manoa.hawaii.edu/undergrad/honors/
  –Student Life and Development, (808) 956-8178, manoa.hawaii.edu/studentlife/
  –A research project or internship (see major department);
  –Service Learning, (808) 956-4641, manoa.hawaii.edu/undergrad/servicelearn/
  –National Student Exchange, (808) 956-6772, www2.hawaii.edu/~nse/

Transfer Students

Transfer students should contact an advisor as soon as possible. An advisor can often help a transfer student make choices that will help the student make steady progress toward graduation. Students with a major should contact an advisor from the college or school in which the major is located; students who have not yet chosen a major should contact the Mānoa Advising Center. (See list of advising offices on the next page.)

Many requirements, including General Education Foundations, Diversification, and Hawaiian or Second Language requirements, may be met by transferring articulated courses from other campuses. Students can check the Office of the Registrar website: manoa.hawaii.edu/admissions/undergrad/transfer.html for more information.

Important: Transfer students should consult the UH Mānoa college/school advising office for their major to find out about their major’s requirements and about recommended General Education course choices.
## Undergraduate Advising Offices

<table>
<thead>
<tr>
<th>College/School and Website</th>
<th>Location</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>School of Architecture, <a href="http://www.arch.hawaii.edu">www.arch.hawaii.edu</a></td>
<td>Architecture 202</td>
<td>(808) 956-7225</td>
</tr>
<tr>
<td>Colleges of Arts and Sciences (declared majors), <a href="http://www.advising.hawaii.edu/artsci/">www.advising.hawaii.edu/artsci/</a></td>
<td>QLCSS 113</td>
<td>(808) 956-8755</td>
</tr>
<tr>
<td>College of Social Sciences, <a href="http://www.advising.hawaii.edu/artsci/">www.advising.hawaii.edu/artsci/</a></td>
<td>Dean Hall, Room 2</td>
<td>(808) 956-0661</td>
</tr>
<tr>
<td>Shidler College of Business, <a href="http://www.shidler.hawaii.edu/undergraduate/advising">www.shidler.hawaii.edu/undergraduate/advising</a></td>
<td>Business Administration B101</td>
<td>(808) 956-8215</td>
</tr>
<tr>
<td>College of Education, coe.hawaii.edu/admissions-advising/advising-osas</td>
<td>Everly Hall 126</td>
<td>(808) 956-7849</td>
</tr>
<tr>
<td>College of Engineering, <a href="http://www.eng.hawaii.edu/current-students/undergraduate-students/advisement-academic-services/">www.eng.hawaii.edu/current-students/undergraduate-students/advisement-academic-services/</a></td>
<td>Holmes 250</td>
<td>(808) 956-8404</td>
</tr>
<tr>
<td>Hawai‘i‘u‘iakea School of Hawaiian Knowledge, manoahawaii.edu/nhss/</td>
<td>KAMA 211</td>
<td>(808) 956-0642</td>
</tr>
<tr>
<td>Hawaiian Studies</td>
<td>Spalding 253</td>
<td>(808) 956-7637</td>
</tr>
<tr>
<td>Kawaihuelani Center for Hawaiian Language</td>
<td>Sinclair Library 128</td>
<td>(808) 956-8391</td>
</tr>
<tr>
<td>Honors, manoahawaii.edu/undergrad/honors/</td>
<td>Sinclair Library 128</td>
<td>(808) 956-0756</td>
</tr>
<tr>
<td>RAPS Advising Office, <a href="http://www.hawaii.edu/raps">www.hawaii.edu/raps</a></td>
<td>QLCSS 101</td>
<td>(808) 956-7273</td>
</tr>
<tr>
<td>Mānoa Advising Center (general Arts &amp; Sciences students and pre-majors), manoahawaii.edu/undergrad/mac/</td>
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<tr>
<td>John A. Burns School of Medicine</td>
<td>Biomed C206</td>
<td>(808) 956-8557</td>
</tr>
<tr>
<td>Medical Technology, <a href="http://www.hawaii.edu/medtech/Medtech.html">www.hawaii.edu/medtech/Medtech.html</a></td>
<td>Biomed D204</td>
<td>(808) 956-8267</td>
</tr>
<tr>
<td>Public Health, <a href="http://www.manoa.hawaii.edu/publichealth/admissions/">www.manoa.hawaii.edu/publichealth/admissions/</a></td>
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<tr>
<td>School of Nursing and Dental Hygiene, <a href="http://www.nursing.hawaii.edu/ossdirectory">www.nursing.hawaii.edu/ossdirectory</a></td>
<td>Hemenway 200B</td>
<td>(808) 956-8821</td>
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<tr>
<td>Dental Hygiene</td>
<td>Webster 201</td>
<td>(808) 956-8939</td>
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<td>Nursing</td>
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<td>Outreach College, <a href="http://www.outreach.hawaii.edu/">www.outreach.hawaii.edu/</a></td>
<td>Sinclair Library 301</td>
<td>(808) 956-7221</td>
</tr>
<tr>
<td>School of Pacific and Asian Studies, manoahawaii.edu/spas/</td>
<td>Moore 407</td>
<td>(808) 956-7814</td>
</tr>
<tr>
<td>Pre-Health/Pre-Law Advising Center, <a href="http://www.manoa.hawaii.edu/undergrad/PAC/">www.manoa.hawaii.edu/undergrad/PAC/</a></td>
<td>Sinclair Library 108</td>
<td>(808) 956-8646</td>
</tr>
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<td>Student-Athlete Academics Services, manoahawaii.edu/undergrad/SAAS/</td>
<td>Nagatani Academic Center</td>
<td>(808) 956-3388</td>
</tr>
<tr>
<td>Student Support Services, manoahawaii.edu/undergrad/sss/</td>
<td>Krauss 114</td>
<td>(808) 956-8402</td>
</tr>
<tr>
<td>School of Travel Industry Management, <a href="http://www.tim.hawaii.edu">www.tim.hawaii.edu</a></td>
<td>George 346</td>
<td>(808) 956-8946</td>
</tr>
<tr>
<td>College of Tropical Agriculture &amp; Human Resources, <a href="http://www.ctahr.hawaii.edu/site/undergrad.aspx">www.ctahr.hawaii.edu/site/undergrad.aspx</a></td>
<td>Gilmore 210</td>
<td>(808) 956-6733</td>
</tr>
</tbody>
</table>
Office of Graduate Education (OGE)  
(formerly Graduate Division)  
Dean  
Spalding 360  
2540 Maile Way  
Honolulu, HI 96822  
Tel: (808) 956-7541  

Associate Dean  
Spalding 359  
2540 Maile Way  
Honolulu, HI 96822  
Tel: (808) 956-8950  

Graduate Education  
Graduate Council  
Graduate Assembly  
Chairs of the Graduate Programs  
Graduate Student Organization  
WICHE Regional Graduate Programs  

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Certificate Programs  
Master’s Degree Programs  
Requirements and Procedures for Master’s Degrees  
Thesis (Plan A)  
Plan B  
Examinations (Plan C)  
Doctor of Philosophy Programs  
Requirements and Procedures for Doctoral Degrees  
Examinations  

Graduate Student Services  
Spalding 353B  
2540 Maile Way  
Honolulu, HI 96822  
Tel: (808) 956-8544  
(808) 956-8500  
(808) 956-4257 (Voice/Text)  
Fax: (808) 956-4261  
Email: General Inquiries: graduate.education@hawaii.edu  
Current Student Inquiries: graduate.education@hawaii.edu  
Web: manoahawaii.edu/graduate  

Graduate Council  
Members of the Graduate Council are appointed by the Faculty Senate. The council advises the dean on graduate courses, programs, and administrative matters.  

Graduate Assembly  
The Graduate Assembly is composed of the chairs of each graduate program. It functions as an advisory board to the dean on major policy matters and serves as a forum for discussion on matters pertaining to graduate study.  

Chairs of the Graduate Programs  
The chairs of the graduate programs are appointed by the dean of Graduate Education. The chairs in turn recommend faculty advisors or committees for graduate students working toward advanced degrees. If the dean of Graduate Education concurs, he/she appoints the persons recommended by the chairs.  

The chairs of the graduate programs serve as the liaison with Graduate Education in matters of policy, procedural changes, program effectiveness, and general graduate student affairs. They advise on the admission of graduate students, advise graduate students on their degree programs, review graduate student petitions, keep records on their graduate students, and certify that degree candidates have completed all requirements.  

Graduate Student Organization  
See the “Student Life” section for information on this organization.  

WICHE Regional Graduate Programs  
See the “Tuition, Fees, and Financial Aid” section for information on these programs.
**Academic Policies**

The following regulations and procedures governing admission to Graduate Education at UH Mānoa are subject to change without prior notice. Prospective students should consult with the website for updated policies.

Although UH Mānoa attempts to accommodate the course requests of students, course offerings may be limited by financial, space, and staffing considerations or may otherwise be unavailable. Nothing in this Catalog may be construed to promise or guarantee registration in any course or course of study (whether required or elective), nor may anything be construed to promise or guarantee the completion of an academic program within a specified length of time.

**Student Responsibility**

It is the responsibility of students to know and observe all regulations and procedures relating to the program they are pursuing, as well as those of UH Mānoa and the Office of Graduate Education. In no case will a regulation be waived or an exception granted because students plead ignorance of or contend that they were not informed of the regulations or procedures. Questions on regulations and their interpretation pertaining to studies at the graduate level should be addressed to the Dean, Office of Graduate Education.

Students planning to graduate should familiarize themselves with the dates relating to application for graduation and other pertinent deadlines (see the “Calendar”). It is necessary to apply for graduation by the specified deadline in order to graduate in a particular term, whether or not the student plans to attend the commencement ceremonies.

Students must satisfy the degree requirements of the Catalog in force during the term for which they were admitted; or they may, with the consent of their advisors, meet graduation requirements by complying with the provisions of a later Catalog. Students readmitted to a degree program must meet degree requirements of the Catalog in force at the time of the later admission (or of a subsequent Catalog, as provided above). Aside from degree requirements, all students are subject to the regulations and policies stated in the Catalog currently in force. Exceptions to the regulations contained in the Catalog require the written approval of Graduate Education, unless otherwise stated in the Catalog.

Students admitted to Graduate Education are assumed to be mature adults and are expected to behave accordingly. All written work should observe high editorial standards, and high standards of academic honesty are expected. Though advisory services are provided to assist the student, the student alone is responsible for following the procedures and completing the steps required in the degree program. Requirements of Graduate Education, both procedural and substantive, may be waived only by written request of the student and/or committee concerned and must have written approval of Graduate Education. Petition forms are available in department offices, the Graduate Education Student Services Office, and online at manoa.hawaii.edu/graduate/.

**Academic Integrity**

UH Mānoa has adopted policies and procedures for dealing with academic (and research) misconduct by its students, faculty, and staff. The guidelines, which are available in department offices and in the Office of the Dean of Graduate Education, pertain to the intentional commission of any academic misconduct, including falsification of research results, improper assignment of authorship, plagiarism, deceptive manipulation of experiments or of research procedures, and misappropriation of research funds.

If a graduate student fails to maintain the standards of academic or professional integrity expected in his or her discipline or program, the student’s admission to the program may be terminated. (See “Campus Policies” for further discussion of policy pertaining to academic honesty.)

**Research with Human or Animal Subjects**

Students intending to conduct research using human or animal subjects should be aware of federal, state, and UH Mānoa regulations and review processes to ensure compliance with protective standards. These regulations cover research funded by non-UH Mānoa sources, sponsored by UH Mānoa, or conducted by or under the direction of any employee or agent of UH Mānoa in connection with his or her institutional responsibilities or using any UH Mānoa property or facility. These regulations also cover research involving the use of UH Mānoa’s non-public information to identify or contact research subjects.

Students and UH Mānoa employees should refer to the “Campus Policies” section for more information on federal research guidelines and check with their respective graduate chairperson for guidance.

**Admission**

Applicants for advanced degree programs must hold a bachelor’s degree from a regionally accredited U.S. college or university or its equivalent from a recognized foreign institution of higher learning. The standards of the degree in question must be equivalent in both the distribution of academic subject matter and in scholarship achievement requirements to those maintained at UH Mānoa.

All applicants should have outstanding academic records. The evaluation is based on the applicant’s academic record, as well as test scores, the statement of objectives, and where appropriate, professional experience. Applicants may submit unofficial copies of transcripts and test scores while applying for admissions. However, admitted students are required to submit official transcripts and test scores in order to enroll at UH Mānoa.

Completed applications are screened by the Graduate Student Services Office. Applications that meet the requirements of Graduate Education are forwarded to the respective graduate program, where the standards applied may be more stringent than those set by Graduate Education. There the applications are subjected to a more comprehensive and intensive review by the graduate faculty. Where admission is intensely competitive, admission decisions are reached through a comparison of the relative merits of all applicants applying in the program or in an area of concentration, if applicable, for that particular semester. The graduate program then makes a recommendation to Graduate Education either to admit or deny the applicant. The final decision to make a formal offer of admission rests with Graduate Education, which takes into full consideration the recommendation of the graduate program. Admission is valid only for the semester in which the student was accepted.

Applicants may be denied admission for any number of reasons. Some of the more common bases of denial are undistinguished academic records and poor test scores, inadequate
preparation and background for advanced academic or professional study, unclear or unfocused objectives for graduate study, or inability of the program to accommodate all qualified applicants due to limited space or lack of faculty to guide the students in specified areas of interest. It is suggested that applicants consult the chair of the selected program concerning their interests and availability of faculty members in their intended areas of study.

Graduate Student Services Office notifies each applicant of the decision. Official notification of acceptance or rejection is generally mailed between February and June for fall admission, depending on when the completed application is received and when a decision is reached. Most of the notifications are mailed in April and May. For spring, notification is generally between October and December. In programs with intense competition, selections are often made early. Applicants should not make definite arrangements to attend UH Mānoa until they receive formal notice of acceptance from Graduate Education.

All applicants are required to specify on the application form all current and previous enrollment in any postsecondary institution. Any applicant who fails to inform UH Mānoa of such enrollment or who submits or has submitted any required information or document that is fraudulent or that has been altered without proper authorization may be denied admission to UH Mānoa. If the omissions and/or alterations are discovered after the student is enrolled, enrollment may be canceled and the student may be referred to UH Mānoa’s Student Conduct Committee for possible disciplinary action.

**Application Procedures and Deadlines**

You may apply for graduate admission by downloading an application form or by electronic application from the website listed below. Specific program information should be obtained directly from the appropriate graduate program. For a listing of graduate programs contact information, visit the website: manoa.hawaii.edu/graduate/. Communication should be addressed to the graduate chair of the appropriate graduate program.

For further information on general graduate admissions, write or email the Graduate Student Services Office at graduate.education@hawaii.edu. Business, medicine, and law are not part of the Office of Graduate Education. Applicants should apply directly to the Shidler College of Business, John A. Burns School of Medicine (see the “John A. Burns School of Medicine” section) or to the William S. Richardson School of Law (see the “William S. Richardson School of Law” section).

**Application Requirements**

Students applying for admission to graduate programs must submit the following:

**To Graduate Education**

1. On-line application form and application fee—no fee waivers;
2. One official transcript from each postsecondary institution attended, sent directly from the institution to Graduate Student Services or received in a sealed institutional envelope. Transcripts are NOT required for course work completed at any of the UH campuses. The Graduate Student Services Office will obtain UH transcripts on behalf of applicants;
3. Official Test of English as a Foreign Language (TOEFL) or IELTS Academic Modules Test score report, if required (for international applicants, as well as some immigrant and U.S. applicants); and
4. Verification of financial status (for international applicants).

If more than 25 percent of a student’s undergraduate course work at a U.S. institution has been graded under a nontraditional grading system (i.e., pass/fail, credit/no credit, satisfactory/unsatisfactory, etc.), then:

1. Transcripts must be accompanied by official course performance reports, i.e., faculty evaluations (one copy each of transcripts and performance reports);
2. Transcripts from nontraditional grading systems must include course descriptions and grade conversion information; and
3. The applicant must take the Graduate Record Examination (GRE) General Test and have the results forwarded to Graduate Education. [Applicants to the Shidler College of Business and the School of Accountancy should take the Graduate Management Admission Test (GMAT) in place of the GRE. Applicants to the School of Travel Industry Management may take the GMAT instead of the GRE.]

**To the Graduate Program**

1. Letters of recommendation if required by the graduate program;
2. One official transcript from each postsecondary institution attended, sent directly to the graduate program by the institution, if required by the graduate program;
3. Standardized test scores (excluding TOEFL and IELTS) such as GRE, GMAT, if required by the graduate program;
4. Special application forms, statement of objectives and long-range goals if required by the graduate program; and
5. Samples of work (slides, manuscripts, portfolio, or tapes), résumés, and writing samples if required by the graduate program.

For details, refer to the specific graduate program brochure and application instructions. Materials submitted in support of an application are not released for other purposes and cannot be returned to the applicant. Failure to fill out the application completely according to instructions may result in delays and/or file closure.

**Application Deadlines**

Please refer to the Graduate Education Prospective Student section at manoa.hawaii.edu/graduate/ or specific graduate program brochure for specific application deadlines. Each graduate program may have different deadlines and some programs do not have spring admissions.

In many cases, admission offers include financial support, such as assistantships, scholarships, fellowships, and tuition waivers. Frequently, this support is awarded early to highly qualified applicants. Applications are processed by Graduate Student Services Office as early as September 1 for the fall semester and May 1 for the spring semester. It is recommended that a completed graduate admissions application be submitted as early as possible.

**International Applicants**

International applicants must submit official academic records in the original language accompanied by certified English translations. These translations must bear either the embossed seal or inked stamp of the issuing institution or governmental agency or the original signature of the translator, and they must be complete and exact word-for-word translations of the original documents.
The following lists the \textbf{minimum academic qualifications} expected of international applicants from the following selected countries or areas for admissions consideration. These qualifications must be completed prior to enrollment. Not all regions and countries are represented and admission eligibility is determined upon review of all required application materials.

- Australia, Canada, South Africa: Bachelor’s degree requiring at least four years of study or an honours bachelor degree.
- Baltic and East European States, former Soviet Republics: Diplom, Inženyr, Magister, Oklevél: diploma requiring four to five years of post-secondary study.
- Bangladesh, India, Myanmar, Nepal, and Pakistan: Completed master’s degree at the time of application or a four-five year bachelor’s degree such as the B. Engineering, B. Technology, or B. Agriculture.
- United Kingdom and British patterned systems: Honours bachelor degree.
- France or French patterned systems: Maîtrise or title of Ingénieur; four-five year degree.
- Germany: University Diplom, Magister Artium, or Staatsexamen. The vordiplom alone is not sufficient.
- Philippines: Bachelor’s degree from chartered higher education institutions (state universities and colleges) or CHED approved institutions and degree programs or FAAP certified level II or III accreditation status.
- Bologna-compliant three year bachelor degrees will be given consideration.

If admitted, international students must receive two clearances in order to register: (1) University Health Services clearance documenting adherence with health regulations; and (2) International Student Services (ISS) clearance documenting adherence to international student regulations and proof of adequate health insurance. \textbf{Note}: International applicants with a non-immigrant visa status other than student status should contact the ISS. Federal restrictions on full-time study may apply.

\section*{Concurrent Pursuit of Multiple Graduate Programs}

Current UH Mānoa graduate students who wish to pursue an additional graduate degree concurrently are required to obtain advance approval from their program chair and the Graduate Dean. Upon approval, students may apply for admission to an additional program after completing one semester of study in their initial program.

Students must submit the Petition to Apply for Concurrent Degree to their current program chair for approval prior to applying for an additional graduate program. It is recommended that the petition be submitted at least two weeks prior to the program’s admission deadline. The petition is located on the Graduate Education website at manoa.hawaii.edu/graduate/.

Upon approval from the graduate chair, the student submits the approved petition, a new graduate admissions application, and the application fee to the Graduate Student Services Office. Approval of this petition only grants permission to apply and does not imply admission.

Approval is not required to apply to official dual degrees or to graduate certificate programs. Concurrent doctorates are not permitted and multiple doctoral degrees are generally not permitted. If approved, each degree must be distinct, and representing a unique body of knowledge. Each dissertation must be distinct and not incorporate parts of a previous dissertation.

\section*{Concurrent Graduate Certificates}

Current UH Mānoa graduate students who wish to pursue an additional graduate certificate concurrently are required to apply directly to the Graduate Student Services Office. The Concurrent Graduate Certificate Program application can be downloaded from the Graduate Education website at manoa.hawaii.edu/graduate/. The application and application fee must be submitted to the Graduate Student Services Office, 2540 Maile Way, Spalding 353B, Honolulu, HI 96822.

\section*{English Language Institute}

International and immigrant students admitted to UH Mānoa whose native language is not English may be referred to the English Language Institute to determine if they must take the ELI placement examinations. If a student does not fulfill this obligation, ELI will place a hold on the student’s registration. Please refer to the “English as a Second Language” section within the Colleges of Arts and Sciences for additional information.

\section*{Standardized Examinations}

Standardized test application forms are available at the Counseling and Student Development Center, (808) 956-3454. Out-of-state students and applicants from international countries should write to the address designated for each examination (see pertinent section).

Individuals with visual, physical, hearing, or learning disabilities who are required to take either the GRE or GMAT should contact the Educational Testing Service for information regarding special arrangements to take these examinations.

\section*{Graduate Record Examination}

The GRE and subtests may be required by some graduate programs and recommended by others. For the requirements of the individual graduate programs, consult the relevant graduate program descriptions in this \textit{Catalog}. The GRE General Test (Package 1) is also required by the Office of Graduate Education for students who have completed 25 percent or more of their undergraduate work at a U.S. institution under a nontraditional grading system. Test information is available through the Counseling and Student Development Center, (808) 956-3454. Applicants may request test registration forms directly from Graduate Record Examinations, Educational Testing Service (ETS), Box 6000, Princeton, NJ 08541-6000, web: www.ets.org/gre/. Submit completed registration forms and test fees to ETS at least one month before the examination date.

\section*{Evidence of English Language Proficiency}

Applicants whose native language is not English must submit official Test of English as a Foreign Language (TOEFL) scores or International English Language Testing System (IELTS) Academic Modules test results. The TOEFL score report and IELTS test results must be from a test taken within the last 2 years. A minimum TOEFL score of 500/61 (paper/internet) or IELTS overall band test result of 6.00 is required. Many programs require higher scores. The minimum score for teaching assistantship applicants is 600/100 for TOEFL and 7.00 for the IELTS.

Applicants who have completed a bachelor’s or advanced degree program within the last five years at a regionally accredited/recognized institution in the U.S., Australia, Canada, Ireland, New Zealand, Singapore, or United Kingdom need not submit English language proficiency test scores.
Final admission requires submission of the official TOEFL/IELTS results. Applicants should, therefore, obtain the TOEFL Bulletin of Information early to check on the availability of the test and should take the test in time to meet graduate admissions application deadlines.

The TOEFL is administered at centers throughout the world. Applicants who wish to take the TOEFL outside the U.S. should obtain the TOEFL Bulletin of Information for Candidates, International Edition. This bulletin is generally available at U.S. embassies and consulates and at binational educational commissions and consulates abroad. Applicants may also order a bulletin directly from the representative who serves the area or country in which they plan to take the test. For complete information about the TOEFL, visit www.ets.org/toefl/.

International English Language Testing System (IELTS)

Applicants should contact the nearest British Council/Embassy/Consulate or IDP Education Australia Office in their country for the nearest testing center. It is advised that you also check the IELTS website for the most up-to-date information for testing centers. Web: www.ielts.org/

Additional Requirements and Information

Reapplication

 Newly accepted students who do not register in the program during the semester for which they are admitted or who withdraw from all courses within the designated withdrawal period (see the “Calendar” for designated withdrawal dates) are considered no-shows and their admission status is rendered invalid. A new application is required for readmission consideration.

Change in Graduate Program

Applicants for a change in program are considered in competition with all other applicants to the new field. East-West Center students must consult their program officer before initiating any changes in graduate programs. The applicant must submit a Graduate Admissions application along with all documentation required by the new program (letters of recommendation, transcripts, test scores, etc.) to the Graduate Student Services Office within the standard admission deadlines for the graduate program. [If a change is granted, it becomes effective in the following semester contingent upon receipt of the Statement of Intention to Register (SIR) form.]

Students who are admitted to a new program are considered to be withdrawing from their current program. A student may return to the current graduate program only by petition to, and approval of, the graduate program and Graduate Education.

Readmission

 Classified graduate students who wish to re-enroll after a lapse in enrollment of one or more semesters must apply for readmission. The readmission application form is found at manoa.hawaii.edu/graduate/. The following documents must be submitted to the Graduate Student Services Office by the established deadlines:
1. Application form;
2. Application fee;
3. Confidential Financial Statement for International Applicants (if applicable);
4. Transcripts reflecting any studies since last admission to the UH Mānoa Office of Graduate Education; and
5. Any other material requested by the graduate program (e.g., current test scores).

Students who are readmitted will be subject to the degree requirements in effect at the time of readmission.

Document Retention

Applications and supporting documents in the following categories are retained by the Graduate Student Services Office for limited periods as indicated:

- Incomplete applications—two years.
- Applications with no action taken by graduate program; denials (those denied admission); no-shows (those not enrolled in the semester of admission); transcripts and test scores (TOEFL scores, master file of GRE scores)—two years.
- Academic records of graduated students—five years.
- Academic records of inactive students—seven years.

Classification of Students

Only students who have been admitted to an advanced degree, certificate program, or special non-degree program by Graduate Education are designated as classified (regular or special non-degree) graduate students.

Regular Graduate Student

An applicant will be eligible for admission as a “regular” classified graduate student if he or she has the following:
1. A GPA of 3.0 or better in the last four semesters or approximately 60 semester credits (or the equivalent in quarter credits) of work as an undergraduate;
2. A master’s degree with a GPA of 3.0 or better; or
3. A GPA of 3.0 or better in at least 12 credit hours of relevant upper division and/or graduate-level post-baccalaureate work.

Students who have taken courses after receiving a bachelor’s degree and whose GPA for 12 or more credit hours of upper division and/or graduate-level post-baccalaureate work is below 3.0 are not generally admissible even if they meet the minimum GPA requirements in category 1. International students with a GPA of less than a B average in their undergraduate work and/or less than a B average in 12 credit hours of post-baccalaureate work are generally not admissible.

Students whose bachelor’s and/or master’s degrees were incomplete at the time they filed applications for admission are “conditionally admitted” graduate students. They must submit an official transcript certifying completion of their degree to the Graduate Student Services Office. This must be submitted within 60 days after the award of the degree. Registration will be denied for the following semester to those who fail to meet this requirement.

Special Non-degree Graduate Students

Special non-degree graduate students are admitted by Graduate Education as classified graduate students for a specified program of study, research, or training without degree objectives for a limited period of time (usually one year) under the sponsorship of an educational institution or government agency.

Post-Baccalaureate Unclassified Students

Individuals who wish to take UH Mānoa courses as a post-baccalaureate unclassified (PBU) student, must apply to the Graduate Student Services Office, University of Hawai‘i at Mānoa, 2540 Maile Way, Spalding Hall 353B, Honolulu, HI 96822. (International applicants on an F-1 Student VISA are not eligible to apply.)
Students must submit an online application, application fee, and an official transcript verifying degree conferral of a bachelor’s degree or advanced degree, from a regionally accredited U.S. college or university or its equivalent from a recognized foreign institution of higher learning. Applicants who received their bachelor’s degree from a foreign institution are also required to submit official Test of English as a Foreign Language (TOEFL) scores or International English Language Testing System (IELTS) Academic Modules test results.

Applicants may download the PBU application from the Graduate Education website at manoa.hawaii.edu/graduate/ or complete the graduate online application and select Post-Baccalaureate Unclassified as their intended program. Admission as an unclassified post-baccalaureate student does not constitute admissions as a classified student, nor does it guarantee future admissions as a classified student to a degree program. PBU students may not be eligible for certain benefits and services such as Veterans Affairs benefits, social security benefits, some types of federal financial aid, etc. PBU students are subject to graduate tuition rates. PBU students will need approval to take 600-800 level courses at UH Mānoa.

**Summer Session**

Students who take course work at the graduate level in a summer session but who have not been admitted to an advanced degree program at UH Mānoa register as post-baccalaureate unclassified students. However, appropriate but limited credit hours earned from summer session courses while in unclassified status prior to admission to Graduate Education are countable toward an advanced degree at the recommendation of the graduate programs involved. See “Post-Baccalaureate Unclassified Students” above.

Application for admission to a summer session should be made to Outreach College, University of Hawai‘i at Mānoa, 2440 Campus Road, Box 447, Honolulu, HI 96822. Admission to a summer session does not imply or guarantee eventual admission to Graduate Education.

**Registration**

**Regular Registration**

Registration dates and instructions are given in the online Registration Guide at www.hawaii.edu/myuh/manoa/, which is available a few weeks before registration each semester. The listing of course offerings with up-to-date class location and meeting times is found at the Check Class Availability website: www.sis.hawaii.edu/uhdad/avail.classes?i=MAN.

**Late Registration**

Students may register for credit hours through the last day of registration. There is a fee for late registration.

The late registration period is also the final time for classified graduate students to register to audit graduate courses, in accordance with the procedures outlined under “Course Auditing.”

**Course Auditing**

Classified graduate students may audit courses with the consent of the instructor. An audit approval form, available in the graduate program department office, must be completed and presented for registration. Audit courses are entered on student transcripts with a grade of L and are included in the tuition calculation. Audit courses may not be used for purposes of determining full-time or part-time enrollment status or graduate assistantship eligibility.

**Course Changes**

Refer to the Registration Guide for complete information regarding procedures for course changes.

**Withdrawal from Courses**

Refer to the Registration Guide for complete information regarding procedures for withdrawal from courses.

**Complete Withdrawal**

To withdraw from all courses prior to the beginning of classes, students should consult with the department and follow directions in the Registration Guide.

Continuing students who withdraw from all courses after classes begin must obtain a Complete Withdrawal Form from the Graduate Student Services Office, obtain the necessary signatures as indicated on the form, and turn in the completed form to the UH Mānoa Cashier’s Office, Queen Lili‘uokalani Center for Student Services 105. A semester in which a cancellation or withdrawal is made is considered a semester of nonattendance. Thus, students must petition for readmission or file a renewal application, whichever is appropriate, to return to their studies in the same program. Petitions for readmission and renewal applications are considered along with all new applications for that semester. Students who are readmitted will be subject to the degree requirements in effect at the time of readmission.

Newly admitted students who cancel or withdraw from all courses before the drop period ends (see the Registration Guide for the date) are considered “no shows,” and their admission status becomes invalid. To return, they must reapply for admission. Newly admitted students who withdraw after the drop period (see the Registration Guide for the date) must complete a Petition for Readmission form if they wish to return the following semester. Petitions for readmission are considered along with all new applications for admission for that semester. Students who are readmitted will be subject to the degree requirements in effect at the time of readmission.

**Automatic Withdrawal**

Faculty will verify attendance of students registered in their courses by the end of the first week of each semester. Students who fail to attend class (“no show”) will be dropped from that class and will have their financial aid recalculated accordingly.
Retroactive Withdrawals

Retroactive withdrawals are partial or complete course withdrawals processed after the semester has ended. UH Mānoa is obligated to ensure the integrity of the transcript as an historical document, which must reflect the actual history of a student’s experience at UH Mānoa. Because of this, the student who is requesting a retroactive withdrawal will need to present a convincing case and provide relevant documentation that supports the existence of circumstances beyond their control that prevented them from initiating the withdrawal request in a timely manner. Any request after two years of the course ending will not be reviewed. Should a retroactive withdrawal be approved, the action will result in the grade being changed to a W. Tuition refunds will not be considered and any academic action applied for that semester will remain on the student’s record. Students who were financial aid recipients during the semester in which they are seeking a withdrawal should check with Financial Aid Services to determine if this will result in a financial obligation or will result in future ineligibility for financial aid.

Failure to Withdraw

If students cease to attend classes without officially withdrawing, they will receive final grades at the instructors’ discretion. If the instructor does not award a grade, an F or NC will be assigned.

Denial of Registration

Graduate Education will deny further registration to any student whose course work is below the required level or who is not making satisfactory academic progress.

Enrollment Requirements

Continuing Enrollment

After admission, students must be enrolled at UH Mānoa every fall and spring semester for at least course work, thesis, dissertation, or research credit. Students graduating in summer must be enrolled in at least one session. Students who are neither enrolled nor on approved leaves of absence will be regarded as withdrawn from their degree programs. They will be required to apply for readmission in accordance with established regulations if they wish to resume their studies.

Leave of Absence

A leave of absence for a period of time no longer than one calendar year may be granted to currently enrolled students in good standing (minimum GPA of 3.0) after (1) completion of at least one semester of course work relevant to the degree as a classified graduate student, and (2) upon recommendation of the chair of the graduate program and approval by Graduate Education. The date of return from a leave must be set at the time the leave is requested. Forms are available on the website.

Students must withdraw from courses if requesting a leave of absence. Students not returning from leave on time will be required to petition for readmission to UH Mānoa in accordance with the established regulations. Students who are readmitted will be subject to the degree requirements in effect at the time of readmission.

Students on approved leave do not pay tuition or fees. No leave should be requested if the student will be using UH Mānoa facilities or faculty or staff services. Time on approved leave is not counted against the seven-year limit for completion of degree programs.

Students on probation are not granted an approved leave of absence.

Credit Hours

Course Loads

Sixteen credit hours in a semester and 8 credit hours in a six-week summer session are considered maximum course loads and may be exceeded only with the approval of the graduate chair and Graduate Education. The minimum full-time load for graduate students is 8 credit hours of course work. Courses taken for audit do not count toward determining full- or part-time enrollment status.

Eligible doctoral candidates may be considered as carrying a full academic load (full-time status) when enrolled for 1 credit hour of Dissertation 800.

Eligible master’s candidates may be considered as carrying a full academic load (full-time status) when enrolled for 1 credit hour of Thesis 700F after completing all required credits for the graduate degree including the program’s requirements for Thesis 700.

For graduate assistants, the full-time load is 6 credit hours of course work relevant to their degree. Audit hours do not count toward the minimum. Because their duties ordinarily require 20 hours per week, they are restricted to a maximum of 9 credit hours. However, with special permission from the graduate chair and Graduate Education, graduate assistants may register for 12 credit hours, including audits.

Variable Credit Courses

The number of credit hours obtainable in most courses is stated in this Catalog. Certain courses, designated (V) in Catalog course listings, offer variable credit. Students in these courses usually pursue individual work. The number of credit hours a student will earn in such a course must be approved by the instructor at the time of registration. Students must register for a definite number of credit hours and may earn no more or less than the stated number.

Graduate Credit for Seniors

Seniors at UH may earn credit toward an advanced degree for some courses completed during their last semester as undergraduates provided (1) the courses taken are in excess of the requirement for the bachelor’s degree, and (2) such courses fulfill requirements in the prospective graduate field. A Petition for Submission of Credit Toward an Advanced Degree for Courses Taken by an Undergraduate form is available at the Graduate Student Services Office, Spalding 353B and on the web. It must be approved by the academic advisor, the college dean, and the chair of the department in which the course is offered, and it must be filed with the Graduate Student Services Office during the registration period. The granting of such permission does not guarantee that the credit hours taken will be accepted by a graduate program as fulfilling degree requirements. Courses taken under this rule are counted in the graduate GPA at the time of graduation. Failure to complete the baccalaureate degree as scheduled nullifies any approval granted by the Office of Graduate Education.
Credit by Examination
Graduate students may obtain credit by examination in courses numbered 300-498 (excluding 399) with the approval of the chair of the graduate program, the instructor concerned, and Graduate Education, subject to general UH regulations and procedures. There is no limit on the number of examinations that a graduate student may take during any one semester. Credit may not be obtained by examination in courses numbered 600 or above.

Extension and Correspondence Course Credits
No graduate credit is allowed for extension and correspondence courses.

Undergraduate Deficiencies
Undergraduate deficiencies are courses required by a graduate program, prerequisites, or other requirements for admission that the student did not complete prior to admission. Courses in directed research/reading are not to be used to make up deficiencies.

Transfer of Credits
Credits from institutions other than UH Mānoa or taken as a post-baccalaureate unclassified (PBU) at UH Mānoa can be considered for transfer upon submission of (1) a memo approved by the chair of the graduate program, or (2) the Petition to Transfer/Substitute Credits form, which is available on the web.

Courses being considered from institutions other than UH Mānoa must be accompanied by an official transcript, transcript guide, and course syllabus if substituting for a required course.

Doctoral students may not transfer credits. Graduate certificate students may transfer six UH Mānoa PBU credits.

Policy Governing Transfer of Credits from Other Institutions
1. The request for transfer of credit hours must be made during the first semester the student is enrolled in the program.
2. Only credit hours from an accredited university are transferable.
3. Regardless of the number of credits transferred, more than half of the total number of credits used to fulfill master’s degree requirements must be earned at UH Mānoa while enrolled as a graduate student.
4. With approval from the graduate program and Graduate Education, up to 6 credit hours of work completed at another accredited institution following advancement to candidacy at UH Mānoa may be transferred, providing such transfer does not exceed the maximum allowable.
5. Credit hours used to obtain a previous degree will not be transferred.
6. No credit hours may be transferred from another institution unless the grade is B- or better. Course grades of S, CR, and P are not transferable.
7. Credit hours to be transferred must have been completed within seven years preceding the date upon which the advanced degree is to be conferred by UH Mānoa.
8. Quarter credit hours are converted to semester hours by using this formula: 2/3 times number of quarter credit hours equals number of semester credit hours (rounding off to the lower whole number). Conversion is done by the Graduate Student Services Office and is calculated for the total credit hours requested for transfer rather than for individual course credit hours.
9. Credit hours earned in international institutions must be certified by the departments as to the equivalent level of the courses being transferred (i.e., whether 300-398, 400-498, or 600-798 level).
10. The minimum residence requirement of full-time study must be upheld regardless of the number of credit hours transferred to UH Mānoa.
11. Transfer of courses to meet practicum, seminar, thesis, or dissertation requirements is not permitted.
12. Extension credits from other universities are not transferable.
13. Directed reading/directed research credits (x99) are not transferable.
14. Transfer credits are not included in GPA calculations except for the final calculations when the student graduates.

If the petition is approved, the units (or UH Mānoa equivalent) will be counted as part of the student’s degree program.

Double Counting
A student who pursues two distinct master’s degrees at UH Mānoa, either simultaneously or consecutively, may apply to have up to 6 credit hours of graduate course work accepted for credit in both degree programs under the following provisions:
1. The courses being double counted are electives in both programs;
2. Written approval of the graduate chairs of both programs (only approval by the second chair is required if the degrees are being pursued sequentially) and Graduate Education is obtained; and
3. The course work for each degree is completed within the prescribed time limits.

Dual Degree
A student in a UH Mānoa-approved “dual degree” program who fails to meet the academic requirements specified for that program will be dismissed from the dual degree program and Graduate Education.

Examinations
The schedule of final examinations is published in the Registration Guide. No examinations (other than laboratory tests and short quizzes) are allowed during the two weeks prior to the final examination period.

Grades
Student achievement is designated by: A+, A, A- (high achievement), B+, B, B- (meets expectations), C+, C, C-, (below expectations), D+, D, D- (inadequate performance), F (failure), CR (credit), NC (no credit), NG (no grade and work in progress), S (satisfactory), and I (incomplete). L is the designation given to audited courses. Grades lower than C- may not be used to fulfill requirements for advanced degrees.

The 500 course is offered as a 1-credit course, with credit awarded upon completion of the Plan B requirements. Credit for this course does not count toward meeting degree requirements or toward meeting full-time enrollment status. Students must be registered during the term in which the degree is to be awarded.

An I is given to students who fail 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. Students are expected to complete all courses. Therefore, students receiving an I should contact the instructor to determine the steps to be taken to remove the I. The deadline for removing an I received in the fall semester is the following April 1; for removing an I received in the spring semester or the summer session, the deadline is the following November 1.

Instructors who record a grade of I for undergraduate courses (100-499) must also record the grade that will replace the I if the work is not made up by the deadline; that grade is computed on the basis of what grades or other evidence the instructors have, averaged together with Fs for all incomplete work (including the final examination, if it is not taken). This alternate grade may be the appropriate letter grade, or if the course was taken under credit/no credit (CR/NC). (The designation W cannot be used as an alternate grade.)

Instructors who record a grade of I for graduate courses (600-799, excluding 700) have the option of recording an alternate grade to replace the I if the work is not made up by the deadline. This includes courses taken for letter grade or for CR/NC. If the instructor chooses to record an incomplete for a graduate course with no alternate grade, the instructor may (1) allow the grade of I to remain permanently unaltered on the student’s record; (2) submit to the Office of the Registrar a change-of-grade form, with the grade computed on the basis of work completed by the deadline noted above; (3) after the deadline for removing the I, at the student’s request submit a Change of Grade form to the Graduate Student Services Office requesting a conversion of the I to a grade. Such conversions may be permitted on a case-by-case basis only during the two semesters immediately following the semester in which the I was received. After that period, the I will be permanent.

If work for a course in which an I has been assigned is completed prior to the deadline, the instructor will report a change of grade, taking the completed work into consideration. A grade of F or NC, as appropriate, will be assigned in those cases where an instructor has not assigned a grade to a student who has never attended or has ceased to attend class without officially withdrawing.

Change of Grades
Grades may be changed only within one full academic year following the end of the semester in which the course was completed. To change a grade, the course instructor completes and submits a Change of Grade form to the Graduate Student Services Office. The instructor must state the reason for the grade change on the form and sign the form. “Additional work submitted” is not an acceptable reason for changing a grade.

Repeated Courses
Solesly for the purpose of graduate academic actions in the computing of the GPA of students who retake a course that is otherwise non-repeatable, only the most recent grade will be included.

Students switching from either Plan A or Plan B to Plan C must have a minimum GPA of 3.0 in all courses completed (300-398, 400-498, 600-798). Credit hours taken under the credit/no credit option (except 699) while under Plan C will not be counted toward degree requirements for either Plan A or Plan B.

Credit/No Credit Option
The major purpose of the credit/no credit option is to encourage students to broaden their education by venturing into subject areas outside their fields of specialization without hazarding a relatively low grade. Under the option, students receive grades of CR (credit) or NC (no credit). These do not carry grade points and, therefore, are not computed in the student’s GPA.

The option must be exercised at the time of registration and only under the following conditions:
1. Except as noted, courses taken under the CR/NC option may not be applied toward the requirements for the master’s degree. Only 699 directed reading/research courses may be taken on CR/NC at the option of the graduate program and may be granted credit toward a master’s degree within the limits already prescribed by the Office of Graduate Education (see master’s degree requirements, Plan A and Plan B).
2. A course for which a grade of NC is received may be retaken under the CR/NC option.
3. The CR designation in the non-letter grade system denotes C grade or better.
4. The NC designation and the course in which it is received will appear in official records as part of the student’s academic history.
5. The NC designation affects neither the credit hour total nor the grade point total of the student.

Requirements for Continued Registration
Satisfactory Progress
To remain eligible for further graduate work and to be awarded a graduate degree, students must maintain progress towards completion of their programs and must have a B average (3.0 GPA) for all courses completed at UH Mānoa applicable to the degree. Students must also have a B average for all courses taken as a classified graduate student and for all graduate courses numbered 600 and above.

The Office of Graduate Education disregards grades or credit hours for courses numbered 100-198, 200-298, 399, and 499, except those required to fulfill undergraduate deficiencies.

Satisfactory academic progress in a program also involves maintaining the academic and professional standards expected in a particular discipline or program; failure to maintain these standards may result in termination of student’s admission to the program.

Fulfillment of Credit Hour Requirements
Credit hour requirements for graduate degrees can only be fulfilled by grades of A, B, and C. Grades of A, B, C, and CR can be used to make up undergraduate deficiencies. Grades of CR for 699 directed reading or research courses are counted in credit hour requirements within stated rules but are not computed for GPAs. Grades of NC are neither counted nor computed. Grades of D and F are not counted toward the completion of requirements for advanced degrees but are computed in the GPA, along with grades for all courses taken to satisfy undergraduate deficiencies and courses counted toward advanced degrees.

Probation and Dismissal
A regular student whose cumulative GPA fails to meet the minimum requirements after completing at least 8 credit hours of course work will be placed on academic probation for the fol-
lowing semester. The student must be registered in the semester he or she is placed on probation.

If admitted by exception for GPA since admission fails to meet the minimum requirements after completing one semester of course work, the student will be placed on academic probation for the following semester. (ESL students are subject to dismissal.)

All grades for courses taken during the probationary semester, as well as the grades for all previously taken classified credits, will be included in calculating the GPA at the end of the probationary semester. No extensions of the probationary semester may be granted due to incompletes I.

A student on academic probation who fails to attain the minimum standards at the end of the probationary semester will be denied further registration in that program.

For purposes of these rules, a “semester” is the calendar period, regardless of the number of credit hours taken.

For students pursuing approved concurrent graduate degree programs, the requirements stated above are applicable to both programs but will be applied toward each program independently.

Policy on Reinstatement after Dismissal

To be reinstated to the same program after academic dismissal, the student must submit completed readmission forms to the Graduate Student Services Office and meet the standard admission criteria applicable to the graduate program. The graduate program must submit a petition to Graduate Education on the student’s behalf; providing strong justification for the action. If reinstated, all courses applicable to the degree are subject to the seven year rule (i.e., must be completed within seven years of the date the degree is to be awarded) and the student will be subject to the degree requirements in effect at the time of reinstatement.

To be admitted to a new program after academic dismissal or voluntary withdrawal, the student must submit a new application to the Graduate Student Services Office and meet the standard admission criteria applicable to the graduate program. Such students will be treated like new students.

Policy on Disciplinary Suspension

To be reinstated to the same program after suspension for disciplinary reasons, the student must submit completed readmission forms to the Graduate Student Services Office and meet the standard admission criteria applicable to the graduate program. Students suspended for disciplinary reasons must adhere to posted application deadlines and may not be re-admitted mid-semester.

Special Non-degree Students

Special non-degree graduate students are not subject to the B average rule.

Diplomas

The Graduate Application for Degree form must be filed at the beginning of the semester (see the “Calendar” for dates and deadlines) in which the student expects to complete the degree requirements. Students can also obtain a Hawaiian language version of their degree. Application forms may be obtained at the Graduate Student Services Office, and the fee paid at the Cashier’s Office or online through the student’s MyUH account.

Degree Checks

A degree check will be made for all students who file a degree application form.

The Office of Graduate Education may delete from the graduation list the name of any student whose final grade report contains either a grade of I (incomplete) or a missing grade, or whose records have any other discrepancies.

Conferring of Degrees

Degrees are conferred and diplomas awarded three times annually, in December, May, and August. Students completing their degree requirements may, upon request, receive certification from Graduate Student Services Office that the degree will be conferred at the end of the appropriate semester. Diplomas are issued by the Office of the Registrar. Inquiries regarding diplomas should be addressed to the Office of the Registrar, Queen Lili’uokalani Center for Student Services, Room 010, 2600 Campus Road, Honolulu, HI 96822 [tel. (808) 956-8010], and not to Graduate Student Services.

Transcripts

Transcripts may be obtained from the Office of the Registrar.

Certificate Programs

UH Mānoa offers a number of graduate-level programs that culminate in the awarding of a certificate. These programs are available to classified graduate students who are enrolled in one of the master’s or doctoral degree programs described in this Catalog. In a few areas, applications may be considered from non-degree-seeking students. Certificates require a minimum of 15 credit hours of specified courses and a 3.0 GPA in those courses. Detailed information may be obtained by writing to the appropriate graduate chairs.

Certificate programs are offered in the following fields:
- Advanced library and information science
- Advanced women’s studies
- Chinese studies
- Clinical psychology
- Conflict resolution
- Disability and diversity studies
- Disaster management and humanitarian assistance
- Early childhood Pk-3
- Gerontology
- Global health protection and security
- Historic preservation
- International cultural studies
- Japanese studies
- Korean studies
- Museum studies
- Nursing
- Ocean policy
- Online learning technology
- Pacific Islands studies
- Philippine studies
- Planning studies
- Public administration
- Public policy
- Reading K-12
- Resource management
- Second language studies
South Asian studies
Southeast Asian studies
Telecommunications and information resource management
Urban and regional planning

**Master’s Degree Programs**

UH Mānoa confers the degrees of master of architecture, master of arts, master of education, master of education in teaching, master of fine arts, master of geoscience, master of library and information science, master of music, master of public administration, master of public health, master of science, master of social work, and master of urban and regional planning.

Faculty or staff members at rank 3 and above may not be awarded a master’s degree by UH Mānoa in the graduate program administered by the department in which they are employed.

The master of accounting degree is offered through the Shidler College of Business for students who are contemplating careers in professional accountancy.

The master of arts degree is offered through the Colleges of Arts and Sciences, the School of Pacific and Asian Studies, and the Hawai‘inuiâkea School of Hawaiian Knowledge for advanced course work including research in the following disciplines:
- American studies
- Anthropology
- Art and art history
- Asian studies
- Communication
- Communicology
- Dance
- East Asian languages and literatures
- Economics
- English
- French
- Geography
- Geology and Geophysics
- Hawaiian
- Hawaiian studies
- History
- Linguistics
- Mathematics
- Music
- Pacific Islands studies
- Philosophy
- Political science
- Psychology
- Religion
- Second language studies
- Sociology
- Spanish
- Theatre

The master of education degree is offered through the College of Education for advanced course work including research in the following disciplines:
- Curriculum studies
- Early childhood education
- Educational administration
- Educational foundations
- Educational psychology
- Educational technology
- Special education

The master of education in teaching degree is offered through the Institute of Teacher Education.

The master of fine arts degree is offered through the Department of Theatre and Dance and the Department of Art and Art History for creative endeavors.

The master of geoscience for professionals is offered through the Department of Geology and Geophysics.

The master of library and information science degree is offered through the Department of Information and Computer Sciences as preparation for careers in information services in public, college, school, and technical libraries. Graduates are also prepared for careers in other types of information environments.

The master of music degree is offered through the Department of Music for composition and performance in music.

The master of public administration degree is offered through the Public Administration Program.

The master of public health degree is offered through the Public Health program to provide individuals with a broad background for professional practice in the field of public health at local, state, national, and international levels.

The master of science degree is offered through the Public Health program, the Colleges of Arts and Sciences, Education, Engineering, Tropical Agriculture and Human Resources and the Schools of Ocean and Earth Science and Technology, Medicine, Nursing and Dental Hygiene, Travel Industry Management, and for advanced course work including research in the following disciplines:
- Animal sciences
- Astronomy
- Athletic training
- Atmospheric sciences
- Biological engineering
- Biomedical sciences
- Botany
- Cell and molecular biology
- Chemistry
- Civil and environmental engineering
- Communication sciences and disorders
- Computer sciences
- Developmental and reproductive biology
- Electrical engineering
- Entomology
- Food science
- Geology and geophysics
- Kinesiology and rehabilitation science
- Marine biology
- Mechanical engineering
- Microbiology
- Molecular biosciences and bioengineering
- Natural resources and environmental management
- Nursing
- Nutritional sciences
- Ocean and resources engineering
- Oceanography
- Physics
- Public health
Travel industry management
- Tropical medicine
- Tropical plant and soil sciences
- Tropical plant pathology
- Zoology

The master of social work degree is offered through the School of Social Work. The program prepares graduates for counseling individuals, families, and groups; for social policy formulation and community organization; and for research and administration in the human services.

The master of urban and regional planning degree is offered through the Department of Urban and Regional Planning.

Requirements and Procedures for Master’s Degrees

The rules and requirements listed below are those of the Office of Graduate Education and must be observed by all students pursuing a master’s degree. Note that some graduate programs have special requirements.

Residence

The minimum residence requirement is two semesters of full-time work or four six-week summer sessions or the equivalent in credit hours applicable to the student’s degree program.

Language Requirements

At the option of the graduate program, the intended candidate for the master’s degree may be required to demonstrate comprehension of one or more foreign languages. For specific language requirements in particular graduate programs, see the appropriate graduate program listed in this Catalog. English is not considered a foreign language in this context. These requirements must be passed before the student can be advanced to candidacy.

Time Allowed

Candidates for the master’s degree will be expected to complete all requirements within seven years after admission into the master’s program. Candidates who fail to complete all requirements within five years of admission will be placed on probation. If not completed after seven years, candidates are automatically dropped from the program. Extensions of time are allowed only upon petition by the graduate chair explaining why more time might be justified.

Types of Master’s Degree Programs

In general, there are three types of programs that students may follow to earn a master’s degree: thesis, Plan B, and examination. Not all plans are available in all programs.

Graduate Student Services uses progress forms to track thesis and dissertation students. These forms are available on the website.

Thesis (Plan A)

Credit Hour Requirements

A minimum of 30 credit hours is required including 18 credit hours of approved course work, excluding 699s and Thesis 700, at least 12 of which must be in courses numbered 600-798; at least one graduate seminar in the major or related field; and at least 6 credit hours of Thesis 700. The thesis research credit requirements are set uniformly for each graduate program by the faculty in that program.

Candidates must be registered in the thesis research course (700) each semester during which the thesis is being written. Candidates who accumulate the maximum number of thesis research credit hours, but fail to complete the thesis must register for a minimum of 1 credit hour of thesis research at the beginning of the term in which all requirements for the degree will be completed.

Thesis Requirement

When a thesis proposal has been approved by the student’s committee, the chair of the graduate program sends to the Graduate Student Services Office a Student Progress Form II (approval of thesis topic). The student may then enroll in the thesis research course (700) at the beginning of the next term. Students must register for Thesis 700 during the announced registration period. Failure to make satisfactory progress on a thesis does not entitle a student to a refund of tuition.

Upon request by the thesis committee, relevant work done by the student in directed reading/research (course 699) may be utilized as part of the thesis research. In such instances, the total credit hours for such directed reading/research (course 699) and thesis research (700) to be applied toward the minimum requirement for the degree shall not exceed the maximum total credit hours specified for thesis research in the graduate program.

The thesis committee is made up of three members of the graduate faculty.

The chair of the thesis committee is primarily responsible for directing and guiding the candidate’s research and writing activities. It is the student’s responsibility to keep all members of the committee informed of the scope, plan, and progress of both the research and the thesis. The committee members approve via Progress Form II and Progress Form IV (signature page). Guidelines for thesis preparation are available on the Graduate Education website.

The electronic submission of the thesis is required. Submit a pdf file on a disc (two discs if publishing with ProQuest Information and Learning). Theses must be deposited with the Graduate Student Services Office by the specified deadline (see the “Calendar”).

General Examination

At the option of the faculty of the graduate program, a general examination may be required before a student is advanced to candidacy for a master’s degree. All students within a particular graduate program must take the examination if it is required. The examination is usually given during the first semester of residence. It is designed to reveal the quality of the student’s preparation for advanced work in the program and the ability of the student to pursue graduate work at the master’s level. The examination also enables the student’s committee or advisor to assist in planning a program that will overcome any deficiencies in the student’s background.

A student who passes the examination may be recommended for advancement to candidacy for the master’s degree. A student who fails the general examination may repeat it once upon approval by the graduate program. However, students failing the general examination a second time are dropped from the program.

In graduate programs not requiring a general examination, the student may be advanced to candidacy upon the recommendation of the advisor and/or the graduate faculty of the program concerned. It is assumed that in these cases the recommenda-
tion for advancement to candidacy will be based on some evaluation of the student’s potential performance other than a general examination. Students who are denied advancement to candidacy are dropped from the program and lose their status as classified graduate students.

Final Examination

A final oral examination covering the thesis and related areas may be required by individual graduate programs. All Plan A students within a particular graduate program must take the examination if it is required at all. It should be held prior to the specified deadline before the end of the term during which the degree is conferred. It is conducted by the thesis committee and is open to all graduate faculty members. As an alternative, the committee chair may have the candidate present results of the thesis at a departmental graduate seminar, but all members of the thesis committee must be present.

Students failing the final examination may repeat it only once upon petition approved by the graduate program. Notification should be sent to the Graduate Student Services Office via the Form II of a second attempt. Students who fail the final examination a second time are dropped from the program and lose their status as classified graduate students. If the graduate program does not require a final examination, the chair of the graduate faculty concerned reports the completion of all degree requirements on Student Progress Form III.

Plan B

Credit Hour Requirements

A minimum of 30 credit hours is required. A minimum of 18 credit hours must be earned in courses numbered 600-798 (excluding Thesis 700) including at least one graduate seminar in the major program or in a related program. Not more than 9 credit hours in directed reading/research (course 699) may be applied to meet degree requirements. This degree plan typically includes a final project, practicum, or similar culminating experience.

When the student is advanced to candidacy, the chair of the graduate program appoints a program advisor or a program committee made up of members of the graduate faculty. The program advisor/committee advises the candidate and approves a coherent program of courses for the candidate.

Candidates must be enrolled during the term in which they complete the requirements for the degree; regular course work or the appropriate Master’s Plan B Studies 500 may be used to meet this requirement. The 500 course is offered as a 1-credit course with a mandatory grading of S/NG but does not carry credit toward meeting degree requirements.

General Examination

At the option of the faculty of the graduate program, a general examination may be required before a student is advanced to candidacy for a master’s degree. All students within a particular graduate program must take the examination if it is required at all. The examination is usually given during the first semester of residence. It is designed to reveal the quality of the student’s preparation for advanced work in the program and the ability of the student to pursue graduate work at the master’s level. The examination also enables the student’s committee or advisor to assist in planning a program that will overcome any deficiencies in the student’s background.

A student who passes the examination may be recommended for advancement to candidacy for the master’s degree. A student who fails the general examination may repeat it once upon approval by the graduate program. However, students failing the general examination a second time are dropped from the program.

In graduate programs not requiring a general examination, the student may be advanced to candidacy upon the recommendation of the advisor and/or the graduate faculty of the graduate program concerned. It is assumed that in these cases, the recommendation for advancement to candidacy will be based on some evaluation of the student’s potential performance other than performance in the general examination. Students who are denied advancement to candidacy are dropped from the program and lose their status as classified graduate students.

Final Examination

At the option of the faculty of the graduate program, a final examination may be required of Plan B candidates for the master’s degree. If required, it is designed to determine the candidate’s achievement in the graduate program at the master’s level. This examination has several possible forms. It may be a seminar appearance, a written comprehensive examination, an oral examination, some equivalent, or a combination of these. If a final examination is required by the graduate program, it must be given prior to the established deadline before the end of the term during which the degree is conferred.

Students failing the final examination may be permitted to repeat it only once upon approval by the graduate program. Notification should be sent to the Graduate Student Services Office via the Form II of a second attempt. Students failing the examination a second time are dropped from the program and lose their status as classified graduate students.

Examination (Plan C)

Neither a thesis nor a certain number of credit hours is required by this plan. The student must demonstrate competence by examination and must meet the minimum residence requirement of two semesters of full-time study.

A preliminary conference will be held to discuss the student’s objectives and how to meet them and to determine the general program the student will follow to prepare for the required examinations. The conference will be conducted by the chair of the graduate program or by a designated member of the graduate faculty. The plan of study developed at this conference may include course work and/or independent study and research. Plan C is available in second language studies, linguistics, mathematics, natural resources and environmental management, physics, and tropical plant and soil sciences. Each graduate program specifies its own requirements in addition to the following:

Candidates must be enrolled during the term in which they complete the requirements for the degree; regular course work or the appropriate Master’s Plan C Studies 500 may be used to meet this requirement. The 500 course is offered with a mandatory grading of S/NG but does not carry credit toward meeting degree requirements.

General Examination

A general exploratory examination (oral and/or written) will be given to determine if the intended candidate should be admitted to candidacy for the master’s degree under Plan C and to ascertain weaknesses in the student’s academic preparation. This
examination is designed to reveal the quality of the student’s preparation for advanced work in the program and the ability of the student to pursue graduate work at the master’s level. The examination will be conducted by the student’s interim advisor and the graduate faculty of the program or a committee thereof consisting of at least three members of the faculty. It is given during the first semester of residence and is from one to two hours in length. A student who fails the general examination may repeat it upon approval by the graduate program. Notification should be sent to the Graduate Student Services Office via the Form I of a second attempt. A student who fails the general examination a second time is dropped from the program and loses their status as classified graduate student status.

**Final Examination**

A final examination or series of examinations, written and oral, will be given to determine the candidate’s comprehension of the graduate program at the master’s level. Since there are no course requirements for this plan, the final examinations will be designed to give the student opportunity to demonstrate a level of achievement consonant with the level of achievement required by Plans A and B. It is assumed that many students will prepare themselves for the examinations by taking courses recommended by advisors.

Specifications for the number of written examinations required, what they cover, and the amount of time required for each (two or more hours for written examinations and one or more for the oral portion) are set forth in the statement of requirements in each graduate program. The written examinations may be given by the candidate’s committee or by an examination committee of graduate faculty members constituted for that purpose.

The oral portion of the final examination follows the written portions and must be held prior to the specified deadline before the end of the term during which the degree is conferred. It is conducted by the candidate’s committee and is open to all members of the faculty. The examination must be announced in the weekly *News@UH*. It may be scheduled on any working day during normal working hours. Arrangements for the final examination must be made at least three weeks prior to the date of examination for fall and spring semesters, and four weeks prior to the date of the examination for the summer.

Candidates failing the final examination may be allowed to repeat it upon approval by the graduate faculty concerned. Notification should be sent to the Graduate Student Services Office via the Form II of a second attempt. Students failing the final examination a second time are dropped from the program and lose their status as classified graduate students.

**Doctor of Philosophy Programs**

Faculty or staff members at rank 3 and above may not be awarded a doctoral degree by UH Mānoa in the graduate program administered by the department in which they are employed.

The doctor of philosophy (PhD) degree is awarded only for the most distinguished scholarly achievement. The quality of a candidate’s work is judged by a variety of means, culminating in a set of comprehensive and final examinations and a dissertation. The dissertation describes completed research and must be a significant original contribution to knowledge in the candidate’s chosen program. The additional, special requirements in any given graduate program prepare the candidate for the examinations and successful completion of the dissertation. Candidates are accepted only in graduate programs in which the teaching staff, library, laboratory equipment, and cooperative relationships with other research institutions make it possible to offer training.

The doctor of philosophy is offered in the following areas:
- American studies
- Anthropology
- Astronomy
- Atmospheric sciences
- Botany
- Business administration
- Cell and molecular biology
- Chemistry
- Civil and environmental engineering
- Clinical research
- Communication and information sciences
- Computer science
- Developmental and reproductive biology
- East Asian languages and literatures
- Economics
- Education
- Educational psychology
- Electrical engineering
- English
- Entomology
- Epidemiology
- Geography
- Geology and geophysics
- History
- Linguistics
- Marine biology
- Mathematics
- Mechanical engineering
- Microbiology
- Molecular biosciences and bioengineering
- Music
- Natural resources and environmental management
- Nursing
- Nutrition
- Ocean and resources engineering
- Oceanography
- Philosophy
- Physics
- Political science
- Psychology
- Second language studies
- Social welfare
- Sociology
- Theatre
- Tropical medicine
- Tropical plant and soil sciences
- Tropical plant pathology
- Urban and regional planning
- Zoology

**Doctor of Education**

The degree of Doctor of Education (EdD) is awarded for distinguished academic preparation for professional practice in the
field of education. The quality of a candidate's work is judged by a variety of experiences, culminating in an internship, a set of comprehensive and final examinations, and a dissertation. The dissertation is based on a selected research problem and is a significant part of the candidate's field experience or internship.

**Doctor of Public Health**

The degree of Doctor of Public Health (DrPH) is awarded for distinguished academic preparation for professional practice in the field of public health. The quality of a candidate's work is judged by a variety of means, culminating in a set of comprehensive and final examinations and a dissertation. The dissertation must be a significant original contribution to knowledge in the field of public health practice. Required course work is designed to prepare the candidate for the examinations and the dissertation.

**Doctor of Nursing Practice**

The degree of Doctor of Nursing Practice (DNP) is awarded for distinguished academic preparation for professional practice in the field of nursing. Candidates must progress through course work and a series of capstone experience culminating in a final project. The student must produce a tangible and deliverable academic product that is derived from practice immersion experience and is reviewed and evaluated by the faculty.

**Requirements and Procedures for Doctoral Degrees**

**Time Allowed**

Doctoral students are expected to complete all requirements within seven years after admission into the doctoral program. Candidates who fail to complete all requirements within seven years of admission will be placed on probation and are subject to dismissal at any point after, but automatically after 10 years. Extensions of time are allowed only upon petition by the graduate chair explaining why more time might be justified.

**Credit Hour Requirements**

There is no minimum number of required course credit hours set for doctoral degrees. Registration in courses by doctoral students is governed by (1) the judgment of advisors or faculty in charge of the relevant program of study as to the importance of particular course work to the training and preparation of the candidate for the writing of examinations and/or the dissertation; (2) residence requirements; and/or (3) provisions of graduate assistantships, fellowships, or scholarships. For information regarding required or recommended courses, see the section appropriate to the graduate program.

**Language Requirements**

At the option of the graduate program, intended candidates for the doctoral degree may be required to take a written examination to demonstrate comprehension of one or more foreign languages. To pass the examination they must be able to read research materials in their graduate program at a reasonable speed. English is not considered a foreign language in this context.

No limit has been placed on the number of times students may take the examination. However, it must be passed before students can be advanced to candidacy and take the comprehensive examination.

**Doctoral Committee**

The doctoral committee may be selected at any time after a student becomes an intended candidate. The chair of the graduate faculty of the program recommends to Graduate Education appointment of a doctoral committee consisting of at least five members of the graduate faculty. The committee must include one graduate faculty member from another field of study. This university representative must be a full member of the graduate faculty. The majority of the committee and the committee chair must be from the graduate program in which the degree program is offered. This committee, appointed by Graduate Education, prescribes for the candidate a course of study in preparation for the comprehensive and oral examinations described below. It also approves the dissertation research topic and the dissertation itself.

It is the student's responsibility to select an appropriate dissertation topic coinciding with the expertise and interest of a graduate faculty member who is willing to work with him/her.

**Examinations**

Doctoral candidates must pass the following examinations:

**Qualifying Examination**

A qualifying examination may be required by some graduate programs. The purpose of this examination is to determine whether to encourage students to proceed in a doctoral program and, if encouraged, to enable advisors to assist students in planning a program that will familiarize them with the requisite knowledge and techniques of their chosen graduate program. Graduate programs requiring this examination give it early in the intended candidate’s program (often coinciding with the master’s final examination). It may be oral and/or written and is conducted by a special examination committee appointed by the graduate chair of the graduate program or by the student’s doctoral committee. A student who fails the qualifying examination may repeat it once at the discretion of the graduate faculty concerned. However, students failing the qualifying examination a second time are dropped from the program and lose their status as classified graduate students.

**Comprehensive Examination**

The comprehensive examination is an important step in the sequence of study toward the doctoral degree. This examination covers the major graduate program and work fundamental thereto and minor fields as may be required by the graduate program. Its purpose is to ascertain the student’s comprehension of the chosen graduate program.

The examination is given only after the student has completed the foreign language requirement, if any, and when, in the judgment of the graduate faculty, the student has had sufficient preparation in the graduate program either through course work or other individual study and research. The comprehensive examination may be either oral or oral and written. It is conducted by a committee of the graduate faculty.

A student who fails the comprehensive examination may repeat it once at the discretion of the graduate faculty concerned. A student who fails the examination a second time is dropped from the program and loses classified graduate student status.

The student who passes the examination is eligible, at the option of the various graduate programs, to receive a UH Mānoa certificate indicating that all requirements of the doctorate except for the dissertation have been completed.
Final Examination

A final examination in defense of the dissertation may also cover related subjects and is required of all candidates for the doctoral degree. The examination is oral and is conducted by the candidate’s doctoral committee. It is never less than one hour in length. Arrangements for the final examination must be made at least two weeks prior to the date of examination, since an announcement must appear in the *News@UH*. The examination must be held while UH Mānoa is in session and must be open to the public.

A candidate who fails the final examination may be allowed to repeat it upon approval by the graduate faculty concerned. Notification should be sent to the Graduate Student Services Office via the Form II of a second attempt. A candidate who fails the final oral examination twice is dropped from the program and loses classified graduate student status.

A candidate who passes the examination, and who has met all other requirements, will be awarded the doctoral degree at the end of the appropriate term.

Dissertation

The doctoral dissertation for the PhD is expected to be a scholarly presentation of an original contribution to knowledge resulting from independent research.

An essential aspect of dissertation research is the free and full dissemination of research results. Moreover, all dissertations must be publicly defended in an oral examination. Therefore, proprietary or classified information is not suitable for a dissertation; data which cannot be made public at the time of the final defense should not be incorporated into the student’s research.

When the dissertation topic has been approved by the doctoral committee, it will notify the Graduate Student Services Office through submission of Student Progress Form II. The candidate may then register for the dissertation research course (800) during the next registration period.

A candidate should look to the chair of his or her doctoral committee for primary direction regarding research methods and the preparation of results. It is the joint responsibility of the chair and the student to see that all members of the committee are kept informed of the scope, plan, and progress of both the research and the dissertation. Guidelines for preparation of the dissertation can be obtained on the Graduate Education website.

Copies of the completed dissertation must be submitted to committee members at least four weeks prior to the date of the final oral examination. Please check with Graduate Student Services (or the website) regarding the submission procedures for thesis and dissertations.

A majority of the members of the doctoral committee, including the committee chair, must approve both the dissertation and the oral defense of the dissertation. A minority member has the right of appeal to Graduate Education for a final decision. The chair must ensure that the final form of the dissertation, including revisions and amendments agreed upon, is acceptable to a majority of the committee. The committee members express their approval on the Student Progress Form III and Student Progress Form IV (formerly signature page).

Candidates must be registered in the appropriate dissertation research course (800) during the term in which the work for the degree is completed. Failure to make satisfactory progress on the dissertation does not entitle a student to a refund of tuition.

The graduate chair of a program has the privilege of being an ex officio member of all doctoral committees in the field.

All doctoral students are required to publish their dissertation (in its entirety) with ProQuest Information and Learning or an equivalent publishing firm suggested by the student and approved by Graduate Education.
Services and programs are provided on the campus to help students make the transition to UH Mānoa, to secure basic financial assistance and housing, to obtain the personal assistance needed to achieve academic goals, and to plan for productive careers.

Co-curricular programs offer students opportunities for leadership development and cultural, social, and recreational experiences. These programs provide excellent opportunities to gain leadership skills, to serve the community, and to obtain insights into community organization and development. Students are urged to participate in campus programs as involvement enhances the learning experience and leads to a more enjoyable and successful student life on campus.

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Vice Chancellor for Students
Queen Lili’uokalani Center for Student Services 409
2600 Campus Road
Honolulu, HI 96822
Tel: (808) 956-3290 (Voice/Text)
Fax: (808) 956-9682

The Office of the Vice Chancellor for Students coordinates educational services and programs within the Office of Student Affairs and acts as a resource on the development of UH Mānoa policies related to student affairs. The Office of the Vice Chancellor for Students also advises and assists students regarding discrimination, academic disputes and grievances, conduct code issues, and other related matters.
Housing
Student Housing Services
Frear Hall
2569 Dole Street
Honolulu, HI 96822-2381

On-Campus
Tel: (808) 956-8177
Fax: (808) 956-5995
Email: uhms@hawaii.edu
Web: manoah.hawaii.edu/housing

UH Mānoa has approximately 3,700 bed spaces available on campus. Facilities range from residence halls with shared doubles or suites with a limited number of singles, to apartments with shared one-bedroom and two-bedroom units. A limited number of modified and accessible units are also available. Students with families live in the apartment area.

Living on campus provides students with a residential learning experience that is supported and enhanced by live-in housing staff. Residence Directors and Resident Assistants actively serve as resources, help to develop positive communities, and organize activities and programs. Residents are able to make stronger connections with other students and their academic pursuits while experiencing a greater engagement in campus life.

Residents living in the residence halls are required to select and purchase a dining plan from a variety of dining plans offered. A dining plan is optional for apartment residents. Residents dine at the Hale Aloha or Gateway House cafeterias. Detailed dining plan information is available at our Student Housing Services website.

Applications received by the application deadline are prioritized by predetermined categories. Placement is offered only to those applicants who have been accepted into classified programs of study and have confirmed their intent to attend the university. Applications received after the application deadline are assigned on a first come, first serve basis. Neither on-time nor late applications are guaranteed an assignment offer.

Off-Campus Housing Referral Program
Tel: (808) 956-7356
Fax: (808) 956-6732
Email: och@hawaii.edu
Web: www.housing.hawaii.edu/och

The UH Mānoa Off-Campus Housing Referral Program (OCH) is a service provided and maintained by Student Housing Services. Students, faculty, and staff may access online referrals for off-campus rentals. The program also provides a Guide to Living Off-Campus, which includes information on landlord-tenant laws, utilities, and average costs of Honolulu housing.

You must be a registered student or faculty/staff member at UH Mānoa to access the listing pages. Students, faculty, and staff are required to use their UH Mānoa username to gain access to the listing database. For incoming or affiliated students, faculty, and staff, the creation of a temporary account is possible. Temporary accounts are issued for a maximum of 30 days.

A listing on the website does not indicate approval or endorsement as UH Mānoa does not investigate, endorse or guarantee the accuracy of any referrals listed on the Off-Campus Housing website.

Commuting and Parking (formerly Parking)
Commuter Services
Queen Lili‘uokalani Center for Student Services 014
2600 Campus Road
Honolulu, HI 96822
Tel: (808) 956-8899
Fax: (808) 956-9811
Email: parking@hawaii.edu
Web: www.hana.hawaii.edu/commuter

The mission of Commuter Services (formerly known as Parking Services) is to maximize access to the UH Mānoa campus through a commitment to innovation, environmental sustainability, resource management, and quality customer service.

Students, faculty, and staff employ various modes of transportation to campus. Alternative options to driving alone include Honolulu’s bus system (TheBus), biking, walking, and carpooling.

Currently, full-time students (after paying their mandatory $40/semester Transportation Fee) qualify for a U-Pass, which allows them to ride TheBus at no cost 24/7 during the fall and spring semesters. The U-Pass sticker is affixed to the student’s ID and issued at the Ticket, Information, and ID Office in the Campus Center. UH Mānoa is served by bus routes 4, 6, 13, and 18, plus express routes A, 80A, 85, 85A, 90, and 94. Real-time bus schedules are available at www.thebus.org/Route/Routes.asp. For more information, call (808) 848-5555 or go to www.thebus.org.

The University’s Rainbow Shuttle system consists of multiple routes through campus and the neighboring vicinity, day and evening. This free service includes regular runs to and from residence halls, as well as adjacent neighborhoods, and off-campus parking locations. For shuttle schedules and route maps, get the app “UHM Shuttle” or go to www.uhmshuttle.com.

Bike parking on campus is also free—cyclists are reminded to lock their bike to one of the many authorized racks to avoid citation.

UH Mānoa’s car sharing program, a partnership with Enterprise Rent-A-Car, provides those commuting to or living on campus without a vehicle the option of a short-term car rental. Shared cars are conveniently parked at various locations around campus. Learn more about this low-cost, environmentally-friendly membership program at manoah.hawaii.edu/commuter/carshare.html.

If you plan to drive to Mānoa, a limited number of parking permits are available to UH Mānoa affiliates. Read more about the permit application process on our website. Apply for regular day permits, as well as carpool (students only), evening, and medical permits. Visitors and students may also pay a daily fee to park, on a space-available basis, in designated locations, such as the Lower Campus Parking Structure. Motorcycles and mopeds must also have a paid permit to park in designated lots on campus.

Parking regulations are enforced 24 hours daily throughout the year. Vehicles in violation are subject to citation and/or towing. Please familiarize yourself with UH Mānoa parking regulations on our website; plus the campus policy governing bikes, skateboards, and other coasting devices at manoah.hawaii.edu/movewithaloha.

Commuter Services Office is open Monday through Friday, 7:45 a.m. to 4:30 p.m.; closed on holidays.
UHM Department of Public Safety (DPS) is dedicated to providing and promoting a safe and secure campus, and serving our community with aloha.

DPS provides protection and security for the university and campus community 24 hours a day throughout the year. Its duties include patrolling the UH Mānoa campus and property in the surrounding community, and enforcing UH Mānoa rules and regulations. Duties also include crime prevention and investigating reports of suspicious persons and incidents. The Campus Safety Escort Service is offered to students and employees walking alone at night from one on-campus facility to another. 74 Emergency Call Boxes are located throughout campus. They are easily identified at night by blue lights and provide instant communication with DPS. Throughout the school year, DPS hosts various safety awareness events and informational sessions.

DPSy complies with the Jeanne Clery Act. For information concerning DPS policies, the Annual Security Report, crime prevention, and other safety tips, visit manoa.hawaii.edu/dps.

Mānoa Bookstore
2465 Campus Road
Honolulu, HI 96822
Tel: (808) 956-8252
Fax: (808) 956-8495
Web: www.bookstore.hawaii.edu/manoa

University of Hawai’i at Mānoa Bookstore (Mānoa Bookstore), an operation of UH Mānoa Campus Services, offers a great selection of textbooks, school and office supplies, technology products, apparel, spirit items, and more. Located in Campus Center, its regular hours of operation are: Monday-Friday from 8:00 a.m. to 4:30 p.m., Saturday from 9:00 a.m. to 12:30 p.m., and closed on Sundays and holidays. All proceeds from Mānoa Bookstore sales benefit the University of Hawai’i.

The book department provides required textbooks for all courses, supplemental study guides, books by University of Hawai’i authors, and hardback bestsellers. Textbooks are requested by faculty and made available for purchase at the start of each academic term. Mānoa Bookstore offers many affordable options for textbook purchases: new, used, rental, and/or digital books, when available. Books may be ordered online or by phone for at-home delivery or in-store pick-up. Prices of books in-store may also be compared with online retailers at www.bookstore.hawaii.edu/manoa. For students who wish to sell books they no longer need, the Bookstore hosts a textbook buyback session six times a year.

Because college is not all about books, Mānoa Bookstore carries general office and school supplies as well as a wide variety of art supplies recommended by academic instructors. In addition, the Bookstore offers convenience items, snacks and beverages, health and beauty aids, greeting cards, alumni accessories, and small gifts. When it’s time to graduate, students shop for their caps and gowns, commencement announcements, and diploma frames in Mānoa Bookstore’s supplies department.

For new computer, laptop, or tablet purchases, ask about the Bookstore’s educational pricing for UH Mānoa students and staff (valid UH ID or current registration required). Mānoa Bookstore is an Adobe software seller, Dell University retailer, and an Apple Authorized Campus Store with Apple-certified technicians. The computer department also carries headphones, laptop cases, portable speakers, adapters, and other tech accessories.

For document services, see the Bookstore’s Campus Solutions, conveniently located next to the Customer Service counter. Campus Solutions is a one-stop shop for affordable copying and printing on campus. Campus Solutions also handles document finishing, faxing, scanning, and laminating services for students, staff, and visitors. Simple printing jobs may be ordered online at www.bookstore.hawaii.edu/manoa.

In addition to classroom necessities, Mānoa Bookstore features official University of Hawai’i licensed logo clothing and spirit items, including brand name athletic wear, T-shirts, alumni apparel, and game gear for University of Hawai’i fans. The Bookstore’s Campus Road fashion line also carries trendy, non-logo apparel. Handbags, backpacks, hats, drinkware, dorm accessories, and jewelry are other popular items in-store.

Mānoa Bookstore has everything for college life and more. Information about special events, contests, sales, new products, and seasonal hours may be found on the Bookstore’s website (www.bookstore.hawaii.edu/manoa), Facebook page (www.facebook.com/manoabookstore), Twitter (@manoabookstore), and Instagram (@manoabookstore), or by signing up for the Bookstore’s monthly e-newsletter.

Library Services

Hamilton Library
2550 McCarthy Mall
Honolulu, HI 96822
Tel: (808) 956-7203 (Voice/Text)
(808) 956-2534 (Voice/Text)
Web: library.manoa.hawaii.edu

Sinclair Library
2425 Campus Road
Honolulu, HI 96822
Tel: (808) 956-3838 ext. 52 (Voice/Text)
(808) 956-5417 (Voice/Text)
Web: guides.library.manoa.hawaii.edu/sinclairlibrary

Library Hours
Web: library.manoa.hawaii.edu/about/hours.html

Library Departments, Collections & Services
Web: library.manoa.hawaii.edu/departments/departments.php
Library Staff Directory by Departments and Collections
Web: library.manoa.hawaii.edu/about/directory/department.php

UH Mānoa Library (housed in Hamilton and Sinclair facilities) provides the largest collection of information research materials in the state. More than 3.4 million volumes, including about 44,000 currently received print and electronic journal titles, make this the 85th largest research library in the U.S. Its website provides access to local and national indexes, specialized databases, internet resources, unique, local digitized collections, and library catalogs throughout the nation. Hamilton Library contains the main book, periodical, and microform collections. Separate components include the Asia Collection; Archives & Manuscripts; Hawaiian & Pacific Collections; Special Research Collections (including rare books); the Charlot Collection; Government Documents; Maps, Aerials, and GIS (MAGIS); Business, Humanities and Social Sciences; and Science and Technology (including medicine).

Librarians provide information literacy instruction, reference services, online information retrieval, and research consultation. The Interlibrary Loan and Document Delivery services help faculty and students obtain research material from off-campus sources. A Computerized Learning and Information Center is staffed in partnership with Information Technology Services.

Rooms for individual and group study and presentation practice are available at both libraries. Graduate students may reserve lockers and private study carrels in Hamilton on a space-available basis. The library hosts lectures, workshops, and other events and provides several exhibit areas. Sinclair Library houses the Reserve Materials Collection, the Wong Audiovisual Center, the Wong Computer Lab, the Student Success Center, and the Music Collection. The Wong Audiovisual Center has a large collection of video and sound recordings that may be reserved for classroom showings or individual use.

Health Services
University Health Services Mānoa
1710 East-West Road
Honolulu, HI 96822
Tel: (808) 956-8965 Reception Desk
   (808) 956-6221 Specialty Clinics
Fax: (808) 956-0853
Web: www.hawaii.edu/shs/

University Health Services Mānoa (UHSM) offers medical services and health promotion programs for students, faculty, and staff. Patient Care: Monday through Friday, 8:30 a.m. to 4 p.m. Hours of operation: Monday through Friday, 7:45 a.m. to 4:30 p.m. For overnight and weekends, medical professional telephone consultation is available. For clinic hours, appointments, or information, please call UHSM, or visit the website above.

Health Clearance
The State of Hawai‘i mandates that certain health requirements be met for entrance to post-secondary educational institutions. (Hawaii Administrative Rules, DOH Title 11, Chapter 157)

You may not register for classes until you have received health clearance.

Health Clearance Requirements are:

- **Submit Health Clearance Form.** Information on obtaining the Health Clearance Form is given to students along with their acceptance packet. Complete the front page of this form to the best of your ability. The back page can be completed by your physician or, if you have your own personal immunization records, you can submit a copy of the records.

- **Comply with State of Hawai‘i tuberculosis clearance guidelines.** ALL students enrolled at UH Mānoa must have tuberculosis (TB) clearance. A negative TB skin test (PPD-Mantoux) within one year prior to your enrollment is required. Skin test results must be read in 48 to 72 hours and results documented in millimeters, i.e., 0mm. If positive, a chest x-ray is required. TB tests must be performed by a U.S. licensed provider.

- **Returning or Transferring Students from a post-secondary school in Hawai‘i (i.e., UH Hilo, Community Colleges, Chaminade, HPU, etc.):**
  - When you re-enroll in another post-secondary school in Hawai‘i, a copy of your original certificate shall meet the Tuberculosis requirements for certification.
  - The Tuberculosis certificate must be done in Hawai‘i for a post-secondary school.
  - Hawai‘i students with a history of a positive PPD and negative chest x-ray must complete and return the Tuberculosis Symptom Screening form.

- **Provide documentation of immunity to measles, mumps, and rubella (MMR)**
  - You need two live doses of measles vaccine, with at least one being an MMR (Measles, Mumps, and Rubella) vaccine.
  - Your first dose must have been given on or after your first birthday.
  - Your second MMR vaccine must have been given at least 4 weeks after the first vaccine.
  - Measles, Mumps, and Rubella immunizations may be waived if:
    - You have a blood test to prove your immunity to measles, mumps, and rubella. The measles, mumps, and rubella titers are needed, OR
    - You were born before 1957.

Clinical Services

General Medical Clinic

Physicians and nurses provide primary medical care for illness and injury. Services also include immunizations, travel counseling, allergy shots, and physical examinations. A clinical laboratory provides testing, and the pharmacy stocks prescription and over-the-counter medications. UHSM assists patients in obtaining specialized medical services in the community.
Specialty Clinics

Specialty clinics include sports medicine, dermatology, and psychiatric services. The following special services are also offered:
- Nutritional counseling is provided for medical conditions and weight, sports, and fitness concerns.
- The Women’s Health Clinic offers examinations, pap tests, contraception and emergency contraception, tests and treatment for sexually transmitted infections, pregnancy tests, and education and counseling.

Fees

Services, supplies, and medications are provided at reasonable cost to clients with and without billable insurance. UHSM will submit claims for visits and procedures to the endorsed UH student insurance plans and other non-HMO companies.

Health Promotion Program

Queen Lili‘uokalani Center for Student Services, 313D
2600 Campus Road
Honolulu, HI 96822
Tel: (808) 956-3574 Health Promotion and Mânoa Alcohol Project Resource Center
Fax: (808) 956-6371

Student Health Insurance

All students are strongly urged to purchase medical insurance. Nonimmigrant international students are required to have insurance coverage. UH Mānoa endorses student health insurance plans with enrollment periods at the beginning of each semester. The endorsed plans cover visits at UHSM. Contact the Health Promotion Resource Center or visit the UHSM website for information on these plans.

Health Resource Center

The Resource Center provides a wide range of health education materials for personal use and class presentations and papers. Resource center personnel are available to assist students, faculty, and staff.

Peer Education/Service Learning Program (LOKAHI Program)

Based at the Health Resource Center, LOKAHI is a peer education/service learning program through which staff and trained student educators provide presentations for classes and other campus groups. Topics include responsibility sexuality; safe dating; body image; tobacco; alcohol and other drugs; wellness; and stress management.

Alcohol and Other Drug Education Program (ADEF)

ADEF provides education, brief intervention, counseling, and referral in regard to alcohol and other drugs. This includes work with students who have violated alcohol and/or drug use guidelines, as well as self-referrals. Visit the website at www.hawaii.edu/shs/health_promotion/adep.php.

Mânoa Alcohol Project (MAP)

Mânoa Alcohol Project (MAP) is a grant-funded project providing primary prevention services to reduce underage and harmful consequences of drinking. Visit the website at www.facebook.com/UH.MAP.

Student Employment and Training Opportunities

Paid employment opportunities are listed at the Mānoa Career Center. Volunteers serve in peer education programs and on the Student Health Advisory Council (SHAC). Students also receive training to fulfill academic requirements in medicine, nursing, social work, psychology, and public health. Staff members assist students with research projects.

Food Service

Mânoa Dining Services: A partnership between Student Affairs and Sodexo
2573 Dole Street
Honolulu, HI 96822
Tel: (808) 956-2131
(808) 956-8721
Fax: (808) 956-9671
Web: uhm.sodexomyway.com

Mānoa Dining Services has a variety of options for students, staff, faculty, and visitors on campus. Centrally located at Campus Center, you’ll find favorites such as Starbucks, Jamba Juice, Pizza Hut, Taco Bell, Simply To Go, and Campus Center Food Court. Ba-Le, located in Hemenway Hall, specializes in Vietnamese-style sandwiches, pho, bubble teas, and an assortment of grab and go salads and sandwiches. Located on lower campus are Hale Aloha Café and Gateway Café, all-you-care-to-eat dining halls for students, staff, faculty, and visitors.

Mānoa Dining Services also offers catering for all tiers of events. Try our Shoestring menu, which includes ala carte items like furikake mochiko chicken or baked manapua—great for student groups and their budget! Our Community menu is perfect for the casual affair, with themed buffets or party packages featuring wings, tacos, and sandwich options. The Flavors menu is designed to showcase our full service catering. Menu choices range from the Classic Continental breakfast buffets to served luncheons and dinners featuring tasty entrees like roasted chicken florentine. In need of something different? Our Executive Chef is able to design custom menus for your next special event!

Meal Plans

Student Affairs Dining offers meal plans to students living on-campus, as well as for faculty, staff, and student commuters. Full meal plans ranging from 50 meals per semester to 19 meals per week are available for our frequent diners.

Also, Flash Cash, our debit card system, allows you to add cash to your UH ID card. Flash Cash allows you to leave the credit card and cash at home and use your UH ID for your dining purchases. It’s quick, convenient, and easy to reload. Additionally, you’ll earn up to 10% in bonus points for every deposit. Flash Cash can be purchased at the Campus Center Ticket, Information, and ID Office.

The Resident Dining Club Card is also available for anyone that would like to dine at Hale Aloha and Gateway Cafés. The club card gives you a free all-you-care-to-eat meal after the cash purchase of any 5 meals at either location. You can pick up your club card when you dine at either of these locations.

To view our menu and hours of operation visit us online at uhm.sodexomyway.com.
Mānoa Career Center
Queen Lili‘uokalani Center for Student Services 212
2600 Campus Road
Honolulu, HI 96822
Tel: (808) 956-7007
Fax: (808) 956-4082
Email: careers@hawaii.edu
Web: manoa.hawaii.edu/careercenter

The Mānoa Career Center empowers students to engage in career life planning through awareness, exploration, experience, and reflection. As a student-centered organization, the center contributes to the engagement and retention of students in career life planning through counseling; experiential, work-based learning programs; outreach activities, and workshops that promote professional and personal development. Over 9,000 students engage in an array of services and programs. The Mānoa Career Center motto: Careers begin here.

Career Development

Counseling and Offerings

A variety of offerings are available to assist in career planning for employment and/or graduate or professional schools.

Resources

- Career and experiential listings from local, mainland, and overseas employers
- Job search and applying to graduate school handouts
- Salary information, employer literature, employment market trends, career search related books, and magazines
- Graduate school directories and information

Services

- Personalized career counseling
- Job skills workshops, resume, cover letter, and personal statement reviews
- Credential files
- Employer recruitment program
- Practice interviews

Experiential and Career

Programs and Opportunities

Experience before graduation provides tremendous opportunities to clarify career expectations and develop professional workplace skills. Consider the following experiential and career opportunities.

University

- Students work on the campus community

Federal Work Study

- Students utilize need-based aid in campus or community service positions

Non-University

- Part-time, full-time, and seasonal work opportunities

Co-op and Internships

- Students receive career-related experience before graduation:
  - Enhance communication and other transferable skills
  - Put theory into practice and gain professional skills
  - Engage in job search strategies
  - Network with professionals
  - Develop and build your career plan and portfolio

Child Care

Children’s Center Administrative Office
Queen Lili‘uokalani Center for Student Services 407
2600 Campus Road
Honolulu, HI 96822
Tel: (808) 956-7963
Fax: (808) 956-4157
Email: uhmcc@hawaii.edu
Web: www.hawaii.edu/childrenscenter

Child care is available at the Children’s Center on the Mānoa campus for a limited number of two- to five-year-old children of students, faculty, and staff. The facility offers full-time and a limited number of part-week care to approximately 90 children each semester. The Children’s Center follows the UH calendar and is open from 8 a.m. to 5 p.m.

The developmental approach to early childhood education offers each child individual attention in an atmosphere that is conducive to building a strong self-concept, interactive skills, and an experiential base. Group sizes and adult-child ratios are favorable, and teachers are degreed and experienced in early childhood education. The program includes a wide range of opportunities for parental involvement. Applications should be made well in advance of the semester needed.

Counseling Services

Counseling and Student Development

Counseling and Student Development Center
Queen Lili‘uokalani Center for Student Services 312
2600 Campus Road
Honolulu, HI 96822
Tel: (808) 956-7927
Fax: (808) 956-9682

The challenges of choosing the right career, achieving or maintaining one’s independence, relating successfully to others, and leading a happy and successful life converge during a student’s college years. College life adds the concerns of exams, term papers, quizzes, and class reports. Even students who are prepared to do their best in college may experience problems. The Counseling and Student Development Center (CSDC) provides the following services to assist students.

Career Counseling

Students should choose their majors before they progress very far in their academic programs. Most students expect their academic studies to lead to specific careers upon graduation. Career counseling explores strengths and limitations, interests and values, personality and skills, and applies this understanding to developing academic and occupational plans. (See also “Mānoa Career Center.”)

Personal Counseling

Some people occasionally, even regularly, feel worried, unhappy, and depressed. Lack of confidence, fear, low self-esteem, inability to get along with others, loneliness, not being able to cope with people and situations, and similar problems can be discussed with one of CSDC’s professional counselors. All matters discussed in counseling are confidential and will not affect academic standing.

Psychiatric Consultation

People who find themselves seriously depressed, unable to control their behavior, or doing things they don’t understand...
may want and need psychiatric consultations. A talk with a counselor is required to determine whether psychiatric consultation is needed.

**Testing**

Testing is frequently used as part of counseling to help students understand themselves better and plan their careers. Counselors will discuss which tests to take and interpret them after they are scored. In addition, the Testing Office administers computer-based exams such as GRE, TOEFL, PRAXIS, and MCAT. To schedule an exam, go to the respective exam’s website, such as www.ets.org and www.aamc.org/students/applying/mcat/. There are also some paper-based exams, such as LSAT and MPRE, that are administered by the Testing Office.

**Outreach**

Workshops and seminars to promote personal development and academic success are offered throughout the year. Stress management, assertiveness, improving self-esteem, career and life planning, and coping with difficult people are just a few of the topics that are available. Sessions to address specific needs can be developed and conducted at the request of faculty or a group of students.

**Consultation**

CSDC provides consultation services for individual students, faculty, and groups that may need help in solving organizational problems, overcoming interpersonal difficulties, and planning staff development programs.

**Office of Judicial Affairs**

Queen Lili‘uokalani Center for Student Services 207
2600 Campus Road
Honolulu, HI 96822
Tel: (808) 956-4416
Fax: (808) 956-2537
Email: oja@hawaii.edu

Anchored by theoretical and philosophical approaches of adult development and education, the Office of Judicial Affairs is committed to ensuring the rights and upholding the responsibilities of students to create a safe and welcoming campus learning environment.

**Support Services**

**Office of Admissions-Campus Recruitment**

Queen Lili‘uokalani Center for Student Services 001
2600 Campus Road
Honolulu, HI 96822
Tel: (808) 956-7137
Fax: (808) 956-4148
Email: visituhm@hawaii.edu
Web: manoa.hawaii.edu/admissions/undergrad/visit/

Admissions Counselors work with school staff and community organizations to encourage their students to pursue higher education. Services that facilitate students’ undergraduate enrollment to UH Mānoa are provided by this office. In addition, the Office of Admissions offers campus tours and on-campus and off-campus recruitment programs to prospective undergraduate students and their families.

The Office of Admissions also coordinates the Student Ambassador program. This program creates a cadre of current UH Mānoa students to represent UH Mānoa at various campus events. Student Ambassadors escort visiting high school students to their classes, speak on student panels, give campus tours, participate in student forums, and mentor new freshmen.

Individuals and groups wishing to learn more about UH Mānoa undergraduate programs and resources may contact the Office of Admissions. Campus tours are offered daily (Monday through Friday) by appointment at: manoa.hawaii.edu/admissions/undergrad/visit/ or email: visituhm@hawaii.edu.

**Advocacy Office**

Queen Lili‘uokalani Center for Student Services 210
2600 Campus Road
Honolulu, HI 96822

The Advocacy Office falls under the UH Mānoa Chancellor’s Office. It provides assistance and advocacy for students, staff, and faculty at UH Mānoa through direct services, training, and consultation regarding various areas of civil rights, gender discrimination, and gender-based violence. The specific areas and services available to the UH Mānoa community are described below.

**Civil Rights Specialist**

Tel: (808) 956-4431
Fax: (808) 956-4541
Email: jln@hawaii.edu

The Civil Rights Specialist advises students, employees, applicants, and the public on the UH’s complaint process and procedures. The Civil Rights Specialist also advises and counsels students and employees on their rights under state and federal nondiscrimination laws.

The Civil Rights Specialist sets up alternative dispute resolutions and assists in resolving disputes through informal procedures.

The Civil Rights Specialist conducts training workshops systemwide that cover policies, procedures, and laws pertaining to civil rights, affirmative action, and other discrimination issues. The Civil Rights Specialist can be contacted in person, by phone, by mail, or through email.

**Gender Equity Specialist**

Tel: (808) 956-9977
Fax: (808) 956-4541
Email: rosejenn@hawaii.edu
Web: manoa.hawaii.edu/genderequity

The Gender Equity Specialist provides advocacy services to students, faculty, and staff members on matters relating to sexual harassment, sexual assault, domestic violence, stalking, and gender discrimination. Services include counseling; filing informal complaints through the university; developing long-term coping strategies; short and long-term case management; implementing vital safety plans for daily life; outreach to off-campus resources; and arranging informal resolutions. In addition, the Gender Equity Specialist can assist in filing formal complaints with the Equal Employment Opportunity/Affirmative Action (EEO/AA) Office of the Vice Chancellor for Students. The Gender Equity Specialist will answer questions, listen to complaints, offer advice on filing procedures, advocate for the best interests of the client, and help protect the grievant from retaliation.

In addition to individual advocacy, the Gender Equity Specialist offers comprehensive training to the campus population on interpersonal, inter-gender, and cross-cultural communication; the rights and responsibilities of students, faculty, and staff.
on issues relating to sexual harassment in academia; and interpretation of state and federal laws and guidelines. The Gender Equity Specialist is also intimately involved in raising awareness of gender-based violence and discrimination to the UH Mānoa community through workshops, seminars, and outreach.

Students, faculty, and staff members may contact the Gender Equity Specialist in person, by phone, by mail, or through email.

**Bridge to Hope**
Queen Liliʻuokalani Center for Student Services 211
2600 Campus Road
Honolulu, HI 96822
Tel: (808) 956-8059
Fax: (808) 956-9314
Email: bthinfo@hawaii.edu; gotkids@hawaii.edu
Web: www.hawaii.edu/bridgehope/
www.manoa.hawaii.edu/studentparents

Bridge to Hope (BTH) provides student support services to students with children. The Student Parents At Mānoa (SPAM) program serves all student parents while Bridge to Hope assists with on-campus student employment and other services to help welfare (TANF) participating students succeed in their educational goals. Bridge to Hope (TANF) is available on every UH campus. The systemwide coordinator is located at UH Mānoa in the Women’s Center.

**College Opportunities Program**
Queen Liliʻuokalani Center for Student Services 308
2600 Campus Road
Honolulu, HI 96822
Tel: (808) 956-6186
Fax: (808) 956-6837
Email: copuhm@hawaii.edu
Web: www.hawaii.edu/cop/

The College Opportunities Program (COP) offers a state-wide entry-level freshman program that provides a summer and first-year residential college experience. Its mission is to recruit, screen, select, and prepare Hawai‘i residents for a successful freshman year at UH Mānoa. The program recruits individuals who may not meet the requirements for regular UH Mānoa admission, are academically under-prepared, economically disadvantaged, non-traditional, or in need of a structured college entry. Selected students who participate in and meet the summer program requirements gain admission to the UH Mānoa in the fall semester.

**Graduate and Professional Access (GPA)**
Queen Liliʻuokalani Center for Student Services 413
2600 Campus Road
Honolulu, HI 96822
Tel: (808) 956-4642
Fax: (808) 956-9240
Email: maileg@hawaii.edu

Graduate Professional Access (GPA) addresses underrepresented students in graduate and professional degree programs. Through partnerships with current student support programs serving underrepresented ethnic minorities in the public school system, GPA conducts research on access to higher education, provides internship opportunities in STEM fields, service learning projects, and test preparation for entry into graduate degree programs. GPA provides support and retention activities that increase the entry and graduation rate of underrepresented students from graduate and professional degree programs that will diversify the workforce in Hawai‘i and the Pacific.

**Health Careers Opportunity Program**
Queen Liliʻuokalani Center for Student Services 414
2600 Campus Road
Honolulu, HI 96822
Tel: (808) 956-4642
Fax: (808) 956-9240
Email: hcop@hawaii.edu

The Health Careers Opportunity Program (HCOP) strives to build diversity in the health workforce by providing high school and college students from disadvantaged backgrounds an opportunity to develop the skills needed to enter, and graduate from health professions schools. The goal of HCOP is to increase the number of health professionals serving in areas of need in Hawai‘i and the Pacific. HCOP provides career exploration and shadowing; learning skills development; academic, financial aid, and personal counseling; preparation for college majors in health programs; and certification in first aid and CPR.

**KOKUA Program (Office for Students with Disabilities)**
Queen Liliʻuokalani Center for Student Services 013
2600 Campus Road
Honolulu, HI 96822
Tel: (808) 956-7511 (Voice/Text)
(808) 956-7612 (Voice/Text)
Fax: (808) 956-8093
Email: kokua@hawaii.edu
Web: www.hawaii.edu/kokua

The KOKUA Program provides disability access services to UH Mānoa students with documented physical and/or mental disabilities, e.g., health disabilities, hearing impairments, learning disabilities, mobility restrictions, psychological disabilities, visual impairments, etc. Services include alternate media, campus intervention, disability access counseling, early registration, faculty liaison, note-taking, sign language interpreting, technology access, testing accommodations, etc. Accessible on-campus transportation may be available. Students with disabilities who may require disability access services are strongly encouraged to contact KOKUA of their needs as far in advance as possible to ensure better campus access.

New students should contact KOKUA for program orientation at least two months prior to the start of their entering semester. Although KOKUA strives to ensure campus access for students with disabilities, it is necessary to note that the century old campus (located on hilly terrain) does pose architectural barriers that are being addressed by on-going projects.

The university is committed to ensuring equal access to the Mānoa experience for students with disabilities. Creating equal access is a shared responsibility involving the student, KOKUA, and the rest of the campus community.
Kua’ana Native Hawaiian Student Development Services
Office of Student Equity, Excellence and Diversity
Queen Lili’uokalani Center for Student Services 406
2600 Campus Road
Honolulu, HI 96822
Tel: (808) 956-2644
Email: kuumeaa@hawaii.edu

Kua’ana Native Hawaiian Student Development Services (Kua’ana) reflects the belief that higher education is a major factor in ensuring a better future for Hawaiians as individuals and as a people. Kua’ana focuses on encouraging and facilitating the entry of Hawaiian students into UH Mānoa and supports them in fulfilling their academic expectations through the development of new programs and the use of existing resources. Kua’ana services include scholarship awards, peer support, the Annual Hapai Pu Financial Aid Fair, a comprehensive community service program designed especially for Hawaiian students to interact with programs, projects and issues in the Hawaiian community, access to scholarship opportunities, and support for all Native Hawaiian students in STEM-related programs.

Lesbian, Gay, Bisexual, Transgender and Intersex Student Services
Queen Lili’uokalani Center for Student Services 211
2600 Campus Road
Honolulu, HI 96822
Tel: (808) 956-9250
Fax: (808) 956-9314
Email: lgbtq@hawaii.edu
Web: manoa.hawaii.edu/lgbt/index.html

Lesbian, Gay, Bisexual, Transgender, and Intersex (LGBTI) Student Services strives to maintain a safe and inclusive campus environment for all students of UH Mānoa regardless of their gender identity or sexual orientation. Our office offers a lending library on LGBTI issues and Queer Theory; a WiFi wireless hotspot; lounge to relax or bring your lunch; and meeting area to read or study. LGBTI Student Services also offers a range of educational, information and advocacy programs.

1. Crisis response and professional referral services relating to harassment and bias-related incidents, and other specialized needs.
2. Resources and individualized support on issues such as “coming out,” positive identity development, healthy relationships, and academic/career planning.
3. The Safe Zone Training Program for allies of LGBTI people raises awareness of LGBTI issues on campus and sharpens skills of allies to help end harassment. Ally participants receive a poster to display to indicate that they are part of a professional network of student support.
4. Student support via weekly drop-in groups for LGBTI and ally students and support for student run programs, events and clubs, including our weekly LGBTI and Ally Coffee Hour.
5. Educational programs and events, including National Coming Out Day in October; “The Gathering,” our annual UH Systemwide LGBTI conference; and Rainbow Graduation, which celebrates the achievements of our graduating LGBTI and ally students.

Office of Multicultural Student Services
Queen Lili’uokalani Center for Student Services 309
2600 Campus Road
Honolulu, HI 96822
Tel: (808) 956-7348
Fax: (808) 956-4622
Web: omss.ssc.hawaii.edu

The Office of Multicultural Student Services (OMSS) seeks to increase the awareness and appreciation of multicultural issues impacting UH Mānoa and the larger community. To accomplish this mission, OMSS seeks to (a) provide employment, training, and educational support to UH Mānoa students who wish to tutor and advise public school students; (b) address the problem of underrepresentation of minorities in higher education by recruiting students of underrepresented ethnic groups to apply for admission to UH; (c) coordinate special projects for under-served populations and communities; and (d) conduct UH Mānoa campus activities that identify and increase awareness of multicultural issues. OMSS also functions as a university partner with community agencies and organizations having similar goals of addressing ethnic-racial prejudice and discrimination in Hawai’i.

New Student Orientation
Campus Center 208
2465 Campus Road
Honolulu, HI 96822
Tel: (808) 956-3667
Email: nso@hawaii.edu
Web: www.hawaii.edu/nso

Before the spring and fall semesters begin, the Office of Student Life and Development offers New Student Orientation (NSO) sessions for incoming freshman and transfer students as well as their parents and family members. Student sessions have been designed to help prepare incoming students for their first year at UH Mānoa by providing important information about campus life and how to access campus resources. Students who attend NSO sessions also learn how to get involved in co-curriculum programs, engage with other new students, and network with current UH Mānoa students. Participants in parent sessions learn about the campus, available resources, and current policies to provide support and encouragement to their student during their time at UH Mānoa.

PAU (Prevention, Awareness, Understanding) Violence Program
Queen Lili’uokalani Center for Student Services 211
2600 Campus Road
Honolulu, HI 96822
Tel: (808) 956-8059
Fax: (808) 956-9314
Email: uhmpau@hawaii.edu

The PAU (Prevention, Awareness, Understanding) Violence Program provides training and education to students, faculty, and staff around issues of relationship violence, sexual assault, and stalking. Housed under the Women’s Center, the PAU Violence Program also coordinates a campus-community partner response team known as the Sexual Assault Task Force, which meets regularly to develop, implement, and evaluate victim-centered policies and procedure related to sexual and relationship violence issues for UH Mānoa students. PAU Violence also
provides crisis support and referrals to survivors of sexual and relationship violence.

**Senior Citizen Visitor Program–Nā Küpuna**  
Queen Lili‘uokalani Center for Student Services 413  
2600 Campus Road  
Honolulu, HI 96822  
Tel: (808) 956-4642  
Fax: (808) 956-9240  
Email: nakupuna@hawaii.edu

The Senior Citizen Visitor Program (SCVP) or Nā Küpuna, administered by Student Equity, Excellence, and Diversity (SEED), is available to residents of Hawai‘i who are age 60 years and older. The program allows senior citizens to participate in UH Mānoa classes offered during the fall and spring semesters, provided they have the consent of the instructor. Participation in SCVP entitles the visitor to use libraries and other UH facilities. Visitors are exempt from tuition; course credit is not awarded, and permanent records are not maintained. Senior citizens wishing to receive credit for courses must apply for admission to the university and must pay all tuition and fees.

**Office of Student Equity, Excellence, and Diversity**  
Queen Lili‘uokalani Center for Student Services 413  
2600 Campus Road  
Honolulu, HI 96822  
Tel: (808) 956-4642  
Fax: (808) 956-9240  
Email: seed@hawaii.edu  
Web: www.hawaii.edu/diversity/

The Office of Student Equity, Excellence, and Diversity (SEED) coordinates various programs, projects, and committees at UH Mānoa and other campuses that support diversity on our campus, including services for students with disabilities, Native Hawaiians, and ethnic groups underrepresented in higher education, women, lesbian, gay, bisexual, transgendered, and intersex students, academically talented students, as well as underprepared and disadvantaged students.

SEED administers several programs aimed at specific constituencies such as: Bridge to Hope, Children’s Center, College Opportunities Program, Graduate and Professional Access, Health Careers Opportunities Program, KOKUA, Kua‘ana Student Services, LGBTI Center, Office of Multicultural Students Services, Senior Citizen Visitor Program, and the Women’s Center. In addition, SEED has major grant-funded programs including: GEAR UP Mānoa Waipahu Complex, Mānoa Educational Talent Search, Nā Pua No‘eau, Program for Afterschool Literacy Support, PLACES (Place based Learning and Community Engagement in School) and the Sexual Violence Prevention Program.

**Women’s Center**  
Queen Lili‘uokalani Center for Student Services 211  
2600 Campus Road  
Honolulu, HI 96822  
Tel: (808) 956-8059  
Fax: (808) 956-9314  
Web: www.hawaii.edu/womenscenter/

The Women’s Center functions as a safe gathering place for students. It offers study lounges and meeting space, crisis support and referrals to survivors of relationship violence, sexual assault, stalking, academic and personal development workshops, educational lectures and programs, a reading resource library, and a comprehensive community information center.

The programs housed at the Women’s Center are: the Bridge to Hope Program; Student Parents at Mānoa; the Lesbian, Gay, Bisexual, Transgender and Intersex Student Services Office; the Sexual Violence Prevention Project; and the PAU Violence Program.

**Veterans Affairs**  
Queen Lili‘uokalani Center for Student Services 010  
2600 Campus Road  
Honolulu, HI 96822  
Tel: (808) 956-7737  
Fax: (808) 956-7830

The Veterans Affairs (VA) Certifying Official, located in the Office of the Registrar, assists military veterans and their dependents who are eligible for Montgomery GI Bill® benefits. Every semester, after students meet with their academic advisors, the VA Certifying Official certifies that students are enrolled in courses that are applicable to their VA-approved degree programs. Once certified, students will receive monthly benefits from the Department of Veterans Affairs.

**Visual and Performing Arts**

**University of Hawai‘i Art Gallery**  
Art Building, first floor  
2535 McCarthy Mall  
Honolulu, HI 96822  
Tel: (808) 956-6888  
Fax: (808) 956-9659  
Email: gallery@hawaii.edu  
Web: www.hawaii.edu/art/exhibitions+events/exhibitions/

One of the finest temporary exhibitions spaces in the nation, the UH Art Gallery is in the center of the Art Building’s bamboo court. Besides student and faculty exhibits, a varied exhibition program plays a significant role in providing information about the visual arts in a contemporary context. To enhance a specific theme, the installation design is completely changed for each major exhibition. The gallery has received numerous awards for the excellence of its exhibitions and publications.

Gallery hours are Monday through Friday from 10 a.m. to 4 p.m. and Sunday from noon to 4 p.m. Admission is free.

**Commons Gallery**  
Art Building, first floor  
2535 McCarthy Mall  
Honolulu, HI 96822  
Tel: (808) 956-6888  
Fax: (808) 956-9659  
Email: gallery@hawaii.edu  
Web: www.hawaii.edu/art/exhibitions+events/exhibitions/

The Commons Gallery serves an important role as a showcase for exhibitions of works by art faculty and students and visiting artists. The exhibits change bi-weekly.

Gallery hours are Monday through Friday from 10 a.m. to 4 p.m., and Sunday from noon to 4 p.m. Admission is free.
John Young Museum of Art
Krauss Hall, first floor
2500 Dole Street
Honolulu, HI 96822
Tel: (808) 956-7198
Email: mcadora@hawaii.edu
Web: www.hawaii.edu/johnyoung-museum/

The purpose of the John Young Museum of Art (JYMA) is to enhance the knowledge and appreciation of art, to further art education at the university for the benefit of students and the community, and to serve as a research center for scholars. Its collection represents the University of Hawai'i’s special interests in Asia and the Pacific region and was largely contributed by the late John Young, whose vision and inspiration for a museum on the campus became the university’s first museum. The JYMA grounds include a courtyard with a water garden and reflecting pool. (JYMA is currently closed for roof and facility maintenance. Re-opening TBA.)

John F. Kennedy Theatre
1770 East-West Road
Honolulu, HI 96822
Tel: (808) 956-7655 (box office) (Voice/Text)
(808) 956-7677
Web: www.hawaii.edu/kennedy/

The John F. Kennedy Theatre is home to the classes and productions of the Department of Theatre and Dance and hosts touring productions from around the globe whenever possible. This 600-seat facility is among the best in the world for presentations of Asian and Western theatre and dance. The department is internationally known for its English language presentations of kabuki and jingju (Beijing “opera”). Kennedy Theatre serves as a laboratory for student technicians, actors, dancers, designers, musicians, choreographers, and directors.

A typical season at Kennedy Theatre might include the annual Dance Concert, a classic Western play, an Asian theater production, youth theatre, and a contemporary/experimental play. Auditions are open to all UH Mānoa students interested in learning about performance or production.

The Earle Ernst Lab Theatre, an intimate 100-seat house that serves as an adjunct performing space, features student productions, late-night theatre, workshops, and experimental presentations.

UH Mānoa students are entitled to special discount prices on tickets for most productions at Kennedy Theatre through funding from their student activity fees. Students must present a validated UH Mānoa photo ID to obtain the specially priced tickets. Tickets are available at the box office approximately two weeks prior to the opening of each production.

Mae Zenke Orvis Auditorium
2411 Dole Street
Honolulu, HI 96822
Tel: (808) 956-8742 (recorded information)
(808) 956-7756
Fax: (808) 956-9657
Email: uhmusic@hawaii.edu
Web: manoa.hawaii.edu/music/

With the best acoustics of any concert hall its size in the state, the Mae Zenke Orvis Auditorium is the site of numerous recitals and concerts. The auditorium seats 400, providing an intimate yet formal setting for soloists and small ensembles.

The auditorium is used throughout the year for performances of both Western and ethnic music by the music department, the UH Mānoa community, and local and international artists.

Tickets for most music department events may be reserved by calling (808) 95-MUSIC (68742) or may be purchased in advance at the UH Mānoa Campus Center Information Desk. Remaining tickets will be available at the door one hour before each performance. Many events are free.

Call Music at Mānoa Events Information for recorded concert information, or visit the music department’s website.

Recreation

Intercollegiate Athletics
Physical Education/Athletics Complex
1337 Lower Campus Road
Honolulu, HI 96822
Tel: (808) 956-6580 (student affairs)
(808) 956-3388 (student academic services for athletics)
(808) 956-7523 (sports information)
(808) 956-7301 (athletics director)
(808) 956-6508 (football)
(808) 956-6247 (baseball)
(808) 956-6501 (men’s basketball)
(808) 956-4505 (men’s volleyball)
(808) 956-4498 (women’s sports and other men’s sports)
Fax: (808) 956-4637

Intercollegiate sports at the NCAA Division I level provide the UH Rainbow Warriors and Rainbow Wahine the opportunity to compete against the nation’s finest teams. The football team competes in the Mountain West Conference. The men’s volleyball, men’s and women’s swimming and diving, and indoor track and field teams compete in the Mountain Pacific Sports Federation. All other men’s and women’s teams compete in the Big West Conference.

Men’s sports include baseball, basketball, football, golf, swimming and diving, tennis, and volleyball. Women’s sports include basketball, cross-country, golf, soccer, softball, swimming and diving, tennis, indoor and outdoor track and field, indoor volleyball, sand volleyball, and water polo. The sailing team and cheerleading squad are open to both men and women. Intercollegiate athletics operates under a policy of gender equity. See “Campus Policies and Information” for details.

Student Recreation Services
Physical Education/Athletics Complex 200
1337 Lower Campus Road
Honolulu, HI 96822
Tel: (808) 956-7694/6468 (lower campus office)
Tel: (808) 956-5490 (Warrior Recreation Center)
Tel: (808) 956-7523 (sports information)
Tel: (808) 956-6247 (baseball)
Tel: (808) 956-6501 (men’s basketball)
Tel: (808) 956-4505 (men’s volleyball)
Tel: (808) 956-4498 (women’s sports and other men’s sports)
Tel: (808) 956-4637
Fax: (808) 956-3388 (student academic services for athletics)
Fax: (808) 956-7523 (sports information)
Fax: (808) 956-7301 (athletics director)
Fax: (808) 956-6508 (football)
Fax: (808) 956-6247 (baseball)
Fax: (808) 956-6501 (men’s basketball)
Fax: (808) 956-4505 (men’s volleyball)
Fax: (808) 956-4498 (women’s sports and other men’s sports)
Fax: (808) 956-6247 (baseball)
Fax: (808) 956-6501 (men’s basketball)
Fax: (808) 956-4505 (men’s volleyball)
Fax: (808) 956-4498 (women’s sports and other men’s sports)

Student Recreation Services provides a variety of recreational activities and services.

Informal Recreation (including the Warrior Recreation Center at the Campus Center and the athletic facilities in the Lower Campus): Athletic facilities are available for students to use for the following activities: basketball, volleyball, swimming, tennis, table tennis, badminton, and jogging. The Warrior Recreation Center contains strength and cardiovascular equipment, basketball and volleyball courts, and an indoor track. A schedule of hours is provided at the start of each semester.
Warrior Fitness Program (at the Warrior Recreation Center): Non-credit classes and activities are available through this program, which is designed to promote a healthy, balanced lifestyle. The fitness and wellness classes, which are offered throughout the day, provide the perfect stress relief from school work. For more information, contact us at rechi@hawaii.edu.

Intramural Sports: Organized leagues and tournaments are scheduled for various team and individual sports. Sports include flag football, basketball, volleyball, soccer, and softball. Visit us at www.imleagues.com for more information and registration.

Outdoor Education: Non-credit classes and activities are offered and available through this program. Classes/activities include surfing, body boarding, sailing, hiking, snorkeling, stand-up paddling, SCUBA, kayaking, and more. Check our website at www.facebook.com/UHMRecServ for details.

Outdoor Equipment/Sports Equipment Rental and Check Out: Equipment is for rent to students, faculty, and staff with a valid UH ID and a credit card for the deposit. Equipment for rent includes surfboards, kayaks, body boards, mask/snorkel/fins, backpacks, coolers, camping tents and picnic canopies, volleyball kits, flag football and softball equipment, dodge balls, tug-of-war ropes, and more.

Rec Sports Council Activities: The Rec Sports Council provides weekly (usually Friday night) activities throughout the school year. These activities include many traditional sports as well as some less familiar albeit fun and entertaining ones. Check them out on www.facebook.com/recsportsboard.

Campus Center Complex

Campus Center Ticket Information and ID Office
Campus Center 212
2465 Campus Road
Honolulu, HI 96822
Tel: (808) 956-7235 (Information Hotline)
(808) 956-7236
Fax: (808) 956-3917
Web: www.hawaii.edu/campuscenter

Campus Center Complex (CCC), the university’s student union, includes Hemenway Hall and the Campus Center buildings and serves as the “community center” of UH Mānoa. It provides facilities for programs, services, and opportunities offered by the Campus Center Board (CCB) and other student organizations, resulting in a comprehensive plan for the community life of the campus.

The complex includes an information desk/ticket window, computer lab, dining rooms, ID card services, catering services, lounges, game room, banking facilities, barber shop, photocopying service, RIO center for student organizations, graphics services, an open market, and meeting rooms of various sizes, including a ballroom.

Many student organizations are housed in the two buildings, providing opportunities for practical experience in leadership development and social responsibility through student-run programs, activities, and services. In addition to these volunteers, more than 70 part-time student assistants within the student union are employed in diverse and challenging jobs vital to the operation of the complex. These jobs offer valuable work experience to UH Mānoa students in a supportive atmosphere, encouraging and rewarding personal responsibility and growth while supporting the educational and developmental mission of UH Mānoa.

Student Organizations

Office of Student Life and Development
Campus Center 208
2465 Campus Road
Honolulu, HI 96822
Tel: (808) 956-8178
Fax: (808) 956-4810
Web: www.manoa.hawaii.edu/studentlife/

Learning and development take place in many ways on a college campus. Office of Student Life and Development (SLD) offers opportunities to make new friends, try new activities, test new ideas, and acquire new skills. SLD coordinates a variety of student-administered programs, activities, and services that make out-of-class time a positive educational experience. SLD also provides leadership training through a variety of credit and noncredit classes.

More than 200 student, faculty, and staff organizations are registered with SLD. Organizations that register with SLD have access to campus facilities and other resources. These organizations represent varied interests and activities including academic, professional, political, social, religious, recreational, and service groups. A complete list of organizations and detailed information on joining a Registered Independent Organization (RIO) is available from SLD.

SLD assists UH’s six chartered student organizations in achieving their goals and objectives; provides administrative services for more than 200 RIOs; fosters educational, recreational, cultural, and social programs and activities; provides trained, experienced advisors who teach leadership and organizational skills; and promotes responsible citizenship.

Associated Students of the University of Hawai‘i

Campus Center 211A
2465 Campus Road
Honolulu, HI 96822
Tel: (808) 956-4822
Fax: (808) 956-5360
Web: asuh.hawaii.edu

The Associated Students of the University of Hawai‘i (ASUH) is the chartered student organization whose membership includes all full-time (12 credit hours or more per semester) classified undergraduates. It is governed by the ASUH Senate, elected annually each spring. The senate is made up of four
executive officers and 34 senators who represent students in the various academic colleges and students at large. Any ASUH member in good academic standing may seek elective office.

The senate works toward improving the quality of undergraduate student life and represents the needs, interests, and concerns of its constituents through participation in UH policy-making and advisory committees, research and lobbying action on campus and community issues, and the sponsorship and funding of a variety of programs and activities.

**Board of Publications**
2445 Campus Road
Hemenway 107
Honolulu, HI 96822
Tel: (808) 956-7043 (Ka Leo O Hawai‘i - Editorial & Advertising)
Fax: (808) 956-9962
Web: www.kaleo.org (Ka Leo O Hawai‘i - Online)
www.kaleo.org/hawaii_review/

The Board of Publications (BOP) is the publisher for UH Mānoa student publications. This 14-member governing board consists of nine students, three faculty/staff, one alumni, and one professional member. BOP publishes the campus student newspaper, Ka Leo O Hawai‘i and the student literary journal, Hawai‘i Review.

Student publications offer student volunteers the opportunity for personal and pre-professional development experience, including personnel and business management, public contact, writing, journalism, marketing, and graphic arts.

**Broadcast Communication Authority**
Hemenway 220B
2445 Campus Road
Honolulu, HI 96822
Tel: (808) 956-4841
Fax: (808) 956-4810
Email: bca@hawaii.edu
Web: ktuh.org (KTUH online)

The Broadcast Communication Authority (BCA) consists of 9 voting members, including students, faculty, staff members, and community representatives. The board governs the student-run campus radio station, KTUH–90.3 FM, and the Student Video and Filmmakers’ Association. By radio, video, film, and the World Wide Web, the BCA provides a variety of cultural, educational, informational, and musical programs for the university community. Through the operation of the 24-hour radio station and the production of locally televised video programs, BCA offers students opportunities to manage, produce, and engineer radio and video/filmmaking projects.

**Campus Center Board**
Campus Center 313
2465 Campus Road
Honolulu, HI 96822
Tel: (808) 956-9670
Fax: (808) 956-4810
Web: www2.hawaii.edu/~ccbac/Activities_Council/Home.html

The Campus Center Board (CCB) is the governing, policy-making authority for the programs, services, and facilities of the Campus Center Complex, the college union facility on campus. The 17-member board represents various campus constituencies: students, faculty, staff, and alumni. CCB serves its constituents in two ways: a multifaceted activities program and a comprehensive array of services in Campus Center and Hemenway Hall.

CCB also sponsors programs through its Activities Council committees, which plan recreational activities, educational support programs, dances, personal wellness events, concerts, and cultural programs.

**Graduate Student Organization**
Hemenway 212
2445 Campus Road
Honolulu, HI 96822
Tel: (808) 956-8776
Fax: (808) 956-4810
Web: gso.hawaii.edu

The Graduate Student Organization (GSO) represents the academic interests of over 5,000 graduate students attending UH Mānoa, the flagship campus of the UH System.

The GSO places a particular emphasis on fostering excellence in research at both the PhD and master levels. As such, the GSO endeavors to facilitate research initiatives from graduate students through its Grants and Awards program.

The GSO also provides input on all issues affecting UH graduate students and the UH Mānoa campus. It has representatives sitting on over 40 university committees and participates in a wide variety of graduate student, campus, and community events.

**Student Activity and Program Fee Board**
Hemenway 220C
2445 Campus Road
Honolulu, HI 96822
Tel: (808) 956-4842
Fax: (808) 956-4810
Web: www.manoa.hawaii.edu/sapfb/

The Student Activity and Program Fee Board (SAPFB) is an eleven-member board composed of students, faculty, and staff members that makes recommendations to the Mānoa Vice Chancellor for Students regarding the allocation of the student activity and program fee. This fee supports a variety of co-curricular activities, programs, and services. SAPFB solicits and reviews requests for funding from campus organizations, departments, and programs that are not funded by other chartered organizations.
Tuition, Fees, and Expenses

Cashier’s Office
Queen Lili‘uokalani Center for Student Services 105
2600 Campus Road
Honolulu, HI 96822-2205
Tel: (808) 956-7554
Fax: (808) 956-2098

Tuition and fees are charged according to the number of credit hours carried by the student. For regular, Outreach College Continuing Education, and Summer Session tuition schedules, refer to the following page. Auditors (those enrolled in a course for no credit) must pay the same tuition and fees as students enrolled for credit. For tuition purposes only, a full-time student is any student enrolled for 12 or more credit hours.

The regular tuition to be charged is determined by the degree status of the student and not by the level of the courses taken. For example, students who have earned a baccalaureate degree will be charged graduate tuition, except for students admitted for a second baccalaureate degree. Students admitted to the law or medical school will be charged the stated tuition for that school.

Medical, law, graduate nursing, or graduate business students concurrently enrolled in Graduate Education must pay the stated tuition for the medical school, law school, nursing school, or business college.

All tuition and fee charges at the UH campuses are subject to change in accordance with requirements of state law and/or action by the Board of Regents or the UH administration.

**Tuition Deposit**

All new, transfer, and returning classified undergraduate students are required to make a tuition deposit of $200. All new medical and law students are required to make a partial advance tuition payment of $250. Scholarship/fellowship recipients are not exempt from this deposit, if applicable. This tuition deposit 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 UH Mānoa). Continuing classified students are not required to make the tuition deposit.

**Additional Fees and Expenses**

**Caps and Gowns**
Caps, gowns, and master’s and doctoral hoods are required for participation in commencement ceremonies. Caps and gowns are available for purchase from the UH Mānoa Bookstore.

**Outreach College Fees**
Students registered in courses offered by Outreach College pay additional tuition and fees. For information, see their website at www.outreach.hawaii.edu or contact Outreach College at ochelp@hawaii.edu.

**Credit by Examination**
A $15-per-course fee is assessed at the time of application.

**Diplomas and Certificates**
A charge of $30, payable at time of application, is assessed for each bachelor’s degree, advanced degree, and professional certification.

**Late Registration Fee**
A $30 late registration fee is assessed when a student registers during the late registration period.

**Replacement of Laboratory Equipment**
For broken or lost items, the cost of replacement is assessed.

**Returned Checks**
Payments tendered to UH Mānoa or any department therein, and returned from the maker’s bank for any reason (e.g., insufficient funds, closed bank account, incorrect bank informa-
# Tuition, Fees, and Financial Aid

## Regular Tuition Schedule 2015–2016

<table>
<thead>
<tr>
<th></th>
<th>Full-Time per semester</th>
<th>Part-Time per credit hour</th>
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</thead>
<tbody>
<tr>
<td><strong>Undergraduate</strong></td>
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<tr>
<td>Resident</td>
<td>$5,172</td>
<td>$431</td>
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<tr>
<td>Nonresident</td>
<td>$15,348</td>
<td>$1,279</td>
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<tr>
<td>150% Resident</td>
<td>$7,758</td>
<td>$646.50</td>
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<tr>
<td><strong>Graduate (including post baccalaureate unclassified students)</strong></td>
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<tr>
<td>Resident</td>
<td>$7,116</td>
<td>$593</td>
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<tr>
<td>Nonresident</td>
<td>$17,160</td>
<td>$1,430</td>
</tr>
<tr>
<td>150% Resident</td>
<td>$10,674</td>
<td>$889.50</td>
</tr>
<tr>
<td><strong>Graduate Business (MBA, MHRM, MACC, MS-FE)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resident</td>
<td>$10,116</td>
<td>$843</td>
</tr>
<tr>
<td>Nonresident</td>
<td>$17,952</td>
<td>$1,496</td>
</tr>
<tr>
<td>150% Resident</td>
<td>$15,174</td>
<td>$1,264.50</td>
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<tr>
<td><strong>Graduate Nursing</strong></td>
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<td></td>
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<tr>
<td>Resident</td>
<td>$11,196</td>
<td>$933</td>
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<tr>
<td>Nonresident</td>
<td>$21,240</td>
<td>$1,770</td>
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<tr>
<td>150% Resident</td>
<td>$16,794</td>
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<tr>
<td><strong>Law (JD)</strong></td>
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<tr>
<td>Resident</td>
<td>$10,440</td>
<td>$870</td>
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<tr>
<td>Nonresident</td>
<td>$21,192</td>
<td>$1,766</td>
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<tr>
<td>150% Resident</td>
<td>$15,660</td>
<td>$1,305</td>
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<tr>
<td><strong>Law (LLM)</strong></td>
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<td></td>
</tr>
<tr>
<td>Resident</td>
<td>$20,844</td>
<td>$1,737</td>
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<tr>
<td>Nonresident</td>
<td>$20,844</td>
<td>$1,737</td>
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<tr>
<td><strong>Medicine</strong></td>
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<tr>
<td>Resident</td>
<td>$17,448</td>
<td>$1,454</td>
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<tr>
<td>Nonresident</td>
<td>$34,620</td>
<td>$2,885</td>
</tr>
<tr>
<td>150% Resident</td>
<td>$26,172</td>
<td>$2,181</td>
</tr>
</tbody>
</table>

### Additional Student Fees

- Board of Publications—all students: $13
- Student Health Fee—all students: $98
- Campus Center Board—all students: $15
- Campus Center Operations & Recreation—all students: $175
- Student Athletic Fee—all students: $50
- Student Activity and Program Fee: $11
- Broadcast Communication Authority—all students: $3
- UPASS Transportation Fee: $40
- (does not include medical and law students)
- Associated Students of the University of Hawai‘i Classified Undergraduates carrying 12 or more credit hours per semester: $5
- Graduate Student Organization—all graduate students (does not include medical and law and students): $15
- Professional Fees
  - Undergraduate Business: $500
  - Undergraduate Engineering (Sophomore to Senior): $500
  - Undergraduate Nursing*: $1,000
  - Undergraduate Dental Hygiene*: $500
  - Undergraduate/Graduate Architecture: $500
- *Fee applies for no more than six semesters
- Applied Music Fee (Students enrolled in applied music)
  - One credit (Revised 07/15): $100
  - Two or more credits (Revised 07/15): $200
- Course and Lab Fee
  - 500+: $50
- Students enrolled in selected natural science courses will be assessed a laboratory fee ranging from $25 to $100 per course (ASTR, B (Revised 09/15), BIOL, BOT, CHEM, ICS, MICR, PHYS (Revised 09/15), and ZOOL course(s). See the Records and Registration website at manoa.hawaii.edu/records/tuition_fees.html#sci.
- Students enrolled in selected College of Tropical Agriculture and Human Resources (CTAHR) courses will be assessed a laboratory fee ranging from $25 to $100 per course (ANSC, BE, FAMR, FDM, FSHN, MBBE, NREM, PEPS, and TPSS). See the Records and Registration website at manoa.hawaii.edu/records/tuition_fees.html#ctahr for the listing.
- Students enrolled in selected Academy for Creative Media (ACM) courses (ACM) will be assessed a course fee of $175 or $200 per course. See the Records and Registration website at manoa.hawaii.edu/records/tuition_fees.html#acm (Revised 07/15)
- Art Course and Lab Fee
  - varies

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Students enrolled in studio art courses (ART), regardless of the number of studio art courses, will be charged a single $35 flat fee per semester. Students enrolled in studio art courses will be assessed a laboratory fee ranging from $35 to $340 per course (Art Studio Core, Ceramics, Drawing/Painting, Digital Media, Fiber, Glass, Photography, Printmaking, and Sculpture). See the Records and Registration website at manoa.hawaii.edu/records/tuition_fees.html#art for the listing.

## Outreach College (Outreach Online Courses) Tuition Schedule

Please refer to the Outreach Online website at www.outreach.hawaii.edu for current charges.

### Outreach College–Summer Session Tuition Schedule (per credit hour)

<table>
<thead>
<tr>
<th>Courses numbered 499 and below</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident</td>
<td>$408</td>
</tr>
<tr>
<td>Nonresident</td>
<td>$408</td>
</tr>
<tr>
<td><strong>Courses numbered 500 and above</strong></td>
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</tr>
<tr>
<td>Resident</td>
<td>$550</td>
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<tr>
<td>Nonresident</td>
<td>$550</td>
</tr>
<tr>
<td><strong>Graduate Business (MBA, MHRM, MACC, MS-FE)</strong></td>
<td></td>
</tr>
<tr>
<td>Resident</td>
<td>$820</td>
</tr>
<tr>
<td>Nonresident</td>
<td>$820</td>
</tr>
<tr>
<td>150% Resident</td>
<td>$820</td>
</tr>
<tr>
<td><strong>Graduate Nursing</strong></td>
<td></td>
</tr>
<tr>
<td>Resident</td>
<td>$868</td>
</tr>
<tr>
<td>Nonresident</td>
<td>$868</td>
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<tr>
<td>150% Resident</td>
<td>$868</td>
</tr>
<tr>
<td><strong>Law (JD)</strong></td>
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<tr>
<td>Resident</td>
<td>$811</td>
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<tr>
<td>Nonresident</td>
<td>$811</td>
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<tr>
<td><strong>Law (LLM)</strong></td>
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<tr>
<td>Resident</td>
<td>$1,622</td>
</tr>
<tr>
<td>Nonresident</td>
<td>$1,622</td>
</tr>
</tbody>
</table>

Additional Summer Session fees—such as course fees for applied music, institutes, and other special programs—are outlined on the Outreach College website: www.outreach.hawaii.edu.

## Outreach College–Credit Extension Tuition Schedule (per credit hour)

<table>
<thead>
<tr>
<th>Courses numbered 499 and below</th>
<th>2015–16*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident</td>
<td>$431</td>
</tr>
<tr>
<td>Nonresident</td>
<td>$1,279</td>
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<tr>
<td>150% Resident</td>
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<tr>
<td><strong>Courses numbered 500 and above</strong></td>
<td></td>
</tr>
<tr>
<td>Resident</td>
<td>$593</td>
</tr>
<tr>
<td>Nonresident</td>
<td>$1,430</td>
</tr>
<tr>
<td>150% Resident</td>
<td>$889.50</td>
</tr>
<tr>
<td><strong>Graduate Business (MBA, MHRM, MACC, MS-FE)</strong></td>
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<tr>
<td>Resident</td>
<td>$843</td>
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<tr>
<td>Nonresident</td>
<td>$1,496</td>
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<tr>
<td>150% Resident</td>
<td>$1,264.50</td>
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<tr>
<td><strong>Graduate Education (EdD)</strong></td>
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<tr>
<td>Resident</td>
<td>$653</td>
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<td>Nonresident</td>
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<td>150% Resident</td>
<td>$797.50</td>
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<tr>
<td><strong>Graduate Nursing</strong></td>
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<tr>
<td>Resident</td>
<td>$933</td>
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<td>Nonresident</td>
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<td>150% Resident</td>
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<td><strong>Graduate Law (JD)</strong></td>
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<tr>
<td>Resident</td>
<td>$870</td>
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<td>Nonresident</td>
<td>$1,766</td>
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<tr>
<td>150% Resident</td>
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<tr>
<td><strong>Graduate Law (LLM)</strong></td>
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<tr>
<td>Resident</td>
<td>$1,737</td>
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<tr>
<td>Nonresident</td>
<td>$1,737</td>
</tr>
</tbody>
</table>

Outreach College tuition is determined by the level of the course and not the degree status of the student, except for Law, Graduate Business and Graduate Nursing courses.

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All tuition and fee charges at UH campuses are subject to change in accordance with requirements of state law and/or by the Board of Regents or the UH administration. See “Campus Policies” section for definition of resident, nonresident, and 150% resident.
tion) will result in a $25 charge and a hold will be placed on your account. DO NOT place a STOP PAYMENT on checks. A stop payment on a check is considered a returned check and is not acknowledged as an official drop from courses or withdrawal from UH Mānoa. The university reserves the right to no longer accept check payments for a student account that has had three (3) or more checks returned for any reason.

**Special Examination**
Various fees are assessed. Refer to Testing Office at www.manoa.hawaii.edu/counseling/testing_office/.

**Student Transcripts**
Regular processing is $5 per copy, and rush processing is $15 per copy.

**Payment of Tuition and Fees**
Full payment for tuition and fees must be made or be enrolled in the MyUH installment payment plan by the end of the 10th calendar day of the semester. You are responsible for payment of tuition and fees incurred because of registration.

UH Mānoa offers a 4 month, 3 month, or 2 month installment payment plan for the fall and spring terms only. The non-refundable enrollment fee is $30 per student per semester per plan to participate. Detailed information is available at myuh.hawaii.edu/myuh/IPP_FINAL.pdf.

All checks or money orders should be made payable to University of Hawai‘i for the exact amount due. The student’s UH number should be written on the memo section (bottom left) of the check. Students who have their tuition being paid by a third party sponsoring agency (e.g., World Health Organization, East-West Center, Ali‘i Like, Vocational Rehabilitation, U.S. Armed Forces Branch, State of Hawai‘i Department of Education, etc.), must submit their letters of financial guarantee, purchase orders, or authorization letters from their sponsor to the UH Mānoa Cashier’s Office by the payment deadline.

University grants and scholarships will be posted to the student’s account.

**Financial Obligations**
Students who have not met their financial obligations (traffic fines, library fines, locker fees, lab breakage charges, transcript fees, loans, rental contracts, etc.) to the satisfaction of UH Mānoa may be denied a variety of enrollment services including registration, withdrawal, and transcripts. Notification of the financial obligation may appear on transcripts.

Enrollment at UH Mānoa signifies consent to, and acceptance of all policies and procedures governing enrollment, including financial liability. If student’s third party sponsoring agency does not make payment for any reason after being billed by the university, the student will be responsible for paying any unpaid balances. Students who fail to remit payment when due, agree to pay UH Mānoa all reasonable costs for collection, to include collection agency, attorney’s, and court fees.

Copies of the delinquent financial obligations policy and procedures are available for inspection at the Office of the Vice Chancellor for Students and the UH Mānoa Cashier’s Office.

**Refunds of Tuition and Fees**

**Regular Tuition and Fees**
Tuition and special course fees are refunded as indicated:

- A 100 percent refund of tuition for complete withdrawal or decrease in credits made on or before the 10th calendar day of the semester, unless otherwise stipulated by federal regulations.
- A 50 percent refund of tuition for complete withdrawal or decrease in credits made between the 11th to the 21st calendar days of the semester, unless otherwise stipulated by federal regulations.
- No refunds of tuition for complete withdrawal or decrease in credits from the 22nd calendar day of the semester (start of the 4th week of instruction), unless otherwise stipulated by federal regulations.

Student activity fees are only refundable before the first day of instruction, or if you completely withdraw from all UH campuses during the 100 percent period. Penalties apply even if payment for tuition and fees has not been made at the time registration status is changed.

After students have secured all required approvals, the withdrawal or change in registration must be processed according to instructions in the online Registration Guide at www.hawaii.edu/myuh/manoa/. In no case shall a refund be made when a student fails to follow these instructions within two weeks of the date of change in registration (e.g., withdrawal, change in status, or change in tuition rate).

Refunds are made by the UH Mānoa Cashier’s Office after the procedures for complete withdrawal from UH Mānoa have been followed. See the “Undergraduate Education” and “Graduate Education” sections of this Catalog.

Federal regulations mandate a refund policy for all students who are receiving federal financial aid and who process a complete withdrawal before 60% of the semester has elapsed. A detailed refund policy is available in the Registration Guide.

If you paid by credit card within the past 90 days, your credit card may be credited the refund amount in the order of credit card used. For payments older than 90 days, your refund will be deposited directly into your designated eRefund account or mailed to your current mailing address on file at UH Mānoa.

If you paid by cash or check, your refund will be deposited directly into your designated eRefund account or mailed to your current address on file at UH Mānoa. Students should verify and update their mailing address and permanent address, as all refund checks will be mailed to their address in the following order: 1) Mailing Address, and 2) Permanent Address (if mailing address is null or expired). Mailing address corrections can be made online through MyUH, and permanent address corrections made by mailing the Student Data Change Form at manoa.hawaii.edu/records/pdf/data_change.pdf or completing it in-person at the Office of the Registrar, Queen Lili‘uokalani Center for Student Services, Room 010 (ground floor).

UH Mānoa offers students the option to have refunds direct deposited into a bank account. View information on eRefunds at www.hawaii.edu/news/docs/eRefunds.pdf.

**Outreach College Extension and Summer Sessions Tuition and Fees**
See the Outreach College website at www.outreach.hawaii.edu for refund information.

**Residency for Tuition Purposes**
Students who do not qualify on the first day of instruction as bona fide residents of the state of Hawai‘i for tuition purposes pay the nonresident tuition. An official determination of residency status is made at the time of application. Applicants
may be required to provide documentation to verify residency status. Once classified as a nonresident, students continue to be so classified during their enrollment at UH Mānoa until they present satisfactory evidence to the residency officer that proves residency. For definition of Hawai‘i residency for tuition purposes, statutory exemptions, etc., refer to the “Campus Policies” section.

**WICHE Programs**

Bachman Annex 9-6 (Rev. 09/15)
2444 Dole Street
Honolulu, HI 96822
Tel: (808) 956-6625

UH Mānoa participates in three exchange programs of the Western Interstate Commission for Higher Education (WICHE).

Through the Western Undergraduate Exchange (WUE) program, a limited number of students from participating states who are not residents of Hawai‘i may enroll at UH Mānoa in designated programs at a 150% resident tuition (plus other fees that are paid by all students). WUE students do not pay the higher charge for nonresident tuition. Hawai‘i residents may enroll under the same terms in designated institutions and programs in other participating states.) Hawai‘i residents may obtain information about WUE programs in other states from the WICHE Certifying Officer for Hawai‘i (see the location above); from participating institutions; or at www.wiche.edu/wue.

The John A. Burns School of Medicine participates in the WICHE-administered Professional Student Exchange Program (PSEP). PSEP allows legal residents of the states of Alaska, Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, North Dakota, Utah, Washington, and Wyoming (states without a public professional school in a health care field to enjoy Hawai‘i-resident status for admission and tuition purposes at UH Mānoa. Students who are pursuing graduate degrees in Asian and Comparative Philosophy, Asian Theatre and Dance, Communication and Information Sciences, East Asian Languages and Literatures, Natural Resources and Environmental Management, Oceanography, Second Language Studies, Tropical Entomology, Tropical Medicine, Tropical Plant and Soil Sciences, and Urban and Regional Planning are eligible for resident tuition under the WICHE Program. Students who receive certification from their home states receive preferential admission consideration and, if accepted, are charged Hawai‘i-resident tuition rates. To be certified for PSEP, students must apply to the WICHE certifying officer in their home state before October 15 the year prior to admission. State eligibility requirements vary, and the number of students funded by each state depends upon appropriations by the state’s legislature. For addresses of state certifying officers, visit www.wiche.edu/psep.

UH Mānoa also participates in the WICHE Regional Graduate Program. Under this arrangement, legal residents of the other WICHE member states (AK, AZ, CA, CO, ID, MT, ND, NV, NM, OR, SD, UT, WA, WY) will be charged resident tuition if they are exceptional candidates for admission in specific graduate programs. Approved fields are Asian and Comparative Philosophy, Asian Theatre and Dance (MA and MFA, and PhD), Communications and Information Sciences (PhD), East Asian Languages and Literatures (MA and PhD), Natural Resources and Environmental Management (MS and PhD), Oceanography (MS and PHD), Pacific Island Studies (MA), Second Language Studies (MA and PhD), Tropical En-

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**Financial Aid**

Financial Aid Services
Queen Lili‘uokalani Center for Student Services 112
2600 Campus Road
Honolulu, HI 96822
Tel: (808) 956-7251
Fax: (808) 956-3985
Email: finaid@hawaii.edu
Web: www.hawaii.edu/fas

Scholarships, grants, loans, and work-study programs are provided to eligible students by the federal and state governments and private donors. Some programs are based on merit or academic records, and others on demonstrated financial need. UH Mānoa encourages students who believe they may not be able to enroll or continue their education because they lack financial resources to apply for financial aid through the Financial Aid Services office.

The federal government is a major source of grants, loans, and work-study funds to undergraduate and graduate students. With the enactment of the Higher Education Amendment of 1992, applicants are **required** to submit the Free Application for Federal Student Assistance (FAFSA) form to the federal processor for the determination of eligibility for federal, state, and some institutional program funds.

If you have been selected for verification, you must submit federal tax transcripts, a verification worksheet, and other forms as required by Financial Aid Services. Students interested in applying for financial aid may visit our website at www.hawaii.edu/fas/ for financial aid information and forms.

The offer of aid may include funds from public and private sources, depending on the applicant’s residency, degree of need, date of file completion, major, class level, and availability of funds. Recipients are advised to read their rights and responsibilities, including the description of the type of funds awarded and disbursement procedures on the financial aid website.

**Deadlines**

The priority date is March 1; however, applications will be accepted after that date with awards offered contingent on available funds.

**Types of Financial Aid**

**Scholarships**

Scholarships are awarded to exceptional UH Mānoa students on the basis of academic excellence and exceptional promise; students in specific majors, colleges, or schools; Hawai‘i residents; students of a particular class standing; or students with demonstrated financial need. Noteworthy scholarships include the following among others:

**B+ Scholarship**

Scholarships awarded to incoming freshmen and continuing students who complete a rigorous high school curriculum with
a minimum overall GPA of 3.0 (4.0 scale) at a Hawai‘i public school, and are residents of the state of Hawai‘i with preference to those with financial need.

**Manoa Merit Scholarships**

Scholarship awarded to high achieving incoming freshmen students with a 3.5 cumulative high school GPA and evidence of superior academic achievement or creative endeavor. These awards are renewable up to 8 consecutive semesters. Students must maintain an overall 3.0 GPA. For more information, visit manoa.hawaii.edu/admissions/undergrad/financing/index.html.

**Manoa Chancellor’s Scholarship**

Scholarships awarded to incoming freshman students who have graduated from a Hawai‘i high school with a minimum overall GPA of 3.5 (4.0 scale) and a 1600 SAT or 25 ACT score. Evidence of superior academic achievement or creative endeavor and record of academic, co-curricular, and community service activities. For more information, visit www.hawaii.edu/fas/info/rcms_scholarships.php#Chancellors.

**Regents Scholarship**

Sixteen scholarships for full tuition plus $4,000 per year are awarded to entering first-year students who are residents of Hawai‘i and have a combined SAT score of at least 1950 and a high school GPA of 3.5 or better. This scholarship is renewable for up to four years upon maintenance of eligibility and includes a one-time academic travel grant of up to $2,000. For more information, visit www.hawaii.edu/raps.

**Presidential Scholarship**

Seven scholarships for full tuition plus $4,000 per year awarded to juniors who have a minimum cumulative GPA of 3.7, have demonstrated sustained academic progress, show superior academic achievement or creative endeavor, and are residents of Hawai‘i. This scholarship is renewable for one year upon maintenance of eligibility and includes a one-time academic travel grant of up to $2,000. For more information, visit www.hawaii.edu/raps.

**ROTC Scholarships**

Scholarships are awarded for up to four years to qualified applicants by the UH Mānoa Army ROTC and Air Force ROTC programs. Scholarships cover tuition, books, laboratory fees, and a $300-500 tax-free monthly allowance during the school year. Contact respective campus ROTC programs (see “ROTC Programs”).

**Other Scholarships**

Other tuition scholarships for residents and nonresidents are awarded to classified students who participate in special programs and/or meet criteria set by colleges or schools. Contact the specific department for details.

The tuition scholarship program is subject to change by the Board of Regents.

**Grants**

A grant is a type of federal or state financial aid that does not have to be repaid. Usually, these awards are based on financial need.

**UH Opportunity Grants**

UH Opportunity Grants are awarded annually to qualified undergraduate and graduate students who qualify on the basis of financial need as determined by the FAFSA available at the Financial Aid Services office.

**Federal Pell Grant**

This award to undergraduate students is based solely on financial need as determined by congressional methodology. The amount received depends on the degree of need and schedule of awards as determined by the federal government. FAFSA required. Eligibility for the Pell Grant is limited to 12 full-time semesters. Contact the Financial Aid Services office for details.

**Federal Supplemental Educational Opportunity Grant**

This award is provided to undergraduate students with exceptional financial need who are also eligible for the Federal Pell Grant. FAFSA required. Contact the Financial Aid Services office for details.

**Teacher Education Assistance for College and Higher Education (TEACH) Grant**

For undergraduate and graduate students enrolled in the College of Education who intend to teach full-time in high need subject areas for at least four years at schools that serve students from low-income families. Must have a cumulative GPA of 3.25.

**Other Grants**

Students are encouraged to contact a reference librarian at the nearest college for other publications listing grants for students. For additional information on these and other grants, check with the Financial Aid Services office or specific departments.

**Loans**

A financial aid package based on demonstrated financial need may include a long-term, low-interest federal or state loan. Repayment of these loans begins after a student graduates, withdraws from school, or drops to less than half-time.

**Federal Perkins Loan.** This loan is available to students with financial need. FAFSA required. Contact the Financial Aid Services office for details.

**Federal Direct Loans.** These loans, the Federal Direct Loan (subsidized and unsubsidized), the Federal Direct PLUS Loans for parents of undergraduate dependent students, and the Federal Direct Graduate PLUS loan for graduate students are available through the U.S. Department of Education. Interest accrued may be subsidized by the federal government, depending on the degree of financial need. FAFSA required. Contact the Financial Aid Services office for details.
State Higher Education Loan. This loan is available to bona fide residents of the state of Hawai‘i who demonstrate financial need. FAFSA required.

Short-Term, Emergency Loans. These institutional loans are designed to meet temporary or emergency financial needs of registered students. Contact the Financial Aid Services office, the Graduate Student Organization, or specific departments.

Other Loans. Students are encouraged to contact the reference librarian at the nearest library for other publications listing private loans for students. For additional information on these and other loan programs, check with the Financial Aid Services office, UH Foundation, or specific departments.

Work-Study
The Federal Work-Study (FWS) Program enables students to meet part of their financial need through part-time employment. The program is funded by the federal government with matching funds from UH Mānoa. Employment may be on or off campus with nonprofit organizations. FWS earnings are not calculated as income when applying for financial aid.

Generally, students are provided the work-study program as a part of their financial aid package. The Center for Career Development and Student Employment coordinates the work-study program. Job opportunities are available in many fields and require skills ranging from entry-level to highly technical. Community service jobs are also available, including tutoring positions in the America Reads and Counts Challenge. For further information, see the “Student Life” section of this Catalog.

Graduate Assistantships
UH Mānoa offers assistantships to graduates of accredited institutions of higher learning who have satisfactory scholastic records, an adequate undergraduate background in the major program, and evidence of a high level of English proficiency. Graduate assistants, chosen on a competitive basis, serve as part-time teaching or research assistants. A graduate assistant must be enrolled in a classified master’s or doctoral graduate program (see Master’s Degree programs and Doctor of Philosophy programs). Graduate certificate, PBU (post-baccalaureate unclassified), law, medicine, Shidler College of Business (master’s only) students are not eligible for graduate assistantships. All graduate assistants must be registered for and must complete at least 6 credit hours of degree-related course work each semester, while holding the assistantship. Moreover, they must maintain at least a 3.0 GPA to continue in the position. The maximum course load typically is 9 credit hours. The period of service for each year for teaching assistants is typically from two weeks prior to the beginning of instruction through spring commencement; research assistants normally serve for 11 months. Graduate assistants are awarded tuition exemptions, but they are not exempt from the general fees, special course fees listed in the Catalog, and the Graduate Student Organization fee. Applications should be sent to the chair of the appropriate department before February 1. Each application must be accompanied by three letters of recommendation from former professors or employers.

Information on assistantships and application forms may be requested from the chair of the appropriate graduate program.

Graduate Fellowships and Scholarships
Applicants are advised that UH Mānoa has joined the Council of Graduate Schools in approving the following resolution:

Acceptance of an offer of financial aid (such as a graduate scholarship, fellowship, traineeship, or assistantship) for the next academic year by an actual or prospective graduate student completes an agreement that both student and graduate school expect to honor. In those instances in which the student accepts the offer before April 15 and subsequently desires to withdraw, the student may submit in writing a resignation of the appointment at any time through April 15. However, an acceptance given or left in force after April 15 commits the student not to accept another offer without first obtaining a written release from the institution to which a commitment has been made. Similarly, an offer by an institution after April 15 is conditional on presentation by the student of the written release from any previously accepted offer.

The Office of Graduate Education has available general information on fellowship competitions open to American graduate students and administered by outside foundations or agencies. For application purposes, it is important to distinguish between (1) those awards made directly by the sponsoring agency to individual students and administered by an institution, and (2) those awards made by the sponsoring agency to an institution to be awarded, in turn, to students for study at the specific institution.

Standards of Satisfactory Academic Progress for Recipients of Financial Aid
Satisfactory Academic Progress. To be eligible for federal, state, and specific institutional aid programs, you must meet all three Satisfactory Academic Progress (SAP) standards regardless of whether you have received financial aid previously. For more information, visit www.hawaii.edu/fas/policies/sap.php.

GPA Standard. Maintain minimum GPAs. Undergraduate students must maintain a minimum cumulative grade point average of 2.0 or as required by the student’s specific program of study. Graduate students must maintain a minimum cumulative grade point average of 3.0 or as required by the student’s specific program of study. The cumulative grade point average includes all courses attempted by degree level at UH Mānoa. Students on academic suspension are not eligible for financial aid.

Pass Rate Standard. Students must pass at least 67% of all credit hours attempted during the academic year at UH Mānoa. Measurement of each student’s pass rate will occur at the completion of each spring semester. Grades of W, F, I, NG, and repeated courses are not considered to be adequate grades for completion.

Maximum Credit Hour Standard. Undergraduate students must complete their undergraduate degree with less than 180 attempted credit hours (e.g., 150% above the 120 minimum credits for a baccalaureate degree). Master’s program students must complete their degree within 4-10 semesters based on the minimum number of credits required. Doctoral students must complete their degree within 14 semesters (includes master’s degree credits). All courses you register for or transfer to UH Mānoa are included in the maximum credit hour standard.

Enrollment Status for Recipients of Financial Aid
Courses that do not count toward a student’s degree cannot be used to determine enrollment status for financial aid purposes. Students may receive aid to repeat a previously passed course one additional time.
Awards in the first category are generally made by national organizations and allow students to choose their institution of affiliation. Applications are submitted by students to the sponsor, usually in early fall preceding the year graduate study is to begin. The National Science Foundation Graduate Fellowships program is an example.

Awards in the second category, which vary in source from federal to local, include a large number of programs. At UH Mānoa, nominations for these awards are generally made by the graduate programs that are eligible. In some cases (e.g., Fulbright awards), the student may apply through Graduate Education. Students are urged to exercise their initiative to explore the various possibilities. Initial inquiries should be directed to the chair of the program.

Information on fellowships is available by checking the following website: manoa.hawaii.edu/graduate/content/fellowships.

UH Mānoa Scholarships

The scholarships listed below are only a selection of the more than one thousand scholarships, fellowships, and other awards available to UH students. More information is available from academic advisors, the UH Mānoa Library, Financial Aid Services, or the chairs of departments. Information is also available at www.star.hawaii.edu.

School of Architecture
Allen R. Johnson-Roy C. Kelley Architectural Research Travel Scholarship
Construction Specifications Institute Scholarship Fund
Hawai‘i Architectural Foundation Scholarship
HonBlue Architectural Grant
American Institute of Architects Honolulu Chapter Scholarship
School of Architecture Alumni Association Scholarship
R. Richard Morris Memorial Scholarship
Sam Chang Scholarship at the School of Architecture
School of Architecture Practicum Fund
Barry John Baker Scholarship
Donald G. Deer Memorial Scholarship
Leighton Liu Scholarship

Colleges of Arts and Sciences
Arts and Sciences Advisory Council Awards
Aspect Technology Fund Grants (open to all UH Mānoa students, administered by Arts and Sciences)
K. S. Cheng Memorial Scholarship Fund
Colleges of Arts and Sciences Alumni Association Scholarship
Colleges of Arts and Sciences Alumni Association Study Abroad
Richard and Mildred Kosaki Awards
Anna Toy Ng Memorial Scholarship
Rodney P. Santos Scholarship
The John Young Scholarship in the Arts

Academy for Creative Media
Grace Abernethy Screenwriting Award
Ito-en Production Support Fund
Cinema Italiano, Hawai‘i Future Filmmaker Award
HIFF SMART Exchange Award
Roy & Hilda Takeda Student Support Fund

Department of American Studies
Brown-Denney Award
Glen Grant Endowed Scholarship Fund
Goto of Hiroshima Foundation Endowed “Fumiko Kaya” Scholarship
Japanese Women’s Society Foundation Endowed “Kokoro” Scholarship
James M. McCutcheon Memorial Endowed Scholarship Fund

Department of Anthropology
Jocelyn Armstrong Merit Award in Anthropology
Carol Eastman Scholarship (undergraduates majoring in Anthropology)
Richard W. Lieban Endowed Scholarship for Anthropology
Mānoa Achievement (tuition) Scholarship

Department of Art and Art History (for current majors only)
Jean Charlot Foundation Scholarship
Geraldine P. Clark Memorial Fellowship
David H. and Doris C. Crowell Award
Stephen Doue Scholarship
Helen Gilbert-Bushnell Memorial Award
H. John Heide Fellowship in Art (graduate)
Honolulu Printmakers Scholarship
Kelly Kao Memorial Scholarship
Shore Hedge Lipsher Memorial Award (undergraduate and graduate)
Matt Smith Award
Diane Sullivan Memorial Scholarship
Yun T. and Chen Chuan Tu Student Travel Endowment in Art

College of Arts and Humanities
Diamond Head Theatre’s Burnett/Selleck Scholarship
Danny Kaleikini/Kāhala Hilton Scholarship
Hands of Hope

Department of Botany
Isabella Aiona Abbott Undergraduate Botany Fund for Excellence
Beatrice Krauss Fellowship Fund in Botany
Charles H. Lamoureux Fellowship in Plant Conservation Fund
Torrey-Degener-Rock Scholarship Endowed Fund
Winona Pi’ilani Char Endowed Scholarship Fund

Department of Chemistry
Giichi Fujimoto Scholarship
Shigeo and Hatsu Iwamoto and Paul J. Scheuer Scholarship
William W. Y. Young Fellowship in Chemistry

School of Communications
Blom Journalism Book Award
Pierre L. Bowman Memorial Scholarship
Carol Burnett Fund for Responsible Journalism
James H. Couey Jr. Memorial Scholarship
Pat Pitzer Memorial Scholarship
Eugene Tao Scholarship
Louise Hess Miller Travel Fund
Ed Sheehan Scholarship in Journalism
McNeil Wilson Communications Fund
Bonnie J. Wiley Memorial Fund
John Luter Memorial Fund
F. R. Moulton Memorial Fund
Sharon Ishida/UH Journalism Alumni Award

Department of Communicology (formerly speech)
Department of Communicology Service Award
Joseph Fielding Smith Memorial Award
Department of Communicology Outstanding Graduate Student Award
Department of Communicology Outstanding Graduate Teaching Assistant Award

Department of East Asian Languages and Literatures
The James T. Araki Endowed Scholarship in Japanese Literature
Mānoa Achievement (tuition) Awards Undergraduate Majors
Mānoa Achievement (tuition) Scholarship Graduate Education
Red Mandarin and Lady Yi-suen Shen Tuition Scholarship in Chinese Language

Department of Economics
Burnham O. Campbell Dissertation Award in Economics (graduate)
Chris Grootaert Scholarship
Dolores Ann Sanchez Memorial Fund
The Hung Family Fellowship (graduate)
Professors Henry M. K. Mok and James Mak Endowed Scholarship (graduate)
Seiji Naya Student Awards Fund (graduate)

Department of English
Grace K. Abernethy Fund in Creative Writing (graduate)
The Academy of American Poets Prize
The James and Eleanor Frierson Endowed Scholarship Fund
Ernest Hemingway Memorial Fund (undergraduate)
Red Mandarin and Lady Yi-suen Shen Tuition Scholarship (graduate)
The Elizabeth McCutcheon Endowed Scholarship for Literary Studies (graduate)
Patsy Sumie Saiki Endowment Fund (short story)
Stephen C. Stryker and William H. Stryker Prize For Creative Writing
Yun T. Chen Chuan Tu Student Travel Endowment in English

Department of Ethnic Studies
Roland Kotani Scholarship
Sarah and Francis Sogi Smithsonian/Hawai'i Fellowship Scholarship

Department of Geography
Neal M. Bowers Memorial Award
Abraham P'ianai'a Graduate Scholarship
H. J. Wiens Memorial Award (graduate)

Department of History
Jerry H. Bentley Endowed Scholarship in World History (graduate)
Hung Family Endowed Scholarship (graduate)
John F. Kennedy Memorial Fellowship in History (doctorate)
Daniel W. Y. Kwok Endowed Fund (graduate)
Mānoa Achievement (tuition) Scholarship Graduate Education
James M. McCutcheon Memorial Endowed Scholarship for History (graduate)
Idus Newby Award (doctorate/junior faculty)
Barbara Bennett Peterson Graduate Student Support Fund (graduate)
Robert K. Sakai Award for East Asian History (doctorate)
Ishi Sakurai Scholarships (undergraduate)

Department of Indo-Pacific Languages and Literatures
Samuel H. Elbert Graduate Scholarship
Amos P. and Edna Lee Leib Scholarship for Graduate Study of Literature of the Pacific
Jack Haven Ward Graduate Scholarship

Department of Information and Computer Sciences
Fred and Annie Chan Scholarship

College of Languages, Linguistics, & Literature
Hands of Hope Foundation Scholarship

Department of Languages and Literatures of Europe and the Americas
(French)
Mira Baciu-Simian Memorial Fellowship
Anita Hecht Scholarship
Betsy Tan Scholarship
(Russian and Russian Area Studies)
Frederick and Ella Wiswell Scholarships
(Spanish)
Linda Rudoy Memorial Scholarship

Library and Information Science Program
Beta Phi Mu-Xi Chapter Scholarship
Robert and Rina Blair Memorial Award
Mary Edward Professional Award
Friends of the Hilo Library Scholarship
Friends of the Library (Hawaiʻi) Scholarships
LIS Professional Award
Ralph R. Shaw Memorial Award
H. W. Wilson Scholarship

Department of Mathematics
Kern-Clark Memorial Award Fund

Spark M. Matsunaga Institute for Peace and Conflict Resolution
Jacob Peace Memorial Award (UH system)
Nobumoto Tanahashi Peace Scholarship (UH Mānoa)
Nobumoto Tanahashi Peace Fellowship (UH Mānoa)

Department of Music
Louella Shipwright Buchenau Applied Music Scholarship (piano)
Ernest Chang Piano Studio Scholarship (piano)

Chancellor Virginia Hinshaw Hawaiian Music Scholarship
Chen Composition Scholarship
Chinese Music Scholarship
Cooke Chamber Music Endowed Scholarship
Cooke Piano Scholarship
Beau Gard Dixon Memorial Scholarship (ethnomusicology)
Friends of Music at Mānoa Scholarship
Reiko Fujimoto Scholarship (voice, piano)
Graduate Fellowship in Ethnomusicology
Gregory C. Goetz Music Scholarship (music education, choral)
Gregg Hagiwara Memorial Scholarship (percussion, gamelan)
Gustafsson-Ritenband Scholarship
Fritz Hart Foundation Scholarship (performance or composition)
Hawaiʻi Music Teachers Association Scholarship
Heide Student Assistance in Music
Honolulu Chinatown Lions Club Piano Scholarship (piano)
Honolulu Piano Teacher's Association Scholarship (piano)
Geoffrey Lloyd Memorial Scholarship (voice or musicology)
Ellen Masaki Endowed Piano Scholarship (piano)
Donald Matsumori Music Award (research)
Mary Fayweather Montano Scholarship (Hawaiian music)
Music Department Scholarships
Musical Moments with June Chun Scholarship
Aya Noda Piano Scholarship (piano)
The Andrew Nyborg Fellowship in Music (graduate)
Nesta O. Obermer Chamber Music Scholarship (string instruments)
Orvis Endowed Scholarship (voice)
Orvis Vocal Student Grants (voice)
William Pfeiffer Memorial Scholarship (voice or ethnomusicology)
Presser Foundation Scholarship
Ho'oulu Richards Scholarship (hula and Hawaiian chant)
Ruth Small Memorial Scholarship (performance)
Stephenson Endowed Music Scholarship
Allen Trubitt Memorial Fund
Peter Coraggio Memorial Scholarship (piano)
UH Band Tuition Waivers
UH Symphony Orchestra Tuition Waivers
Richard Vine Scholarship (voice)
Chie Yamada Scholarship (ethnomusicology)

College of Natural Sciences
Pearl Scholarship
Allen and Nobuko Zecha Foundation Endowed Scholarship

Department of Philosophy
David L. Hall Prize (undergraduate)
Ashok Kumar Malhotra “Seva” Award (undergraduate or graduate)
Uehiro Graduate Student Essay Award in East Asian Philosophy (graduate)
Wing-Tsit Chan Graduate Fellowship (graduate)

Department of Physics and Astronomy
Vincent Peterson Scholarship

Department of Political Science
Harry Friedman Memorial Award
Thomas Hale Hamilton Memorial Award
Carl Knobloch Award
Richard Kosaki Award
Norman Meller Award
Jorge Fernandes Memorial Fellowship
Glendon Schubert and James Neal Schubert Political Science Endowed Scholarship

Public Administration Program
Herman S. Doi Fellowship
D. William Wood Endowed Scholarship for Pacific Island Health Administrators

Department of Religion
Buddhist Studies Scholarship Fund
Henry Gengo and Riu Wakai Memorial Scholarship
Department of Second Language Studies
Elizabeth Carr Holmes Scholarship
Craig Chaudron Memorial Fund
Ruth Crymes Memorial Grant
SLS Graduate ‘Oihana Maika’i Fund for Professional Development
Charlene Sato Memorial Scholarship
UH Bilinski Fellowship in Second Language Studies

Department of Sociology
Gary Sakihara Scholarship (Graduate)
Bernard Hormann Award (Graduate and Undergraduate)
Joseph Seldin Travel Award (Graduate)

Department of Theatre and Dance
Department of Theatre and Dance Tuition Scholarships in Theatre and Dance

Department of Urban and Regional Planning
Achievement Scholarship Graduate Education Urban and Regional Planning
American Planning Association–Hawai‘i Chapter Scholarship
Kem Lowry Award
SSFM International Graduate Scholarship in Planning
R. M. Towill Corporation Fellowship

Department of Zoology
Edmondson Fellowships and Research Grants
E. Alison Kay Scholarships
Jessie D. Kay Memorial Fellowships

Shidler College of Business
Accounting Student Educational Support
Association of Government Accountants of Hawai‘i Endowed Scholarship Fund
Roland Casamina and House of Finance, Inc. Endowed Scholarship
T. C. and Angeli Chan Endowed Scholarship Fund
Chew Jay Family Endowed Scholarship Fund
Stanley and Sandy Lee Chin Endowed Scholarship Fund
Dennis Ching Memorial/First Interstate Bank Foundation Program
The T. N. Ching Scholarship Fund
The City Mill Company, Ltd./C. K. Ai Foundation Scholarship
CW Associates, CPAs Scholarship
Deloitte & Touche Scholarship Endowment Fund
Florence Hutson Driskel Endowed Scholarship Fund
Darleen Morioka Dyer Scholarship Endowment
Enterprise Rent-A-Car Foundation Shidler Scholarship Fund
Ernst & Young LLP Accounting Scholarship
Vance Fawcett Scholarship
Financial Executives International-Hawai‘i Chapter Scholarship
First Insurance Company of Hawaii Endowed Scholarship for Excellence
The Oscar and Rosetta Fish Fund for Excellence
Eddie Flores, Jr. & Elaine Flores Endowed Scholarship
Financial Planning Association of Hawai‘i Scholarship
Freeman Foundation Asian Study Abroad Program
Fujii and Rodriguez Endowed Scholarship Fund
Candes Meijide Gentry Endowed Scholarship
Dick Gourley Scholarship
Hawai‘i Accounting Education Foundation Scholarship Endowment Fund
Hawai‘i Association of Public Accountants O‘ahu Chapter Endowed Scholarship
Hee Chew Family Endowed Scholarship
Thomas W. S. Hee Endowed Scholarship at the Shidler College of Business
Ralph and Joyce Hook, Jr. Endowed Scholarship Fund
Hawaii Society of Certified Public Accountants Scholarship
Institute of Internal Auditors Hawai‘i Chapter Scholarship
Ralph S. Inouye Co., LTD. Endowment in honor of Professor K. K. Seo
William R. Johnson, Jr. Study Abroad Endowment
Leonard and Rebecca Kamp Endowed Scholarship
Kauai NIMBA 1 Scholarship

KPMG LLP Scholarship for Accounting Excellence
Daniel B. T. & Evelyn Y. Q. Lau Shidler Graduate Fellowship Endowment
Terry Lee Scholarship for Excellence
Robert H. Y. Leong & Company Endowed Scholarship
May and Richard Leung endowed Scholarship Fund
Master’s of Accounting Endowed Scholarship Fund
Todd Kiyo Matsuda Endowed Scholarship
Barbara McKeever Scholarship
The Marian Miccio Memorial Scholarship Fund
Grace Mizuko Miyawaki Scholarship
Jack and Zelie Myers Endowed Scholarship Fund
Hideo Noguchi International Scholarship Fund in the Center for Japanese Global Investment & Finance
Sandra T. Ohara Scholarship Honoring Phyllis Kawano Aoki
Patrick Oki Endowed Scholarship Fund for Beta Alpha Psi
The Hisaji Onoye Endowed Scholarship Fund
Michael and Judy Pietsch Endowed Study Abroad Scholarship
PKF Scholarship for Excellence in Accounting
C. Dudley Pratt, Jr. Endowed Scholarship
Saltchuck DL EMBA Scholarship (Young Brothers, Hawaiian Tug & Barge, Maui Petroleum, Hawaii Petroleum, Minit Strop, Aloha Air Cargo and Saltchuck Resources Scholarship Fund for the Distance Learning EMBA Program)
Shidler College of Business Alumni Association Endowed Scholarship Fund
Shidler College of Business Endowed Scholarship for Future Leaders
Shidler College of Business Entrepreneurship Scholarship Fund
Shidler CIMBA Scholarship
Shidler Day MBA Scholarship
Shidler College of Business General Scholarships and Awards
Shidler VEMBA Scholarship
The Society of Human Resources Management Scholarship Fund
Ulrike and Toufiq Siddiqi Student Travel Endowment
Sales & Marketing Executives International Honolulu Memorial Scholarship in Honor of Stephanie Lee Uyeda
Sukamoto Foundation Scholarship
The Marge Sylvester Scholarship Fund
Mamoru and Atiko Takitani Foundation Scholarship
Howard and Vivian Todo Scholarship Fund
The Kazuo and Akiyo Totoki Memorial Scholarship
Keith Vieira Ho‘owaiwai a Ho‘ona‘auo Scholarship Endowment
The Mike and Deborah Washofsky Endowed Graduate Executive Education Scholarship
Frank Watase Endowed Scholarship Fund
J. Watumull Merit Scholarship Fund
Jhamandas Watumull Business Scholarship
J. Edwin Whitlow Endowment
Eiro and Alice Yamada Endowed Scholarship

College of Education
Mitsuo Adachi Scholarship for Graduate Study in Education
Toshiko and Shiro Amioka Scholarship
Au and Hew Family Endowed Scholarship Fund
Joseph and Sumie Kaneshiro Bishop Scholarship
Gladys Ainoa Brandt and Bank of Hawai‘i Scholarship
Frank Brown Memorial Scholarship
James and Abigail Campbell Foundation Scholarship in Teacher Education
Robert L. and Brigite M. Campbell Endowed Fund in Science Education
May Tenney Castle Memorial Graduate Fellowship
The Henry and Dorothy Castle Memorial Early Childhood Education Scholarship
College of Education Alumni Scholarship
Alice, Sumy, and Carl Daeufer Family Scholarship in Teacher Education
Peter and Patricia A. Dunn-Rankin Scholarship
Stephanie Feeney Scholarship in Early Childhood Education
Evelyn Siu Foo Scholarship in Education
Royal T. and Aurora A. Fruehling Fellowship for Graduate Study in Education
Hawaiian Telcom Math and Science Scholarship
William Randolph Hearst Foundation Scholarship
Sibyl Nyborg Heide Scholarship
Teruo and Violet Ibara Scholarship
Andrew W. S. and Jennie L. In Scholarship for Graduate Studies
Stanley and Agnes Ing Family Scholarship
Stella Lau In Memorial Scholarship
Dorothy M. Kahananui Scholarship in Music Education
Alexander Poki Kali Memorial Scholarship
Arthur R. King, Jr. Scholarship Fund
Hirokai, Elaine and Lawrence Kono Memorial Endowed Scholarship
Mary Cho Lee Scholarship Fund
Patricia B. Lopes Memorial Scholarship Endowment in Elementary Education
Colonel Willys E. Lord and Sandina L. Lord Scholarship Fund in the COE
Edith Ling Louis and James Lun Louis Scholarship Fund
Yuriko K. and Cheong Lum Endowed Scholarship
McNerny Foundation Scholarships in Teacher Education
Kenneth and Laura Onomoto Miyoshi Endowed Scholarship
Yoshiaki and Asako Furuya Nakamoto Scholarship for Undergraduate Study
Takasuke and Tome Nomura Family Scholarship
Frances M. J. and Alexander L. Pickens Scholarship in Secondary Education
Elzie and Shiro Saito Student Assistance Fund
Cornelia F. and Roy Sakamoto Scholarship Endowment
Scholarship in Special Education
Kathryn Au Shen Endowed Fund
Esther M. Sato and Jean M. Sakihara Scholarship Endowment IMO
Loren I. Shishido
Yoshimitsu Takei Family Endowed Scholarship Fund
Ellen Tom and Chow Loy Tom Endowed Scholarship
James I. and Ella M. (Ohta) Tomita Endowed Scholarship
Hazel Van Allen Scholarship in Teacher Preparation
Harry C. and Nee-Chang Wong Foundation Scholarship
Pearl N. and Paul T. Yamashita Scholarship in Special Education
Ginny H. L. Young Education Scholarship

**College of Engineering**
Thomas Keola Ahsing Endowed Scholarship Fund
Ajitomi Family Scholarship
ARC Foundation Scholarship
Everett E. Black Scholarship
Beavers Heavy Construction Scholarship (graduate)
Bretzfla Foundation ARCS Graduate Scholarship (doctoral)
CH2M Hill Scholarship
Fred & Annie Chan Scholarship
Chan Scholarship for Transfer Students
Chi Epsilon Alumni Association Scholarship
The Dr. Arthur N. L. Chiu Scholarship in Civil Engineering
Chris K. Davis Endowed Scholarship
Engineering Alumni Association Scholarship
The John S. Farmer (CCPE) Scholarship
Lorenzo C. Fruto Memorial Scholarship (graduate)
Gary I. and Lori S. Funasaki Endowed Scholarship
Mateo L. P. Go Scholarship Fund
Hawai‘i Pacific Steel Framing Alliance (graduate)
Hawai‘i Telcom Fellowship (graduate)
Harold J. Heide Scholarship in Mechanical Engineering
Sam and Yukino Hirota Scholarship
Ronald N. S. Ho and Associates, Inc. Fund—Electrical Engineering
Eric N. Jacobsen Memorial Scholarship
Douglas & Mary Kamiya Endowed Scholarship in Civil Engineering
Dennis & Marilyn Kanemura Scholarship
Regent Donald Chang Won Kim Scholarship
Frederick M. Kresser ARCS Scholarship (graduate)
George W. T. Loo Scholarship
Walter & Jeane Lum Scholarship
Larry Matsuo Scholarship
Murabayashi Foundation Engineering Scholarship
Nan Chul Shin Foundation Scholarship
Native Hawaiian Science & Engineering Mentorship Program Alumni Scholarship
Oceanic Cable Endowed Scholarship
Sandford Oda Memorial Scholarship
Pacific Alliance—Siemens Building Technologies
Charles H. Sawa Scholarship
Clinton Shelton Memorial Scholarship in Civil Engineering
SSFM International, Inc. Scholarship
SSFM International, Inc. Freshman Scholarship Fund
Structural Engineers Association of Hawai‘i Scholarship (graduate)
Richard M. Towill Scholarship
Roswell M. and Jeanie Towill Civil Engineering Scholarship
Roswell M. and Jeanie Towill Graduate Research Scholarship (graduate)
TRW Graduate Fellowship (graduate)

**Hawai‘iʻinuiākea School of Hawaiian Knowledge**
AES Hawai‘iʻinuiākea Scholarship
Center for Hawaiian Studies Scholarship
Gladys `Aiona Brandt Scholarship Fund
John Dominis Holt Scholarship
Dorothy M. Kahananui Scholarship
Red Mandarin and Lady Yi-suen Shen Tuition Scholarship
Na Lei ʻOiwi Scholarship
Pacific Islands Institute Hawaiian Studies Graduate Scholarship
Lokomaika‘iokalani Snakenberg Graduate Scholarship in Hawaiian Language

**William S. Richardson School of Law**
Advocates for Public Interest Law Summer Grant
Ashford Memorial Scholarship
Audubon Society Award
Hazel G. Beh Scholarship for Part-Time Students
Best Second-Year Seminar Paper
Bruce C. Bigelow Memorial Award
Frank Boas Award for Best Paper on a Pacific/Asian Topic
Augusto Camara Memorial Scholarship
Class of 1977 Memorial Scholarship
Class of 1985
Eleanor Stivers Cohen Summer Fellowship in Juvenile Justice and Human Rights
Sam L. Cohen International Human Rights Fellowship
Gregory Conlan Memorial Award
ELP Summer Grant Program
John S. Edmunds Award for Civility and Vigorous Advocacy
Jackie Mahi & Bruce T. Erickson Scholarship
Starn O’Toole Marcus &Fisher Scholarship
Dr. Wendell and Susan Foo Ulu Lehua Scholarship
Lawrence C. Foster Scholarship
Wallace Fujiyama Memorial Scholarship
Gender Equity Summer Fellowship
Hyman M. and Betty D. Greenstein Memorial Scholarship
HSBA Natural Resources SYS Award
HSBA Real Property SYS Award
Allen Hoe Scholarship
James K. Hoening Family Court Clerks Scholarship
Chris Iijima Memorial Scholarship
Jarman Environmental Law Fellowship
C. Jeppson Garland Memorial Award
Hyman M. and Betty D. Greenstein Memorial Scholarship
HSBA Natural Resources SYS Award
HSBA Real Property SYS Award
Allen Hoe Scholarship
James K. Hoening Family Court Clerks Scholarship
Chris Iijima Memorial Scholarship
Jarman Environmental Law Fellowship
C. Jeppson Garland Memorial Award
George & Evelyn Johnson Scholarship
Michiko and Kaoru Kashiwagi Japanese Studies Grant
Lawrence H. Kono Memorial Award
James Koshiba Public Service Scholarship
Law Faculty Fund For Student Excellence
Law School Achievement Scholarship
Law School Alumni Association Scholarship
Carol Mon Lee Scholarship
Bernard Levinson Award
Lum Law Review Scholarship
Francell Marbeth Mukihana Marquardt Scholarship for Pacific Island Students
Hartley McGehee Family Law Susan McKay Moor Court Award
McCorriston Miller Mukai MacKinnon Scholarship
Patsy T. Mink Legislative Fellowship
Carl Mirikitani, Jr. Valedictory Prize
Clifford K. Sr., Richard S. and Percy K. Mirikitani Scholarship
George C. Munro Award for Environmental Law-Hawai‘i
Edward H. Nakamura Memorial Scholarship
Linnel Nishioka-HECO Award
Pacific Asian Studies Achievement Scholarship
Sam and Helen Piesner Endowed Scholarship for Japanese Legal Studies
Coral W. & James H. Pietsch Award
Michael Porter Scholastic Awards
Ramsfield Scholarship
Amy C. Richardson Memorial Award
Cades Schutte Scholarship
Samuel Soifer Award for Social Justice
Spirit of Alison K. Adams Award
Nancy J. Strivers Award Hawaii Women’s Legal Foundation Student Choice Award
Ulu Lehua Scholarship Fund
Margaret & John Ushijima Scholarship

**John A. Burns School of Medicine**
Kheng See Ang, MD and Lawrence J. Taff Endowed Scholarship
Ronald and Carol Ayabe Endowed Scholarship
ARCS Foundation Scholarships
E. E. Black Scholarship
John A. Burns Scholarship for Entering JABSOM Students
John A. Burns School of Medicine 50th Anniversary Scholarship
Dr. Albert C. K. Chum-Hoon Award
Empowerment Fund at JABSOM
Wo JABSOM Achievement Scholarship
Wo JABSOM Opportunity Scholarship
Ralph and Jane Hale Scholarship
Hawai‘i Medical Alliance Association Community Service Award
Hawai‘i Medical Association Medical Student Scholarship
Will J. Henderson Aloha Fund
Jane Takako Fujii Hong Scholarship
Dr. Kekuni Blaisdell Endowed Scholarship for Native Hawaiian Health
Dr. Laura Weldon Hoque Award
Dr. Shigeru Richard and Mrs. May Horio Memorial Scholarship
Samuro and Florence Ichinose Scholarship
Dr. Alan S. T. Chang Endowed Memorial Scholarship in Dental Hygiene
Dr. Allen and Mrs. Helen Ito Endowed Scholarship in Dental Hygiene
Dr. Graceann Ehlike Memorial Endowed Scholarship in Nursing
Dr. & Mrs. Lawrence K. W. (Bo Hing Chan) Tsu Scholarship in Nursing
Edward and Sally Sheehan Endowed Scholarship in Nursing
EWHA Woman’s University Alumnae Association in Hawai‘i Nursing Scholarship
Felicitad T. Yoro Memorial Scholarship in Nursing
Frances A. Matsuda Endowed Fellowship in Nursing
The Friendship Endowed Scholarship in Nursing
Hawai‘i Family Dental Centers Scholarship for Dental Hygiene
Hawai‘i Keiki Endowed Scholarship Fund for Nursing
Helene Fuld Health Trust Endowed Scholarship Fund
Joan Lau Kamimoto Endowed Memorial Scholarship in Dental Hygiene
Jonas Nurse Leader Scholars Fund
Jonas Veterans Healthcare Scholars Fund
Kenneth Kenji Koga and Yosh Tanji Koga Endowed Scholarship in Dental Hygiene
Kunimitsu and Jessie Tamai Endowed Scholarship in Nursing
Leilani Kauai Scholarship Fund for UH Mānoa Nursing
Macfarlane Scholarship in Nursing
Mary Patricia Kulesh Memorial General Aid Fund in Nursing
Milton Lau Memorial and Nalani Makua Andresen Endowed Scholarship in Nursing
Murabayashi Foundation Nursing Scholarship Fund at UH Mānoa
Pauline Hirasuna Scholarship in Nursing
Queen’s Medical Center IKE AO PONO Fund
Robert Wood Johnson Foundation New Careers in Nursing Scholarship
Signe Widen Nyborg Endowed Scholarship in Nursing Fund
UH Mānoa Nursing Alumni Association Endowed Scholarship
William Randolph Hearst Bachelor of Science Nursing Scholarship

**School of Ocean and Earth Science and Technology**
Again Abbott Award
ARCS Foundation Scholarship (graduate)
Fred M. Bullard Endowed Graduate Fellowship (graduate)
Alan Church Environmental Steward SOEST Scholarship
Ricky Chi Kan Fong Memorial Scholarship
William T. Coulbourn Fellowship in Marine Geology
Wendell and Susan Foo Scholarship
Hawaii Space Grant Undergraduate Fellowship
Bernice C. Loui Scholarships and Fellowship
NOAA–Sea Grant Scholarships
Senior Thesis Research Award
Noel and Diane Henderson Scholarships in Science and Engineering
Sarp Kayan Scholarship
Fernando Gabriel Leonida Memorial Scholarship
Senior Thesis Research Award
Harold T. Stearns Fellowship
Undergraduate Summer Field Camp Award
J. Watumull Merit Scholarship (graduate)

**School of Pacific and Asian Studies**
Ah Kin (Buck) Yee Graduate Fellowship in Chinese Studies
Center for Japanese Studies Graduate Fellowship
Center for Japanese Studies Sen Graduate Fellowship
Center for Korean Studies Graduate Fellowship
Center for Korean Studies Undergraduate Scholarship
Chung-Fong and Grace Ning Fund
Donald C. W. Kim Graduate Scholarship for Korean Studies
Dong Jae and Hyung Ja Lee Undergraduate Scholarship
Eu Tong Sen Memorial Fellowship
Hanayo Saaki Graduate Merit Scholarship
Herbert H. Lee Graduate Scholarship
James Shigeta Scholarship
Japan Travel Bureau Scholarship
John Fee Embree Endowed Scholarship
Minae and Miki Kajiyama Graduate Merit Scholarship
Moscowt Fellowship for Graduate Studies of Southeast Asia
Murabayashi Urban Planning Scholarship
N. H. Paul Chung Endowed Graduate Scholarship
Starr Foundation Graduate Fellowship in Asian Studies
Takie Sugiyama Lebra Scholarship
Tasuku Harada Graduate Scholarship
Yong-Min Endowed Scholarship

**Myron B. Thompson School of Social Work**
Betty Lyle Anderson Scholarship
Ho A. Hana Scholarship
Ho’ala’a O Na Kupuna ‘Ihi Scholarship
Gordon and June Ito Foundation Scholarship
Sentaro and Laurel Tomiko Takasaki Kaneda Endowed Scholarship
Oscar and Gaile M. Kurren Endowed Scholarship
Fred Markham Lampson Scholarship
Jensen Lampson Memorial Scholarship
Sally Kanehe Lampson Endowed Scholarship
Murabayashi Foundation Scholarship
NASW–Hawai’i Chapter Student Scholarship
George K. Okazaki Memorial Scholarship and Grant Fund
Daniel S. Sanders Doctoral Award
SSW Alumni and Friends Scholarship
Richard S. and T. Rose Takasaki Endowed Scholarship
Elaine K. Tamashiro Endowed Fellowship
Myron B. Thompson Endowed Scholarship

**School of Travel Industry Management**
Amadeus Revenue Integrity TIM Scholarship
Atlantis Submarines Hawai’i TIM Scholarship
Ronald H. Brown Memorial Scholarship
Chuck Yim Gee Asia Pacific TIM Scholarship
Club Managers Association of America
Discover Hawai’i Tours
Edward and Orpha Barnet Scholarship
Edwin M. Hastings Memorial Scholarship
Enterprise Rent-A-Car TIM Scholarship Fund
John Stewart Foote Scholarship
Halekulani
Hawai’i Lodging and Tourism Association
Hawai’i Travel Academy Scholarship
Hawaiian Airlines TIM Scholarship
H.I.S. Hawai’i TIM Scholarship Endowment
Hichiro and Lily Kobayashi Endowment Scholarship
Hilton International Hotels Scholarship
Hospitality Advisors, LLC
Hotel & Travel Fellowship
Horizon Lines Scholarship
Hyatt Hotels Hawai’i
Iwaski Scholarships Foundation, Inc. Endowed Scholarship
J. Willard and Alice S. Marriott Foundation Scholarship Fund
JTBI Hawai’i, Inc. Scholarship Endowment
Jeffery Kalima Loo Marriott Scholarship
Kenneth F. C. and Aileen K. Char Fellowship Fund
Mark B. Dunkerley Endowed Scholarship Fund
Marriott Foundation Scholarship
Marriott Resorts Hawai’i TIM Scholarship
Marriott Vacations Worldwide
Martin Pray–IHRG Industry Scholarship
Meeting Professionals International–Aloha Chapter
Robert F. Mason Memorial Scholarship
Mai Hotel & Lodging Association Scholarship
MC&A, Inc., Scholarship in TIM
National Defense Transportation Association
Nolan and Jane Kramer Scholarship
Pacificso Service Grant
PATA Hawai’i Chapter
Peter Firthian Endowed Scholarship at the University of Hawai’i
School of Travel Management

**College of Tropical Agriculture and Human Resources**
Aloun Farms Association
Harold and Eleanor Matsumoto Au Scholarship Program
Mary and Marie Blanco Scholarship
Elsie M. Boatman Scholarship
J. L. Brewbaker Endowed Scholarship
Robert L. & Brigitte M. Campbell Scholarship in Human Nutrition
Kenneth Cassman Scholarship
Allene E. F. Chun Scholarship
CTAHR Alumni & Friends Association Scholarship
CTAHR Centennial Scholarship
CTAHR New Student Scholarship
CTAHR Achievement Scholarship
Dean’s Outstanding Achievement Scholarship
Drs. A. Y. Yeung, Sui Shan & Emmett Richard Easton Scholarship
Edward M. Ehrhorn Entomology Scholarship
Fred Fujimoto Endowed Scholarship
Katherine Gruelle Scholarship
Richard Hamilton Scholarship
Elmo Hardy Scholarship
Andrew G. and Merle Hashimoto Scholarship
Hauoli Mau Loa Fellows Graduate Assistantship
Hawai’i Association of Family and Consumer Sciences Fashion Design
and Merchandising Centennial Scholarship
Hawai’i Association of Family and Consumer Sciences Family
Resources Centennial Scholarship
Hawai’i Extension Association of Family and Consumer Sciences
Scholarship
Hawai’i Florists and Shippers Association Scholarship
Hawai’i Fresh Milk Industry Scholarship
Hawai’i 4-H Alumni/Weinberg Scholarship
Louis and Rachel Henke Award
Charles Chu Hing Scholarships
Tadashi Higaki Scholarship
James Richard (Dick) Bunker Hope Scholarship
Mabel Inada Ito Scholarship
Hiroki Kaku Memorial Scholarship
Haruyuki Kamemoto Scholarship
Jiro Matsui Scholarship
Sachiyuki Masumoto Scholarship
Carey D. Miller Award
Wallace C. Mitchell Endowed Scholarship
Dr. Allen Y. Miyahara Scholarship
Monsanto Fellowship in Plant Science and Pathology
Monsanto Scholarship
Alexander Napier Memorial Scholarship
Katherine Bazore Gruelle and Nobue Nishimura Scholarship
Patricia Sachi Ogawa Memorial Scholarship
Phi Upsilon Omicron Scholarship
Lori Oura Memorial Scholarship
Charles Reid, DVM Memorial Scholarship
Robert L. & Brigitte M. Campbell Scholarship in Human Nutrition
Paul Singleton Scholarship
Nan-Yao & Jill H. Su Scholarship
Minoru Tamashiro Endowed Scholarship
Tanada Family Entomology Scholarship
Harold Tanouye Scholarship
Dennis Y. and Brenda R. Teranishi Scholarship
TPSS Scholarship
Goro Uehara Scholarship
Jhamandas Watumull CTAHR Scholarship
J. Watumull Merit Scholarship
George M. Yamane Scholarship
Sylvia H. L. Yuen & Harold S. Masumoto Fellowship Fund

**Intercollegiate Athletics**
‘Ahahui Koa Anuenue Scholarship
Athletic General Scholarships

**International Student Services**
Dai Ho Chun Scholarship
International Undergraduate Student Scholarship
June C. Naughton International Student Services Scholarship
Kenji Yamagumi Fund

**KOKUA Program**
Masao and Michiko Okasako Scholarship
Walter Serikawa Scholarship

**Kua’ana Native Hawaiian Student Development Services**
Operation Kua’ana Scholarship

**National Student Exchange**
Edwin T. and Leilani Kam Scholarship

**ROTC Programs**

**Aerospace Studies**
Airlift Tanker Association Scholarship
Armed Forces Communication and Electronics Association ROTC
Daedalean Award—Louis Gawens Senior Memorial Scholarships
Four, Three, and Two-Year National ROTC In-College Scholarships
Flagship Korean Language Program Scholarship
Military Officers Association of America-Hawai‘i Chapter Scholarship
Scholarship Award
UH Foundation Giving Tree Scholarship
Wah Kau Kong Memorial Award Scholarship

**Military Science**
Armed Forces Benefits Association Scholarship
Armed Forces Communications and Electronics Association Scholarship
Leader’s Training Course/Basic Camp Two-Year Scholarship
Four, Three, and Two-Year National ROTC Scholarships
Four, Three, and Two-Year Nursing Scholarships
Green To Gold Four, Three, and Two-Year Scholarships
National Guard/Army Reserve Scholarships
Tawani Award

**Study Abroad Center**
Anita Hecht Scholarship (French only)
Association of International Education—Japan
Betsy Tan Scholarship (French only)
Chancellor’s International Opportunities Scholarship
Colleges of Arts & Sciences Alumni Association Study Abroad Grant
Shidler College of Business Scholarship (students taking courses in business, area studies, and foreign languages)
Denmark’s International Scholarship
Flinders University semester scholarship (Australia)
International College of Seville (Seville only)
Margaret Todd Scholarship (London only)
Mildred Towle Scholarship for Study Abroad
Mira Baciu-Simian Scholarship (French only)
UH Mānoa offers a wide range of undergraduate and graduate degrees, minors, and certificate programs. Changes in programs and degrees approved after December 2014 may not be reflected in this listing.

<table>
<thead>
<tr>
<th>Field</th>
<th>Page #</th>
<th>College/ School</th>
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<th>Degree</th>
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Endnotes

1. The Undergraduate Certificate in Aging and the Advanced Certificate in Gerontology is offered by the Center on Aging.
2. The BA in Art is offered with a studio focus or an Art History focus.
3. The BS in kinesiology and rehabilitation science is offered in Health and Exercise Science and in Health and Physical Education. The MS in kinesiology and rehabilitation science offers specializations in physical activity, adapted physical activity, and rehabilitation counselor education. The MS in athletic training offers Entry-Level (professional) and Post-Professional specializations.
4. The MS and PhD in biomedical sciences is offered in tropical medicine.
5. The Undergraduate Certificate for Indo-Pacific Languages is offered in Filipino, Hindi, Ilokano, Indonesian, Khmer (Cambodian), Samoan, Sanskrit, Tahitian, Thai, and Vietnamese.
6. The MA and PhD in East Asian Languages and Literatures are offered in Chinese, Japanese, and Korean.
8. The PhD in Education is offered in the following specializations: curriculum and instruction, educational administration, educational foundations, educational policy studies, exceptionalities, kinesiology, and learning design and technology.
9. The BA in Korean in East Asian Languages and Literatures is offered in conjunction with the Department of Music.
10. Students can receive a BA in interdisciplinary studies in a wide variety of individualized BA programs, including but not restricted to: aquaculture, cognitive science, conflict resolution, criminology, developmental disabilities, gerontology, human relations in organizations, international studies, interpretation, linguistics, peace studies, pre-law, pre-medicine, pre-physical therapy, public affairs and policy studies, and translation and interpretation.
11. The BA in Philippine Language and Literature has concentrations in Filipino or Ilokano.
12. The Graduate Certificate in Ocean Policy is coordinated by the Department of Economics.
13. The BA in interdisciplinary studies for Indo-Pacific languages has several concentrations: Hindi, Indonesian, Khmer (Cambodian), Samoan, Sanskrit, Thai, and Vietnamese.
14. A Post-baccalaureate Certificate for Clinical Training in Medical Technology is offered by the School of Medicine.
15. A BEd in elementary or secondary education with a major in music is offered in conjunction with the Department of Music and the College of Education.
17. The PhD in social welfare is offered by the School of Social Work.
18. The Post-baccalaureate Certificates in Secondary Education and Special Education are undergraduate professional certificates.
19. There is no admittance to the BA and BS in Zoology degrees effective Spring 2013.
20. The Agribusiness Management Certificate is offered in Tropical Plant and Soil Sciences.
21. The Department of Geology and Geophysics offers the Bachelor of Arts in Environmental Earth Science and Earth Science Education, and Masters in Geology and Geophysics and the Professional Masters in Geoscience.

Abbreviations Key

Degrees

BA—bachelor of arts
BBA—bachelor of business administration
BE—bachelor of education
BE—bachelor of environmental design
BFA—bachelor of fine arts
BMus—bachelor of music
BS—bachelor of science
BSW—bachelor of social work
DArch—doctor of architecture
DNPH—doctor of nursing practice
DrPH—doctor of public health
EdD—doctor of education
JD—juris doctor
LLM—master of laws
MA—master of arts
MAcc—master of accounting
MBA—master of business administration
MD—doctor of medicine
MED—master of education
MEDT—master of education in teaching
MFA—master of fine arts
MGE—master of geoscience for professionals
MHRM—master of human resource management
MLISc—master of library and information science
MMus—master of music
MPA—master of public administration
MPH—master of public health
MS—master of science
MSW—master of social work
MURP—master of urban and regional planning
PhD—doctor of philosophy
PBCSE—post-baccalaureate certificate in secondary education
PBSPED—post-baccalaureate certificate in special education

College/School/Unit

A&S—Colleges of Arts and Sciences
ARCH—School of Architecture
BUS—Shidler College of Business
EDUC—College of Education
ENGR—College of Engineering
SHK—Hawai‘inuiākea School of Hawaiian Knowledge
IP—Interdisciplinary Programs
LAW—School of Law
MED—School of Medicine
SONDH—School of Nursing and Dental Hygiene
SOEST—School of Ocean and Earth Science and Technology
SPAS—School of Pacific and Asian Studies
TIM—Travel Industry Management
CTAHR—College of Tropical Agriculture and Human Resources
UED—Office of the Assistant Vice Chancellor for Undergraduate Education
Academic Rights and Freedoms of Students

UH Mānoa, like all state universities, embraces those aspects of academic freedom that 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 U.S. or from foreign countries, as members of the academic community are encouraged to develop a capacity for critical judgment and to engage in a sustained and independent search for truth.

For its part, UH Mānoa 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 the student’s wish to do so.

Student Conduct

It is a privilege to be a member of the UH Mānoa community. This privilege provides the student with the opportunity to learn and participate in the many programs that are offered on campus. Along with that privilege, the individual is expected to be responsible in relationships with others and to respect the special interests of the institution. These special interests are fully set forth in the UH System’s Student Conduct Code.

Information, advice, or a copy of the code may be obtained from the Office of Judicial Affairs, Queen Lili'uokalani Center for Student Services 207 or explore www.studentaffairs.manoa.hawaii.edu/policies/conduct_code/.

Confidentiality Policy for Student Employees

Student employees are governed by policies and procedures stated in APM 9.980. The following is an excerpt from those policies:

Student employees at UH Mānoa may have access to confidential information relating to other students, faculty, and staff and/or pertaining to UH Mānoa in the course of performing their duties and responsibilities as student employees.

Under the Family Educational Rights and Privacy Act (FERPA) federal law and UH Mānoa policy, educational records are protected from disclosure to third parties unless pursuant to narrow exceptions and that other confidential records must not be disclosed.

As part of their duties and responsibilities, student employees shall maintain the confidentiality of all such records during and after their period(s) of employment at UH Mānoa. They shall not, directly or indirectly, disclose to any person other than their supervisor, or an individual approved by their supervisor, any information concerning such records. Any unauthorized disclosure may be grounds for immediate termination, prohibition of future employment and/or disciplinary action up to and including dismissal from UH Mānoa.

Academic Integrity

The integrity of a university depends upon academic honesty, which consists of independent learning and research. Academic dishonesty includes cheating and plagiarism. The following are examples of violations of the Student Conduct Code that may result in suspension or expulsion from UH Mānoa.

Cheating

Cheating includes, but is not limited to, giving unauthorized help during an examination, obtaining unauthorized information about an examination before it is administered, using inappropriate sources of information during an examination, altering the record of any grade, altering an answer after an examination has been submitted, falsifying any official UH Mānoa record, and misrepresenting the facts in order to obtain exemptions from course requirements.

Plagiarism

Plagiarism includes, but is not limited to, submitting, to satisfy an academic requirement, any document that has been copied in whole or in part from another individual’s work without identifying that individual; neglecting to identify as a quotation a documented idea that has not been assimilated into the student’s language and style; paraphrasing a passage so closely that the reader is misled as to the source; submitting the same written or oral material in more than one course without obtaining authorization from the instructors involved; and “dry-labbing,” which includes obtaining and using experimental data from other students without the express consent of the instructor, utilizing experimental data and laboratory write-ups from other sections of the course or from previous terms, and fabricating data to fit the expected results.

Disciplinary Action

The faculty member must notify the student of the alleged academic misconduct and discuss the incident in question. The faculty member may take academic action against the student as the faculty member deems appropriate. These actions may be appealed through the Academic Grievance Procedure, available in the Office of Judicial Affairs. In instances in which the faculty member believes that additional action (i.e., disciplinary sanctions and a UH Mānoa record) should be established, the case should be forwarded to the Office of Judicial Affairs.
Academic Grievance
A student who believes that a faculty member has failed to meet specific responsibilities outlined in "Responsibilities of Faculty and Students and Academic Grievance Procedures for Students, UH Mānoa" may register a grievance. Students and faculty are encouraged to resolve their differences through consultation and mediation. Where these efforts are ineffective, the policy sets forth the process that is available to the student grievant. The decisions of the Academic Grievance Committee are final within UH Mānoa. Information, advice, or a copy of the relevant policies and procedures may be obtained from the Office of Judicial Affairs, Queen Lili'uokalani Center for Student Services Center 207 or explore www.studentaffairs.manoa.hawaii.edu/policies/academic_grievance/.

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

Excused Student Absences for Official University-Sponsored Events
Faculty members will make all reasonable attempts to accommodate student absences from class due to their participation in a university-sponsored event, such as an intercollegiate athletic competition or academic event at which the student represents his or her department or UH Mānoa.

For regularly-scheduled events, students are to notify instructors within the first two weeks of the semester. For special events or tournaments, students are to notify their instructors as soon as they learn of the anticipated absence. In both cases, students who must miss class for such events will be responsible for completing all assigned work as expeditiously as possible.

Nondiscrimination Policy
UH Mānoa is an equal opportunity/affirmative action institution and is committed to a policy of nondiscrimination on the basis of race, sex, gender identity and expression, age, religion, color, national origin, ancestry, citizenship, disability, genetic information, marital status, breastfeeding, income assignment for child support, arrest and court record (except as permissible under State law), sexual orientation, national guard absence, status as a covered veteran, and domestic, dating, stalking, or sexual violence victim status. This policy covers admission and access to, and participation, treatment, and employment in UH Mānoa's programs, activities, and services. With regard to employment, UH Mānoa is committed to equal opportunity in all personnel actions such as recruitment, hiring, promotion, and compensation. Sexual harassment and other forms of discriminatory harassment are prohibited under the UH Systemwide policy. (Revised 07/15)

UH Mānoa strives to promote full realization of equal opportunity through a positive, continuing affirmative action program in compliance with federal Executive Order 11246. The program includes measuring performance against specific annual hiring goals, monitoring progress, and reporting on good faith efforts and results in annual affirmative action plan reports. As a government contractor, UH Mānoa is committed to an affirmative policy of hiring and advancing in employment qualified persons with disabilities and covered veterans. For information on equal opportunity policies or complaint procedures for the UH Mānoa campus, contact:

- **Title IX Coordinator:** Dee Uwono, Director and Title IX Coordinator, Hawai'i Hall 124, phone (808) 956-2299, email duwono@hawaii.edu
- **Students:** Lori Idez, Interim Vice Chancellor for Students, Deputy Title IX Coordinator for Students and ADA Coordinator, QLCCS 409, phone (808) 956-3290 (Voice/Text) (Revised 07/15)
- **Students with Disabilities:** Ann Ito, Director, KOKUA Program, QLCCS 103, phone (808) 956-7511 (Voice/Text) or (808) 956-7612 (Voice/Text)
- **Employees (and Affirmative Action Plan):** Mic Watanabe, Director of EEO/AA, Deputy Title IX Coordinator for Employees and ADA Coordinator, Administrative Services Building 1, Room 102, phone (808) 956-7077, www.hawaii.edu/eeo (Revised 07/15)

- **Student Advocates:** Christine Quemuel, director of the Women's Center, QLCCS 211, phone (808) 956-8059, email umhwomen@hawaii.edu (Revised 07/15)
- **Sexual Harassment/Gender Equity Counselor:** (Revised 07/15)
  - QLCCS 210, phone (808) 956-9977
- **Civil Rights Counselor:** Jill Nunokawa, Civil Rights Counselor, QLCCS 210, phone (808) 956-4431

UH Mānoa recognizes its obligation to provide equal access to programs, services, and activities to students with disabilities. Contact the KOKUA (disabled student services) program for accessibility information and services.

Gender Equity in Intercollegiate Athletics
Gender equity in athletics extends the doctrine of fairness to all areas of athletic activity at the university level. It is activated by a sense of moral obligation that exceeds any specific duty to comply with legal requirements, although it also recognizes the necessity of observing the tenets of Title IX. Its desired effect is to offer women and men equal opportunities to participate in sports for which there is demonstrated interest among athletes in Hawai‘i and to provide equitable levels of support for coaching, travel, scholarships, operating expenses, and facilities used. Beyond these specific goals, gender equity also fosters an attitude and establishes an environment in which men’s and women’s sports are encouraged in comparable ways. Those who support gender equity are willing to cooperate in frequent self-evaluations and to implement change so that all student-athletes can have the same opportunity to realize the highest level of their abilities.

Student Records
The Family Educational Rights and Privacy Act (FERPA) affords eligible students certain rights with respect to their education records. These rights include:

- The right to inspect and review the student’s education records within 45 days after the day UH Mānoa receives a request for access. A student should submit to the registrar, dean, head of the academic department, or other appropriate official, a written request that identifies the record(s) the student wishes to inspect. The school official will make arrangements for access and notify the student of the time and place where the records may be inspected. If the records are not maintained by the school official to whom the request was submitted, that official shall advise the student of the correct official to whom the request should be addressed.
- The right to request the amendment of the student’s education records that the student believes is inaccurate, misleading, or otherwise in violation of the student’s privacy rights under FERPA. A student who wishes to ask the school to amend a record should write the school official responsible for the record, clearly identify the part of the record the student wants changed, and specify why it should be changed. If the school decides not to amend the record as requested, the school will notify the student in writing of the decision and the student’s right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.
- The right to provide written consent before the school discloses personally identifiable information (PII) from the student’s education records, except to the extent that FERPA authorizes disclosure without consent. The school discloses education records without a student’s prior written consent under the FERPA exception for disclosure to school officials with legitimate educational interests. A school official is a person employed by UH Mānoa in an administrative, supervisory, academic, research, or support staff position (including law enforcement unit personnel and health staff); a person serving on the board of regents; or a student serving on an official committee, such as a disciplinary or grievance committee. A school official also may include a volunteer or contractor outside of UH Mānoa who performs an institutional service or function for which the school would otherwise use its own employees and who is under the direct control of the school with respect to the use and maintenance of PII from education records, such as an attorney, auditor, or collection
Agent. A school official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibilities for UH Mānoa.

- Parents and spouses of students are advised that information contained in education records, with the exception of directory information, will not be disclosed to them without the prior written consent of the student.

- Students are advised that institutional policy and procedures required under FERPA have been published as Administrative Procedure AP 7.022, Procedures Relating to Protection of the Educational Rights and Privacy of Students. Copies may be obtained from the Office of the Vice Chancellor for Students.

- The right to file a complaint with the U.S. Department of Education concerning alleged failures by UH Mānoa to comply with the requirements of FERPA. The name and address of the office that administers FERPA is: Family Policy Compliance Office; U.S. Department of Education; 400 Maryland Avenue, SW Washington, DC 20202.

- Directory Information: The university has designated the following information from a student’s education record as “directory information”: (1) Name of student; (2) Major field of study; (3) Class (i.e., freshman, sophomore, etc.); (4) Past and present participation in officially recognized activities (including positions held and official statistics related to such participation and performance); (5) Past and present participation in officially recognized sports (including positions held and official statistics related to such participation and performance); (6) Weight and height of members of athletic teams; (7) Dates of attendance; (8) Previous institution(s) attended; (9) Full or part-time status; (10) Degree(s) conferred.

- Information from a student’s education record as “directory information” may be disclosed without the prior written consent of the student to “officials” whose privacy interests are reasonably believed to be outweighed by important educational interests, as defined by UH Mānoa. Officials may include: UH Mānoa Graduation and Persistence Rates

### UH Mānoa Graduation and Persistence Rates

**First-Time, Full-Time, Degree-Seeking Undergraduates**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Graduation Rate—Graduated within 6 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>52%</td>
</tr>
<tr>
<td>Women</td>
<td>59%</td>
</tr>
</tbody>
</table>

**IPEDS Race/Ethnicity**

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Graduation Rate—Graduated within 6 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>57%</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>44%</td>
</tr>
<tr>
<td>White</td>
<td>44%</td>
</tr>
</tbody>
</table>

**Federal Grant/Loan Recipient**

- Recipient of a Pell Grant...

**Persistence Rate—Still enrolled after 6 years**

- 7%

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### Student Graduation Rates

**Graduation and Persistence of First-time Full-time Degree-seeking Undergraduates**

The information in this graph provides a partial description of the graduation and enrollment patterns of students. It should not be used to infer or predict individual graduation or enrollment behavior.

**Residency Requirements for Tuition Purposes**

Students who do not qualify on the first day of instruction as bona fide residents of the state of Hawai’i, according to UH Mānoa rules and regulations, must pay the nonresident tuition. An official determination of residency status will be made at the time of application. Applicants may be required to provide documentation to verify residency status. Once classified as a nonresident, a student continues to be so classified during his or her enrollment at UH Mānoa until he or she can present satisfactory evidence to the residency officer that proves otherwise.

Some of the more pertinent UH Mānoa residency regulations follow. For additional information or clarification, contact the residency officer in the Office of Admissions.

### Definition of Hawai’i Residency

A student is deemed a resident of the state of Hawai’i for tuition purposes if the student (19 years old or older) or the student (under 19 years old) and the student’s parents or legal guardians have done the following:

1. **Demonstrated intent to establish domicile in Hawai’i:** (see below for indicia);
2. **Been physically present in Hawai’i:** for 12 consecutive months prior to the first day of instruction and subsequent to the demonstration of intent to establish domicile in Hawai’i; and
3. The student, whether adult or minor, has not been claimed as a dependent for tax purposes for at least 12 consecutive months prior to the first day of instruction by his or her parents or legal guardians who are not residents of Hawai‘i.

To demonstrate the intent to make Hawai‘i a person’s domicile, the following indicia apply, but no single act is sufficient to establish residency for tuition purposes:

1. Filing Hawai‘i resident personal income tax return;
2. Voting/registering to vote in the state of Hawai‘i; and
3. Other indicia, such as permanent employment and ownership or continuous leasing of a dwelling in Hawai‘i.

Other Legal Factors

Other legal factors involved in making a residency determination include the following:

1. The age of majority is 18 years. However, a person between the ages of 18 and 19, unless emancipated, cannot claim residency solely on the basis of himself or herself because he or she does not have the minimum 12 months residency, which commences on his or her 18th birthday. Therefore, the applicant must claim a portion of the required 12 months on the basis of his or her parents or legal guardian;
2. The 12 months of continuous residence in Hawai‘i shall begin on the date upon which the first overt action (see indicia above) is taken to make Hawai‘i one’s domicile. Resident status will be lost if it is interrupted during the 12 months immediately preceding the first day of instruction;
3. Residency in Hawai‘i and residency in another place cannot be held simultaneously;
4. Presence in Hawai‘i primarily to attend an institution of higher learning does not create resident status, regardless of the length of stay. A student cannot establish residency by simply being enrolled in school. If a student is a nonresident, it is presumed that he or she is living in Hawai‘i primarily to attend school and his or her presence is temporary even if the student lives in Hawai‘i during vacation and other breaks from study. For example, the student may be presumed to live in Hawai‘i primarily to attend school if he or she is enrolled in school half-time or more, appears to be receiving significant financial support from family members who reside outside Hawai‘i, is absent from the state for more than 30 days per year during school vacation period, or receives student financial assistance based on residency in another state or jurisdiction;
5. The residency of unmarried students who are minors follows that of the parents or legal guardian. Marriage emancipates a minor;
6. Resident status, once acquired, will be lost by future voluntary action of the resident inconsistent with such status. However, Hawai‘i residency will not be lost solely because of absence from the state while a member of the U.S. Armed Forces, while engaged in navigation, or while a student at any institution of learning.

Exemptions

Nonresidents may be allowed to pay resident tuition if they qualify as one of the following:

1. U.S. military personnel and their authorized dependents (as defined by the armed services) during the period such personnel are stationed in Hawai‘i on active duty;
2. Members of the Hawai‘i National Guard or Hawai‘i-based Reserves;
3. Full-time employees of UH Mānoa and their spouses and legal dependents (as defined under Internal Revenue Service rules);
4. East-West Center student grantees pursuing baccalaureate or advanced degrees; or
5. Hawaiians, descendants of the aboriginal peoples that inhabited the Hawaiian Islands and exercised sovereignty in the Hawaiian Islands in 1778.

Citizens of an eligible Hawai‘i Pacific island district, commonwealth, territory, or insular jurisdiction, state, or nation which does not provide public institutions that grant baccalaureate degrees may be allowed to pay 150% of the resident tuition. These currently include the following: American Samoa, Commonwealth of the Northern Mariana Islands, Federated States of Micronesia, Futuna, Kiribati, Nauru, New Caledonia, Niue, Republic of Palau, Republic of Marshall Islands, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu, and Wallis.

Misrepresentation

A student or prospective student who provides incorrect information on any form or document intended for use in determining residency status for tuition purposes will be subject to the requirements and/or disciplinary measures provided for in the rules and regulations governing residency status.

Appeal Process

Residency decisions may be appealed. Contact the residency officer for information on how to initiate an appeal before the Committee on Resident Status.

Compliance with Federal Guidelines Concerning Research

There are a number of offices and committees at UH Mānoa that play key roles in overseeing and developing policy for various aspects of the research process. Federal, state, and UH Mānoa regulations require that certain proposed research projects are reviewed and approved to ensure that the proposed research complies with protective standards.

UH Mānoa students who intend to conduct the following types of research should check with their respective academic offices and the committees and office below for guidance and information pertaining to their research project:

1. Research funded by non-UH Mānoa funds.
2. Research sponsored by UH Mānoa.
3. Research conducted by or under the direction of any employee or agent of UH Mānoa in connection with his or her institutional responsibilities.
4. Research conducted by or under the direction of any employee or agent of this institution using any property or facility of this institution.
5. Research involving the use of UH Mānoa’s non-public information to conduct research or identify research subjects.

General information regarding standards applicable to research activities can be obtained from the Office of Research Services, 2425 Campus Road, Sinclair Library Room 1, Honolulu, HI 96822, (808) 956-8658 or visit their website at www.ors.hawaii.edu/.

Institutional Animal Care and Use Committee

UH Mānoa employees and students who will conduct research involving nonhuman, vertebrate animals are required to submit an application to the Institutional Animal Care and Use Committee (IACUC) for review and approval prior to any such use of animals. Applications and information may be obtained from the Animal and Veterinary Service Program or visit the website at www.hawaii.edu/ LAS. Students should check with their respective academic offices and the Institutional Animal Care and Use Committee for guidance.

Human Studies Program

UH Mānoa employees and students who will conduct research involving human subjects are required to submit an application to the Human Studies Program for review and approval prior to the involvement of human subjects in the research project. This includes biomedical, behavioral, humanities, and social science projects whether funded or not. Applications and information may be obtained from the Human Studies Program at manoa.hawaii.edu/researchcompliance/human-studies or by calling (808) 956-5007. Students also should check with their departments or course instructors for further guidance.

Environmental Health and Safety Office

Employees and students whose research projects may involve radioactive materials, SCUBA diving, or hazardous materials should contact the Environmental Health and Safety Office at (808) 956-8660 or visit their website at www.hawaii.edu/ehso for information and guidance. For more details, go to the “Instructional Support and Research Units” section.
School of Architecture

Administration
Architecture 201
2410 Campus Road
Honolulu, HI 96822
Tel: (808) 956-7225
Fax: (808) 956-7778
Email: arch@hawaii.edu
Web: www.arch.hawaii.edu/
Dean: Daniel S. Friedman, PhD, FAIA

Faculty
*R. Akiona, MS—construction management
*K. Ashraf, PhD—design, history and theory
*S. Carr, PhD—public health, landscape architecture
*M. Despang, MArch—structures
*S. Leineweber, PhD, FAIA—design, history of architecture, historic preservation, indigenous culture
*C. Llewellyn, MArch, FAIA—design, global practice
*S. Meder, ArchD—design, environmental systems
*W. Meguro, SM Arch, LEED AP—sustainable buildings/community design
*P. Miao, PhD—architectural/urban design, Chinese architecture
*L. Mitchell, PhD—design, visual rhetoric, theory
*J. M. Noe, MDesS, FAIA—design, professional practice
*H. J. Park, PhD—design computing, optimization, affordable housing
*D. Rockwood, MArch—design, construction materials and processes
*J. Stilgenbauer, MLA—landscape architecture
*L. Walters, MArch—design, digital fabrication
H. Zhou, PhD—basic design, furniture design and fabrication, sculpture installation

Affiliate Faculty
W. R. Chapman, PhD—American studies
J. A. Dator, PhD—political science
A. J. Kaufman, PhD—landscape specialist
K. E. Kim, PhD—planning
L. Minerbi, MCD, Dott Arch, MUP—planning

Adjunct Faculty
R. Altoon, FAIA, LEED AP BD+C, SCDP—professional practice
B. A. Berkus, AIA—professional practice
B. S. Cho, MArch, AIA—professional practice
J. S. Clifford, PhD, AIA—professional practice
S. F. Crowell, Jr., MArch, FAIA—professional practice
C. Davis, AB Arch, FAIA—professional practice
S. Dunlap, BArch—professional practice
S. Ehrlich, FAIA, RIBA—professional practice
J. Ferraro, BFA—professional practice
D. L. Gray, MArch, FAIA—professional practice
R. P. Gronowsky, BArch—professional practice
K. Heinly, MArch, AIA—professional practice
M. B. Hults, MArch—professional practice
A. J. Hyland, BArch—professional practice
C. P. Johnson, Dip Arch RIBA—professional practice
L. Johnson, MArch, AIA—professional practice
J. S. Kilbourn, MArch—professional practice
M. B. Lehrer, MArch, FAIA—professional practice
T. D. Lindblom, Dip Arch, MArch, AIA—professional practice
J. Logan, MArch—professional practice
S. F. Oda, DArch, FAIA—professional practice
J. J. Pan, MArch, FAIA—professional practice
T. Payette, MArch, FAIA—professional practice
B. Perkins, BArch, FAIA—professional practice
J. Sheehy, MArch, FAIA—professional practice
L. Spear, MArch, FAIA—professional practice
B. T. Takahashi, MArch—professional practice
J. Tollit, Dip Arch, ARB, FRSA—professional practice
C. M. Torigoe, BArch—professional practice

General Information
Introduction
The study of architecture develops intellectual, professional, and creative knowledge and skill. Architectural studies allow students to generate physical solutions to complex environmental design problems that often have competing economic, social, and political parameters. The profession of architecture attracts those who have a wide range of interests and skills and wish to make a unique contribution to society.
Vision: Global Connections
The School of Architecture inspires transformative design at the global scale with preeminence in the Asia-Pacific region.

Mission Statement: Building for the 21st Century
The School of Architecture responds to our unique location in the Asia-Pacific region and recognizes the privilege and responsibility to address cultural, environmental, and social diversity. We commit to passionate and engaging community participation through teaching, learning, research, professional practice, and service.

Accreditation Notice
In the U.S., most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted a 6-year, 3-year, or 2-year term of accreditation, depending on the extent of its conformance with established educational standards.

Doctor of Architecture and Master of Architecture degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

The School of Architecture offers the following NAAB-accredited degree program:

Doctor of Architecture
- Track I: (preprofessional undergraduate degree in architecture [126/120 credits] + 90 graduate credits)
- Track II: (non-professional graduate degree [120 credits min.] + 108 graduate credits)

Next accreditation visit: 2018

Admissions Overview
All applicants for admission to the school must complete a UH System Application Form by the stated deadline for the semester in which initial enrollment is sought. For information on the application process, see arch.hawaii.edu/admissions.

Acceptance to UH Mānoa and the school is based on various criteria, including previous academic performance, types of courses previously taken, and the quality of prior experiences.

Placement
The Office of Admissions will complete an undergraduate transfer credit evaluation for prior completed post-secondary level coursework or approved Advanced Placement (AP) high school coursework. The School of Architecture will complete a transfer credit evaluation for prior completed post-secondary level coursework taken in architecture or related subjects after an applicant is accepted by UH Mānoa. Architecture course requirements will be waived only for transfer credits that are deemed equivalent to courses offered by the school. No graduate credit is transferrable to the DArch degree, if it has been counted for another graduate degree.

Students entering the pre-professional undergraduate program directly from high school may potentially complete the program in four years of full-time study. The time to complete the program by transfer students is based on a case-by-case evaluation of transfer credit.

Students entering the program holding a baccalaureate degree in a field unrelated to architecture enter the 108 credit professional DArch program. They may complete the program in approximately three or four years of full-time study dependent on evaluation of previous coursework of undergraduate equivalence.

Students entering the program holding a four-year pre-professional baccalaureate degree (e.g., BS architecture studies, BA architecture studies, BA environmental design) enter the 90 credit professional DArch program. Evaluation of previous coursework on a case by case basis is also undertaken for undergraduate equivalence.

Application Procedures

Undergraduate Application Procedures
All applicants for admission to the pre-professional undergraduate bachelor degree must complete a UH System Application at www.manoa.hawaii.edu/apply/.

Graduate Application Procedures
All applicants for admissions to the professional program (DArch) must hold a baccalaureate degree or higher and must apply online at our school’s website at www.arch.hawaii.edu using a UH Mānoa systems application. Applicants must also submit a School of Architecture Supplemental Information for Admission form and the required documents by the stated deadline directly to the School of Architecture.

We encourage you to visit the UH Mānoa campus and the School of Architecture. Please contact our student services office to arrange appointments or tours of the school.

Application Deadlines

Undergraduate Application Deadlines
Fall priority deadline is January 5 and final deadline is March 1. Spring priority deadline is September 1 and final deadline is October 1.

Graduate Application Deadline
Fall priority deadline is January 5 and final deadline is March 1. Spring priority deadline is September 1 and final deadline is October 1.

The School Admissions Committee reviews completed applications in the order in which they are received. Early application is therefore advisable. All required application materials listed above must be received by the above listed deadlines to be eligible for consideration for admission. Applicants should advise the school immediately of any changes of address. The school assumes no responsibility for missed deadlines resulting from a failure to notify the school of a change of address.

Deferred Admission
The school and UH Mānoa do not grant deferred admission. Applicants wishing to defer admission must reapply to UH Mānoa and the school.

Ownership of Supplemental Documents
Supplemental documents submitted by applicants become the property of the school and will not be retained after the admissions decisions of the School of Architecture have been made.
Advising
Informal academic advising may be requested by prospective students by contacting the school’s Student Services Office. Students who have been accepted to the school should contact the Student Services Office for information regarding orientation and required advising before registration.

Program Requirements
Students enrolled in the pre-professional Bachelor of Environmental Design (BEnvD) must meet UH Mānoa General Education Core Requirements and maintain UH Mānoa academic standards. Enrolled students wishing to enter the 90 credit professional DArch program must maintain a minimum 3.0 GPA at the graduate level and successfully complete a portfolio review process before taking any graduate coursework.

Students in the 108 credit professional DArch program must attain a minimum cumulative GPA of 3.0 at the graduate level and make reasonable academic progress. All graduate students whose cumulative GPA falls below 3.0 are placed on academic probation. Upon completion of the probationary semester if the cumulative GPA is not raised to 3.0, or if special conditions established by the dean are not met, the student may be dismissed or suspended from the program.

Undergraduate Program
Bachelor of Environmental Design (BEnvD)
The pre-professional 4-year undergraduate degree program at UH Mānoa, the Bachelor of Environmental Design (BEnvD), emphasizes the interdisciplinary nature of architecture and provides a liberal arts and sciences education that takes full advantage of the greater university setting. An entering undergraduate student interested in architecture may choose from one of the six undergraduate concentrations leading to the BEnvD; construction management, historic preservation, interior design, landscape design, urban design, and architecture design. Each of these concentrations requires a minimum of 45 semester hours of general (non-architecture) studies.

Graduate Program
Doctor of Architecture (D.Arch.)
The School of Architecture offers the only NAAB accredited Doctor of Architecture degree. The primary activities in the D.Arch. program include: Framing architectural inquires within social, cultural, and interdisciplinary studies with emphasis on Asia and the Pacific; investigating local/global relations evidenced in theory and practice with an emphasis on the quality of the built and natural environment; critically testing and expanding the definitions of, and relationships between the academy and the profession; using research as a basis for the grounding of design and as a primary means to expand knowledge in the discipline; and participating with local and international partners in applied design research and community.

Global Track/China Focus
In partnership with Tongji University College of Architecture and Urban Planning (Shanghai, China), the UH Mānoa School of Architecture has implemented a Global Track/China Focus as a part of its Doctor of Architecture degree. Students who successfully complete this track will have the option to obtain Tongji University’s College of Architecture and Urban Planning NBAA accredited Masters of Architecture degree along with the UHM Mānoa School of Architecture NAAB accredited Doctor of Architecture degree. Nowhere else in the world can a student enroll in a single track and graduate with two accredited architecture degrees from the world’s two largest construction economies.

Special Requirements
All students are required to have their own personal computer for completion of required coursework. A laptop computer is strongly recommended. Software may be required to be purchased by students for the successful completion of courses and to use the school’s advanced graphic and digital fabrication equipment.

Additional Information
For information about the school or degree programs, contact the Student Services Office at arch@hawaii.edu.

For information regarding student loans and scholarships, contact the Financial Aid Services Office.

Professional Fee
All school students are assessed a professional fee each semester at the time tuition is paid. The professional fee for the 2015-2016 academic year is $500 per semester.

Other Requirements
Waiver or substitution of any required course must be approved by the appropriate undergraduate or graduate chair.

Executive Education Program: Global [EX:ED]
The Executive Education Program at the School of Architecture connects the world’s industry leaders with the most distinguished award-winning architects and experts together at the midway between Asia and North America. This program is an exceptional opportunity for talented architects and leaders to gain new insights toward sustainability, cultural and political factors that significantly impact the architecture field. It also creates a high speed rail for top level collaborations among the
highest level respected participants to succeed in today’s highly competitive marketplace.

**Design Futures lab**

The Design Futures Lab has been established since August 2008. Students and faculty affiliated with the Hawai‘i Research Center for Futures Studies, and students and faculty affiliated with the School of Architecture of UH Mānoa have been engaged in a project called “Campuses 2060.” The project explores the history, present situation, and alternative futures of institutions of higher education worldwide according to the overall “future” these institutions find themselves in, and the specific mission, participants, resources, pedagogy, and physical campus that they develop in response to each future. There have been three public presentations of their ongoing work so far. While the initial focus has been on UH Mānoa, it is the intention of the project, still ongoing, to become a global resource for ideas and information about the futures of higher education anywhere.

**Environmental Research & Design Lab**

The Environmental Research and Design Laboratory, an inter-disciplinary research laboratory located in the School of Architecture, was formed to advance sustainable design through research, education, and community outreach, with the aim of improving the dynamic interaction among the built, natural, and human environments. The laboratory not only directly supports the teaching mission of the school, but regularly provides exceptional research and design assistance to the university, the local community, the State of Hawai‘i, and the greater professional community. The lab, which supports student assistantships, has undertaken evaluation of the classroom space and energy audit throughout the campus and the Design Futures Lab has participated in long range planning for the university.

**Heritage Center**

The Heritage Center of the School of Architecture promotes the preservation of cultural and architectural heritage in Hawai‘i and the Asia-Pacific Region by providing expertise, research, documentation, and training opportunities; by disseminating heritage information to the general public; and by increasing interaction and cooperation on heritage issues within the Asia-Pacific area between government agencies, non-profits, and the general public. The Heritage Center wrote the Getty-funded Campus Heritage Plan for the Chancellor’s Office and designed the HUD-funded Ka Papa Loi o Kanewai Community Center for the School of Hawaiian Knowledge.

**Urbanism Research Lab**

The Urbanism Research Lab serves as a platform for multi-disciplinary inquiry, documentation, analysis, and action on the contemporary city. The lab acts to build knowledge of cities as a fundamental prelude for action on the reorganization of urban environments, and provides a forum for envisioning alternative urban futures, with a focus on the Asian city. Specific topics taken up by the lab include: urbanism, ecological adaptation, healthy cities, futures studies, settlement forms, spaces and flows, agents of change, energy studies, and documentation methods.

**Student Organizations**

The school houses a chapter of the American Institute of Architecture Students (AIAS). The organization engages in a number of social and community service activities and has won numerous national awards.

The Gamma Mu Chapter of the Tau Sigma Delta Honor Society is open to DArch students who maintain a 3.0 or higher GPA and are at the top twenty percent of their class at the end of year two.

**Scholarships and Awards**

ARCC King Student Medal for Excellence in Architectural + Environmental Design Research
Alpha Rho Chi Medal, National Professional Architectural Fraternity Award
Henry Adams Medal, American Institute of Architects Award
Henry Adams Certificate, American Institute of Architects Award
Bergum Scholarship
Gilman Hu Honolulu Chapter CSI Endowed Scholarship
Allen R. Johnson-Roy C. Kelley Architectural Research Travel Scholarship
HonBlue Student Support Fund
AIA Honolulu Chapter Scholarship
UHSAAA Scholarship
R. Richard Morris Memorial Scholarship
Architecture Practicum Fund
Barry John Baker Scholarship
Donald G. Deer Memorial Scholarship
Leighton Liu Scholarship
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# Degrees, Minors, and Certificates

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<td>Public Administration (p. 156)</td>
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<td>Zoology (p. 176)</td>
<td>Min, BA, BS, MS, PhD</td>
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</table>

1. The MS and PhD in botanical sciences are offered in botany.
2. The MA and PhD in East Asian languages and literatures are offered in Chinese, Japanese, and Korean.
3. The MA in Languages and Literatures of Europe and the Americas is offered in French and Spanish.
4. Students can receive a BA in interdisciplinary studies in environmental studies, European cultural studies, Indo-Pacific languages, linguistics, peace studies, and public affairs and policy studies. In addition, students can design their own majors utilizing this program.
5. The BA in interdisciplinary studies for Indo-Pacific languages has several concentrations: Hindi, Indonesian, Samoan, Sanskrit, Thai, and Vietnamese.
6. The Certificate in Indo-Pacific Languages is offered in Filipino, Hindi, Ilokano, Indonesian, Khmer, Samoan, Sanskrit, Tahitian, Thai, and Vietnamese.
7. BA in Philippine Language and Literature with concentration in Filipino or Ilokano
8. The Department of Economics coordinates the Graduate Certificate in Ocean Policy.
9. The Undergraduate Certificate in Korean in East Asian Languages and Literatures and BA in Korean in East Asian Languages and Literatures also has a concentration in Korean for Professionals.
10. There is no admittance to the BA and BS in Zoology degrees effective Spring 2013.
Administration

College of Arts and Humanities

Hawai’i Hall 314
2500 Campus Road
Honolulu, HI 96822
Tel: (808) 956-6460
Fax: (808) 956-9085
Web: www.hawaii.edu/arthum/

Dean: Peter J. Arnade
Interim Associate Dean: Thomas Brislin

Departments and programs: Academy for Creative Media, American Studies, Art and Art History, Communicology, Historic Preservation, History, Museum Studies, Music, Philosophy, Religion, Theatre and Dance

College of Languages, Linguistics & Literature

Bilger 101
2545 McCarthy Mall
Honolulu, HI 96822
Tel: (808) 956-8516
Fax: (808) 956-9919
Web: www.lll.hawaii.edu/

Interim Dean: Jeffrey Carroll
Interim Associate Dean: Kimi Kondo-Brown

Departments and Centers: East Asian Languages and Literatures, English, Indo-Pacific Languages and Literatures, Languages and Literatures of Europe and the Americas, Linguistics, Second Language Studies, Center for Biographical Research, Center for Interpretation & Translation Studies, Center for Language & Technology, National Foreign Language Resource Center

College of Natural Sciences

Bilger 102
2545 McCarthy Mall
Honolulu, HI 96822
Tel: (808) 956-6451
Fax: (808) 956-9111
Web: www.hawaii.edu/natsci/

Dean: William L. Ditto
Interim Associate Dean: Steven Robinow

Departments and programs: Biology, Botany, Chemistry, Information and Computer Sciences, Library and Information Science, Marine Option Program, Mathematics, Microbiology, Physics and Astronomy, Zoology

College of Social Sciences

Hawai’i Hall 310
2500 Campus Road
Honolulu, HI 96822
Tel: (808) 956-6570
Fax: (808) 956-2340
Web: socialsciences.hawaii.edu/

Dean: Denise E. Konan
Interim Associate Dean: Ross A. Sutherland

Departments, schools, and programs: Anthropology, Communications, Economics, Ethnic Studies, Geography, Journalism, Peace Studies, Political Science, Psychology, Public Administration, Public Policy Center, Social Science Research Institute, Sociology, Urban and Regional Planning, Women’s Studies

General Information

The Colleges of Arts and Sciences (A&S) are comprised of four colleges that offer an integrated curriculum leading to baccalaureate and graduate degrees, minors, and certificates in their respective colleges. Each college includes an administrative unit and a number of academic departments and programs.

An excellent education is the primary mission of UH Mānoa, and the Colleges of Arts and Sciences is at the heart of this mission, providing students with a comprehensive learning experience in a vibrant academic climate.

UH Mānoa undergraduates take many of their first UH Mānoa courses in the Colleges of Arts and Sciences as they undertake the General Education Core curriculum that is part of all the bachelor degrees offered on the campus. This liberal arts curriculum stresses the integration of knowledge to enhance students’ understanding of life, the human condition, and the world in which we live. The core curriculum also entails critical thinking, which enables students to evaluate arguments, ideas, and theories, and to develop creative and meaningful applications of what they learn. The core gives students the tools of inquiry, enabling them first to identify important questions and then to seek, analyze, and interpret possible answers to issues of their lives, world, and universe. The curriculum also provides opportunities to develop students’ artistic and creative imaginations and their oral and written communication skills so that they can effectively present their ideas, thoughts, and feelings. Since values guide human actions, the core curriculum allows students to examine their own values and learn about those of others in order to help students understand themselves and others around the world.

Students who earn their degrees in one of the Colleges of Arts and Sciences will find that an ideal education, based in the liberal arts, prepares students for productive lives and careers, enlightened citizenship, and lifelong learning. The colleges enhance students’ learning opportunities by promoting active participation.

Accreditations and Affiliations

All academic programs are reviewed and evaluated regularly by campus and external faculty committees. Some academic programs, because of the nature of the discipline, are also accredited or certified by national organizations. Check with individual academic departments and programs for their accreditation status or affiliation with national or international organizations.

Degrees, Minors and Certificates

For a listing of the degrees, minors, and certificates offered by the Colleges of Arts and Sciences, see table on p. 88.

Bachelor’s Degrees: Bachelor of Arts (BA), Bachelor of Fine Arts (BFA), Bachelor of Music (BMus), Bachelor of Science (BS)
Master’s Degrees: Master of Arts (MA), Master of Fine Arts (MFA), Master of Library and Information Science (MLISc), Master of Music (MMus), Master of Public Administration (MPA), Master of Science (MS), Master of Urban and Regional Planning (MURP)

Doctoral Degrees: Doctor of Philosophy (PhD)

Certificate Programs
In addition to the major concentrations that are part of every bachelor’s degree, students may choose to pursue a certificate in an area of personal interest. Certificates signify that a student has completed a defined body of work in a particular department or program. Certificates can be conferred as soon as the student completes the program’s requirements. The right to confer certificates has been granted to certain programs and departments by the Board of Regents; some certificates are only for graduate students. Certificates entail a minimum of 15 credit hours of non-introductory course work (including all upper division courses and those at the 200 level that have college-level course prerequisites), completed with a grade of C (not C-) or better and an overall GPA of 2.5 or better for those courses. Information on specific certificates can be obtained from the appropriate department or program office. See page 88 for a complete listing of certificate programs offered by the Colleges of Arts and Sciences.

Advising
Student Academic Services Office
QLCSS 113
Honolulu, HI 96822
Tel: (808) 956-8755
Fax: (808) 956-9796
Email: advising@hawaii.edu
Web: www.advising.hawaii.edu/artsci/

Within the context of a liberal arts education, the Colleges of Arts and Sciences Student Academic Services (CASSAS) assist students in clarifying their life and career goals, developing meaningful educational plans, and preparing for productive lives, enlightened citizenship, and life-long learning.

Students at UH Mānoa have exceptional freedom in crafting their college experience. Students are able to explore connections between fields, engage in co-curricular activities, and develop unique combinations of majors, minors, and certificates. Students are expected to be active partners in the advising process by initiating contact with both their major department and CASSAS and should come to all advising sessions prepared.

CASSAS has developed learning outcomes for Arts and Sciences majors based on current programs and services. The level of achievement for each of these outcomes becomes increasingly more complex throughout a student’s college career. As an active participant in the CASSAS advising partnership, students are able to:

- Identify and explain their interests, strengths, values, and career/life goals;
- Develop and implement an academic and educational plan; and
- Explain how the A&S degree prepares them for success in their personal, academic, and professional lives.

In addition to meeting all mandatory advising initiatives required by their major departments, declared Arts and Sciences majors meet with their CASSAS advisors throughout their career at UH Mānoa for clarification of degree requirements and for resolution of complex academic issues and individual concerns.

Incoming Students and Freshmen
Through group advising at New Student Orientation and individual appointments during their first year, new students begin their educational planning process with CASSAS advisors and meet with an advisor in their major department (see department listing).

Sophomores
Sophomores continue to seek the advice of both major and college-level advisors in order to clarify their goals, interests, and strengths. Sophomores reflect on their academic and co-curricular activities to ensure that they have chosen the appropriate major and are making progress toward graduation. The educational planning begun in their first year expands to include curricular and co-curricular courses and events.

Juniors
Juniors research the prerequisites for their future academic and/or professional lives (i.e., application materials, essential skills). Juniors prepare for graduation by filing for graduation and creating an educational plan that accounts for remaining course work and activities applicable toward their degree and future goals.

Seniors
Seniors finalize their educational plan to ensure it covers all academic and co-curricular components necessary for graduation. Students reflect on the meaning of their undergraduate education in the context of their goals, interests and strengths, and use this understanding to plan and take concrete steps towards post-graduation life.

Undergraduate Programs
The Colleges of Arts and Sciences offer Bachelor of Arts (BA), Bachelor of Fine Arts (BFA), Bachelor of Music (BMus), and Bachelor of Science (BS) degrees in 55 different majors. In addition, the Colleges of Arts and Sciences offer 29 minors and 37 different certificates. Detailed program information is available at the Student Academic Services office (QLCSS 113) or at www.advising.hawaii.edu/artsci.

Throughout their time at UH Mānoa, A&S students should meet with both their college and major advisors to discuss their educational plans.

Students interested in an A&S major should declare their major at least by the end of their sophomore year by submitting a Declaration of Major form to the A&S Student Academic Services office. Some majors, such as those in the performing arts, languages, and the sciences, should be declared as soon as possible, preferably during the freshman year, because they require courses that must be taken in a specific order. Information on specific majors, minors, and certificates is available through the respective academic departments and their websites.
Admission Requirements

Admission requirements for the Colleges of Arts and Sciences are the same as those for UH Mānoa.

Some majors and programs, however, have specific admission requirements (see departments’ sections).

Steps to Graduation

1. Complete the four requirement areas for undergraduate degrees as described in the following section and remain in good academic standing (see “UH Mānoa Graduation Requirements” under “GPA”).

2. File for graduation one to three semesters in advance by completing an Online Grad session available on the CASSAS website.

3. Pay the UH Mānoa diploma fee in order to receive a diploma.

Requirements for Undergraduate Degrees from the Colleges of Arts and Sciences

A&S degrees and a liberal arts education offer a broad-based and integrated perspective on the world and human experiences; better self-understanding; societal, civic, and global knowledge; an independent and inquiring mind; a desire and capacity for life-long learning; and valuable transferable skills.

Students are encouraged to explore connections between disciplinary fields, engage in co-curricular activities, and develop unique combinations of majors, minors, certificates, and electives.

A&S students must fulfill the following five areas of requirement: UH Mānoa General Education Core; UH Mānoa Graduation; A&S Degree; A&S College; and A&S Major. Students should refer to their respective “Program Requirement Sheets,” on the CASSAS website or on the OVCBA bachelor degree program sheets website, to assist them in selecting courses that integrate requirements.

UH Mānoa General Education Core Requirements

A&S students must fulfill the UH Mānoa General Education Core, which consists of Foundations and Diversification requirements. Some of the courses that fulfill these Core requirements may be double dipped with other requirements (see “General Education”).

The minimum course grade to fulfill Core requirements is a D (not D-). These requirements must be taken for a letter grade, unless the course is offered only with the CR/NC grade option.

UH Mānoa Graduation Requirements

A&S students must fulfill the UH Mānoa Graduation requirements, which consist of Focus, Hawaiian or Second Language (HSL), credit, and grade point average (GPA) requirements (see “General Education” and “Undergraduate Education”).

The minimum course grade to fulfill Focus and HSL requirements is a D (not D-). These requirements must be taken for a letter grade, unless the course is offered only with the CR/NC grade option.

Credits

Students must earn a minimum of 120 total applicable credits, of which at least 45 credits must be upper division (300-level and above) and at least 30 credits must be completed in residence at UH Mānoa. Natural Sciences majors should contact CASSAS for exceptions to the upper division requirement.

Students must complete their academic work and apply for a degree in a timely manner (see “Excess Credit Policy”).

Grade Point Average (GPA)

To graduate, students must earn a minimum of 2.0 GPA (C average) for all UH Mānoa registered credits and must not be on academic action (i.e., probation, suspension, dismissal).

Some majors or programs have specific GPA requirements (see department’s sections). Students with a cumulative GPA lower than 2.0 will be placed on academic action.

A&S Degree Requirements

The Colleges of Arts and Sciences offer Bachelor of Arts (BA), Bachelor of Fine Arts (BFA), Bachelor of Music (BMus), and Bachelor of Science (BS) degrees, each of which has specific requirements as listed below. Courses used to fulfill these requirements can double dip with UH Mānoa General Education Core, UH Mānoa Graduation, and A&S Major requirements.

Bachelor of Arts (BA), Bachelor of Fine Arts (BFA) and Bachelor of Music (BMus)

One of the following (these courses may also satisfy the UH Mānoa General Education Core “FS” requirement when designated as “FS” courses):

- BUS 250, ICS 141, 241, MATH 100, 112, 140, 161, 203, 215, 241, 251A, NREM 203, PHIL 110, 110A, 111, or SOCS 150

Bachelor of Science (BS)

- Calculus I: MATH 215, 241, or 251A (these courses also satisfy the UH Mānoa General Education Core “FS” requirement)
- Calculus II: MATH 216, 242, or 252A
- Chemistry: CHEM 161/161L and 162/162L or 171/171L or 181A/181L
- Physics: PHYS 151/151L and 152/152L or 170/170L and 272/272L (These Chemistry and Physics lecture courses also satisfy the UH Mānoa General Education Core “DP” requirement, and these lab courses also satisfy the UH Mānoa General Education Core “DY” requirement.)

Note: Many introductory science and mathematics courses require an assessment examination to determine appropriate placement. Information about assessment exams appears each semester in UH Mānoa’s Registration Guide or on the website at www.hawaii.edu/myuh/manoa/.

A&S Major Requirements

A&S major requirements further develop liberal arts skills and offer students specialization in an academic field of study.
Major requirements contribute to the ideal liberal arts education, which prepares students for productive lives and careers, enlightened citizenship, and lifelong learning.

Major requirements are explained in the department sections in this Catalog, in the online Catalog, and on the department websites.

The minimum course grade to fulfill major requirements is a C (not C-). These requirements must be taken for a letter grade, unless the course is offered only with the CR/NC grade option.

A&S students should meet regularly with both their major advisor in their department office and with an A&S college advisor in the Student Academic Services office (QLCSS 113).

**Multiple Majors/Degrees and Minors**

A&S students are encouraged to consider applying for additional majors/degrees, minors, or a combination. Pursuing additional academic fields of study can benefit students in many ways, including the opportunity to discover relationships across disciplines, develop diverse perspectives, strengthen one’s appreciation for the acquisition of knowledge in more than one academic field, and enhance one’s ability to problem solve and communicate in a variety of settings.

To be eligible, applicants for multiple majors/degrees and minors must be:
- enrolled as a classified Arts and Sciences student;
- in good academic standing (have a cumulative GPA of 2.0 or higher); and
- able to complete all requirements and still graduate in a timely manner.

To add a minor, students submit a “Certification of Minor” form. The colleges offer minors in 27 disciplines. Most minors require a minimum of 15 credits of non-introductory and upper division level course work, completed with a grade of C (not C-) or better.

To apply for multiple majors/degrees, students submit the following:
- Application to pursue multiple majors/degrees;
- An academic plan showing timely graduation; and
- A brief formal, written statement explaining motivation.

**Second Major Option**

Students who have already completed a baccalaureate degree and wish to add another major (rather than a complete second baccalaureate degree) should enroll as a Post-Baccalaureate Unclassified (PBU) student. Students interested in pursuing the post-baccalaureate Second Major Option should meet with an undergraduate advisor in the relevant department to request permission and to identify remaining requirements for the major.

**Second Baccalaureate Degree**

Priority for admission into any Arts and Sciences baccalaureate program is given to students seeking their first undergraduate degree. Applications must be received by the Office of Admissions by the established deadlines.

Applicants must meet all admission requirements for the degree program to which they are applying. Applications for a second baccalaureate degree will be considered only if there is a demonstrable difference in curricula and objectives between the two degrees and majors. Course work used towards a major/minor/certificate in the first degree cannot be used to satisfy major/minor/certificate requirements in the second degree, unless specific courses are required in both. Second degree students must earn a minimum of 30 credits in courses taken at UH Mānoa after admission as a second baccalaureate degree candidate while continuously enrolled in the colleges, and must satisfy all program requirements current at the time of official admission into the program. For more information, see the Arts and Sciences Student Academic Services website, www.advising.hawaii.edu/artsci/.

### REQUIREMENTS THAT MAY BE DOUBLE-DIPPED

This double-dip chart applies only to A&S degrees/majors on a 2002-2003 core year or later.

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Foundations</th>
<th>Diversification</th>
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<th>Focus</th>
<th>Major*</th>
<th>Second Major*</th>
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<th>Certificate</th>
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</table>

*Assumes A&S majors

To apply for multiple majors/degrees, students submit the following:
- Application to pursue multiple majors/degrees;
- An academic plan showing timely graduation; and
- A brief formal, written statement explaining motivation.

**REQUIREMENTS THAT MAY BE DOUBLE-DIPPED**

This double-dip chart applies only to A&S degrees/majors on a 2002-2003 core year or later.

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</table>

*Assumes A&S majors
Professional Programs

Pre-professional students, i.e., students who plan to pursue careers in professional fields such as Education, Engineering, Law, Medicine, Social Work, etc., often need extra course work, extracurricular activities, exams, and preparation and should seek academic advising as early as possible.

For almost all professional schools, a liberal arts education such as that offered in the Colleges of Arts and Sciences provides an essential foundation. Some professional schools admit undergraduate students in transfer; others require that students complete a baccalaureate degree before being admitted. Most professional schools also have specific prerequisites that students must complete before applying.

Pre-professional students should consult both the recommendations set by the appropriate national organization and the specific prerequisites of the professional schools they hope to attend.

Students interested in health and law careers should visit the Pre-Health/Pre-Law Advising Center (PAC), a walk-in resource center located in Sinclair Library 108. PAC is staffed by trained peer advisors who assist students in clarifying career goals, choosing a major, planning appropriate course work, finding opportunities to gain experience, and applying to schools.

Graduate Programs

Information regarding graduate programs and admission is in the “Graduate Education” section of the Catalog. Check each department’s section for information about their specific program(s) and requirements.

Student Organizations

Societies and clubs associated with many departments within the Colleges of Arts and Sciences give students opportunities to explore a field from an informal perspective, get acquainted with other students with similar interests, and learn of the options available upon graduation. The Colleges of Arts and Sciences highly recommend active student involvement in these associations for the academic and professional enhancements they provide. Check with your major department’s advisor for information.

Honors and Awards

Scholarships and Awards

The Colleges of Arts and Sciences and their departments provide scholarships and awards to exceptional students. For a selective list of scholarships, see “Tuition, Fees, and Financial Aid.” If you wish specific information on prizes or scholarships offered through the Colleges of Arts and Sciences, contact the appropriate department.

Honor Societies

Honor societies at UH Mānoa in the Colleges of Arts and Sciences include Alpha Kappa Delta (sociology), Beta Phi Mu (library science), Delta Phi Alpha (German), Golden Key National Honour Society (undergraduate), Kappa Tau Alpha (journalism), Lambda Delta (freshmen), Mortar Board (seniors), Omicron Delta Epsilon (economics), Phi Alpha Theta (history), Phi Beta Kappa (liberal arts and sciences), Phi Eta Sigma (freshmen), Phi Kappa Phi (general scholarship), Pi Delta Phi (French), Pi Kappa Lambda (music), Pi Sigma Alpha (political science), Psi Chi (psychology), Sigma Delta Pi (Spanish), Sigma Pi Sigma (physics), and Sigma Xi The Scientific Research Society (sciences).

Instructional and Research Centers

(housed in the College of Languages, Linguistics & Literature)

Center for Biographical Research
Web: www.hawaii.edu/biography

The Center for Biographical Research (CBR) is dedicated to the interdisciplinary and multicultural study of life writing. CBR programs include teaching, publication, and outreach activities.

In conjunction with the Department of English, CBR offers thesis advising for PhD and MA projects, and awards the Biography Prize annually for work in life writing by a UH Mānoa graduate student. The Department of English also offers a number of graduate and undergraduate courses in life writing. A BA program in biography is offered through the Interdisciplinary Studies Program.

CBR publishes Biography: An Interdisciplinary Quarterly, the premier scholarly journal in the field. Appearing continuously since 1968, Biography explores the theoretical, historical, generic, and cultural dimensions of life writing. CBR also sponsors the Biography Monograph series, a book publishing enterprise designed to further the study and practice of life writing in all its forms.

CBR maintains a library and resource collection and has hosted, since 1988, the public lecture series Brown Bag Biography, part of the center’s commitment to supporting and publicizing contributions to life writing. CBR is a founding partner of Biography Hawai’i, a television documentary series that focuses on residents whose lives have had a lasting impact on these islands. The center also hosts iaba-l@hawaii.edu, the listserve and discussion forum for the International Auto/Biography Association.

Center for Interpretation and Translation Studies
Web: cits.hawaii.edu

The Center for Interpretation and Translation Studies (CITS) was established in 1988 at UH Mānoa within the College of Languages, Linguistics & Literature. The center’s primary goal is to provide basic training in translation and interpretation. Emphasis is on the sociolinguistic and communication skills and techniques needed to facilitate cultural, scientific, and technical exchanges in cross-cultural and multinational settings. These skills can be used at international conferences, as well as in medical, legal, and social service settings. Given our commitment to the community, a number of CITS courses are made available to non-UH Mānoa students through Outreach College. Generic courses are conducted in English, and any language speaker is welcome. Language-specific courses
may require proof of language proficiency before enrollment. Currently interested students can receive a BA in Translation and/or Interpretation through Interdisciplinary Studies.

The Center offers a six-week, non-credit Summer Intensive Interpreter Training program (SIIT) every other year through Outreach College. This high-level certificate training program is offered in English in combination with Japanese, Mandarin, Spanish, and Korean.

**Center for Language and Technology**
Web: clt.manoa.hawaii.edu

The mission of the Center for Language & Technology (CLT) is to support the informed use and integration of technology into instruction and research in the curriculum of the College of Languages, Linguistics & Literature.

The CLT fulfills its kuleana by: a) supporting the research and development of technology-based materials for language teaching and learning; b) providing faculty development opportunities for technology integration into the curricular areas of the college; c) providing professional enrichment opportunities to teaching assistants; d) providing expertise in media design, production and delivery; e) researching and supporting innovative technology tools and pedagogical approaches that are specific to the curricular areas of the College; and f) providing technology resources and services that are specific to the curricular areas of the college.

The CLT additionally provides leadership and guidance in the creation of online learning experiences. In the last few years, activities in this area have included the creation and implementation of a review process to assist online-teaching faculty in the development and maintenance of quality online courses. The CLT also supports faculty by providing expert feedback throughout the process as well as numerous opportunities for professional development in this area, with a particular emphasis on the academic areas of the college.

To fulfill its mission to support informed use of technology in instruction, the CLT provides flexible, technology-rich physical spaces that are designed with consideration of the specific academic areas of the college. Faculty can avail themselves of facilities such as broadcast-standard video and audio production suites, a state-of-the-art project development room, a high-end theater projection room, web-conferencing meeting rooms, and a smart classroom primarily intended for instructional research and special projects. Technologies available to instructors include physical and virtual technology tools. The former includes a variety of audio-visual equipment available for check out; the latter includes specialized technologies developed in-house.

The CLT regularly hosts local, national, and international events sponsored by various units in the college, collaborates with several campus units, and also conducts outreach activities to support Hawai’i’s language-teaching community.

**National Foreign Language Resource Center**
Web: nflrc.hawaii.edu

The National Foreign Language Resource Center (NFLRC) is one of 16 Language Resource Centers across the U.S and the only one to have been continuously funded since the inception of the original three centers established by the Department of Education in 1990. The ultimate mission of the NFLRC is to improve the learning and teaching of world languages while focusing primarily on the underserved populations of both teachers and students of the less commonly taught languages of Asia and the Pacific.

Taking advantage of Hawai’i’s geographic location and drawing on the rich expertise of the College of Languages, Linguistics & Literature, the NFLRC works to improve teaching through the production and dissemination of a broad range of resources, including instructional materials, scholarly books, and edited collections. Online resources include three e-journals, video and audio archives, and bibliographic databases.

NFLRC works closely with the Center for Language & Technology on a number of initiatives, for example, developing and researching instructional models that combine distance and face-to-face instruction and collaborating in the design and development of technologies that support those models. Throughout the year, the NFLRC hosts co-hosts local, national, and international conferences and workshops.

**Academy for Creative Media**

College of Arts and Humanities
Crawford 210
2550 Campus Road
Honolulu, HI 96822
Tel: (808) 956-7736
Fax: (808) 956-6662
Email: acm@hawaii.edu
Web: www.hawaii.edu/acm/

**Faculty**

A. Misawa, MFA (Chair)—cinematic and digital production
M. Booth, MFA—documentary, critical studies
D. Boulos, MEd—animation
T. Brislin, PhD—media ethics; critical studies
L. Flanary, MFA—screenwriting, indigenous filmmaking
V. Hereniko, PhD—critical studies, cinematic and digital productions, screenwriting
V. Mih, MFA—animation
J. Moffett, MFA—screenwriting, cinematic & digital production
K. Ng, PhD—critical studies
G. Wang, MFA—post production

**Degree Offered:** BA in creative media

**The Academic Program**

The Academy for Creative Media (ACM) emphasizes narrative, or storytelling, theories, skills, and application across multiple platforms of digital media and within a context of cultural and aesthetic values. More than just a “film school,” ACM seeks to empower students to tell their own original and authentic stories of Hawai‘i, the Pacific, and Asia rather than have those stories told for them through a different cultural lens that is distant and often distorted.

ACM offers a core curriculum and specialized courses in three tracks: Digital Cinema, Computer Animation, and Critical Studies. A catalog of courses, academic planning guidelines, and program information can be found on the Academy’s website at: www.hawaii.edu/acm.

* Graduate Faculty
Undergraduate Study

Bachelor’s Degree
Students have the flexibility to design an academic program around a core of ACM courses and electives including a variety of UH Mānoa departments offering courses in film and media studies. Students work in close consultation with faculty to develop a program that reflects the development of academic, writing, creative, and critical thinking skills.

Requirements
To declare a major in Creative Media, students must:
- Have completed or be enrolled in ACM 255 Cinema and Digital Media, and have completed 12 or more credit hours with an overall 2.75 GPA;
- Be enrolled in the Colleges of Arts and Sciences.

To complete the creative media major, students must design a detailed and acceptable academic plan, under the guidance of an ACM faculty advisor, consisting of 36 credit hours that emphasizes one of the three ACM tracks, includes the required core of ACM courses, and is supplemented with elective courses. Six credit hours of electives may be taken from departments outside of ACM.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Required Courses
- ACM 255
- ACM 310 or 316
- ACM 350 or 355
- 9 credits from any of the following: ACM 352, 360, 380, 382, 385, 460, 480, 482, 485, and 490
- 12 credit hours from one of three ACM degree tracks

Computer Hardware and Software Requirements
The curriculum of the Academy for Creative Media requires students to have access to a laptop computer. Hardware and software specifications can be found at www.hawaii.edu/acm/computer.

Advising
Introductory information on the academy, including guidelines for academic planning, can be found at www.hawaii.edu/acm. All students accepted for the major are assigned a faculty advisor. Advising is mandatory to design the student’s academic plan, and for any subsequent changes.

American Studies
College of Arts and Humanities
Moore 324
1890 East-West Road
Honolulu, HI 96822
Tel: (808) 956-8570
Fax: (808) 956-4733
Email: amstuh@hawaii.edu
Web: manoa.hawaii.edu/amst/

Faculty
* D. Stannard, PhD (Chair)—social and cultural history, race and racism, colonialism and genocide
* W. Chapman, PhD—historic preservation
* E. Colwill, PhD—gender, slavery, and Revolution in the Atlantic world
* J. Eagle, PhD—film/media, gender studies, U.S. cultural history
* V. Gonzalez, PhD—American empire, tourism and militarism, gender and sexuality, ethnic and cultural studies
* N. Kahanu, JD—public humanities and Native Hawaiian programs
* K. Kosasa, PhD—visual and cultural studies, museum studies, critical pedagogy
* L. J. Mariano, PhD—Filipino American studies, diaspora studies, Asian American studies
* B. McDougall, PhD—indigenous studies, literary studies
* D. Ogawa, PhD—intercultural and Japanese American studies
* R. Perkinson, PhD—southern and western history, race and class, crime and punishment, American empire
* K. Sands, PhD—religion in America, religion and law, women in religion, Christian history, theory of religion
* J. Stanton, PhD—culture and arts
* M. Yoshihara, PhD—U.S. cultural history, U.S.-Asian relations, Asian American studies, literary and cultural studies, gender studies

Cooperating Graduate Faculty
K. Ng, PhD—religion in America, religion and law, Christian history, theory of religion

Affiliate Graduate Faculty
A. Kikumura-Yano, PhD—Japanese-American studies, Asian American studies, museum studies
K. Yamazato, PhD—American literature and culture

Degrees and Certificates Offered: BA (including minor) in American studies, MA in American studies (including dual AMST/MLISc MA), PhD in American studies, Graduate Certificate in Historic Preservation, Graduate Certificate in Museum Studies

The Academic Program
Since its inception in the 1930s, American Studies (AMST) has offered an integrated multidisciplinary exploration of the historical and contemporary American experience. This involves the study of American popular and high culture; environmental issues; institutional structures, including political and economic institutions; systems of thought and belief; and gender, ethnic, racial, and cross-cultural relationships. A combination of historical, literary, social-scientific, and other methodological approaches is used. In addition to such traditional aims, American studies at UH Mānoa also explores the role of Hawai‘i, the Pacific, Asia, and, to a lesser extent, other parts of the world within the American experience, an objective that imparts a cross-cultural dimension to its program and differen-

* Graduate Faculty
states it significantly from most other programs in the field.

At the undergraduate level, American studies offers a balanced general education experience, as well as excellent preparation for both advanced study in the field and professional studies ranging from law to travel industry management. Advanced degrees are intended primarily as preparation for college and university-level teaching, but recipients are also engaged in such activities as journalism, library management, business administration, and government service. A dual MA can be taken in cooperation with the Library and Information Science Program. In addition to regular degrees, graduate certificates are offered in historic preservation and museum studies.

Affiliations

The department is affiliated with the American Studies Association, American Association of Museums, Hawai‘i Museums Association, National Council of Preservation Education, and National Trust for Historic Preservation.

Advising

The undergraduate advisor advises all undergraduate majors, and the graduate chair advises all graduate students.

Undergraduate Study

Bachelor’s Degree

Requirements

- Students must complete 30 credit hours, including:
  - 21 credit hours of AMST upper division courses, including AMST 381, 382, 480, and 481 or 482 (one lower division course may now be counted)
  - 9 remaining credit hours may include upper division courses in either AMST courses and/or allied humanities and social sciences courses (no more than 3 credit hours of 499 may be counted). These courses must be approved by the undergraduate advisor or be listed in the “pre-approved” allied course list on the department website.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Minor Requirements

- Students must complete 15 credit hours, including:
  - AMST 381 and 382
  - 9 credit hours of 300- or 400-level American studies electives

Graduate Study

Application Requirements

Applicants for graduate programs should present an academic record indicating a broad range of study in the humanities and the social sciences with an emphasis on American culture. In addition to the admission requirements of Graduate Education, the applicant should have a copy of his or her latest GRE scores, Graduate Program Supplemental Information form, Statement of Objectives, and at least two letters of recommendation sent directly to the department. Each letter of recommendation should have the “Waiver of Access to Confidential Letters/Statements” form attached to it. PhD applicants are also required to submit a writing sample, preferably a paper that was written for a graduate course. Applications for graduate admission are considered for either fall (September-December) or spring (January-May) semester. Application deadlines for local and mainland applicants are: February 1 for fall; September 1 for spring. Application deadlines for foreign applicants are: January 15 for fall; August 1 for spring. There is no summer admission to advanced degree programs in Graduate Education. There is an application fee.

Proficiency in a foreign language is not required unless it is necessary for dissertation research. Students having a special career interest in Asia may select courses offered in the Asian studies program to satisfy some degree requirements in American studies.

Courses for the graduate program are to be selected from among the courses listed in the back of the Catalog, from appropriate American studies graduate courses and upper division and graduate courses in related fields. Consent of the departmental graduate chair is required for enrollment in all undergraduate courses and all graduate courses in other fields. The courses listed in the back of the Catalog are numbered and grouped as follows: 500, Master’s Plan B/C Studies; 600–609, introductory courses; 610–689, fields of study courses; 690–699, special topics courses; and 700–800, thesis and dissertation research. AMST 500V, 699V, 700V, and 800V are offered each semester; AMST 600, 601, and another graduate course to be specified by the graduate chair are offered annually, and most other 600-level courses are offered once every three years.

Master’s Degree

MA candidates are expected to possess the BA degree and have a background knowledge of American culture.

Requirements

- MA students may select either the Plan A or Plan B program. Students must complete 30 credit hours as follows:

  Plan A (Thesis)
  - 3 core courses, including AMST 600, 601, and another graduate course to be specified by the graduate chair
  - 2 AMST graduate seminars
  - 3 AMST graduate seminars or electives
  - 2 Capstone (Thesis) AMST 700
  - oral examination

  Plan B (Non-thesis)
  - 3 core courses, including AMST 600, 601, and another graduate course to be specified by the graduate chair
  - 2 AMST graduate seminars
  - 3 AMST graduate seminars or electives
  - written and oral examinations

More specific requirements are detailed on the American studies website at: manoa.hawaii.edu/amst.

Doctoral Degree

PhD candidates are expected to possess the MA degree in American studies or its equivalent and should have a scholarly attainment of a high order and widespread intellectual interests. In most instances, admission to the PhD program requires applicants to possess an MA degree. However, occasionally an applicant with a BA and exceptionally strong credentials may be admitted directly into the doctoral program.

Requirements

- Students must complete 45 credit hours including:
  - 3 core courses, including AMST 600, 601, and another graduate course to be specified by the graduate chair
■ 4 or more AMST graduate seminars
■ 5 or more AMST graduate seminars or graduate electives in other disciplines in a chosen field of specialization (one 400-level course permitted)
■ up to 9 credits of AMST 699

Students must also complete:
■ A qualifying and comprehensive examination
■ An oral comprehensive examination administered by the dissertation committee
■ A dissertation of high quality and its successful oral defense

Certificate
Graduate Certificate in Historic Preservation
Candidates for the Certificate in Historic Preservation must possess a BA degree. The Certificate in Historic Preservation combines course work and applied experience.

Requirements
Students must complete 15 credit hours of graduate course work:
■ 3 credit hours of ANTH 645, Historic Preservation
■ 3 credit hours of AMST 675, Preservation: Theory and Practice
■ 3 credit hours of AMST 695, Historic Preservation Practicum
■ 6 credit hours in field of specialization

A maximum of 6 credit hours may be applied simultaneously to the historic preservation certificate and to another degree. Internships are usually undertaken with local firms and organizations that have a preservation interest or with individuals who are qualified to direct independent work in preservation. The program concludes with a formal colloquium presentation. More information is available on the Historic Preservation Program’s website at manoa.hawaii.edu/amst/historic-preservation/the-field/.

Graduate Certificate in Museum Studies
Candidates for the Certificate in Museum Studies must possess a BA degree. The Museum Studies Graduate Certificate Program provides an opportunity to learn about museums, acquire professional experience, and develop research skills.

Requirements
Students must complete 18 credit hours of graduate course work:
■ 3 credit hours of AMST 683, Museums: Theory, History, Practice
■ 3 credit hours of AMST 684, Museums and Collections
■ 3 credit hours of AMST 685, Museums and Education
■ 3 credit hours of AMST 686, Museum Studies Practicum
■ 6 credit hours of electives

A maximum of 6 credit hours may be applied simultaneously to the Museum Studies Certificate and to another degree. Internships are usually undertaken with local museums and related institutions or organizations and under the direction of a supervisor qualified to direct independent work in a museum related project. The program concludes with a formal colloquium presentation. For more information, see manoa.hawaii.edu/amst/museum-studies/about-museum-studies/.

Anthropology
College of Social Sciences
Saunders Hall 346
2424 Maile Way
Honolulu, HI 96822
Tel: (808) 956-8415
Fax: (808) 956-4893
Email: anthprog@hawaii.edu
Web: www.anthropology.hawaii.edu

Faculty
*C. E. Peterson, PhD (Chair)—archaeology, comparative study, early complex societies, regional settlement patterns, household archaeology, quantitative methods; China
*C. J. Bae, PhD (Graduate Chair)—biological anthropology, paleoanthropology, vertebrate taphonomy, Out of Africa I, modern human origins; China, Korea, Japan
*A. Golub, PhD (Undergraduate Advisor)—cultural anthropology, kinship and identity, governance, indigenous land tenure, mining and natural resources, common and intellectual property, semiotic technologies, Papua New Guinea, Melanesia, massively multiplayer online video games
*J. M. Bayman, PhD—archaeology, craft economies; North America, U.S. Southwest, Hawai‘i
*C. F. Blake, PhD—critical and interpretive theory, ethnography and biography, popular ideologies, social movements and entrepreneurship in the modern world economy; China, U.S.
*J. Brunson, PhD—medical anthropology, fertility and reproduction, maternal health, new medical technologies, structural and interpersonal violence, gender, family; Nepal
*J. Padwe, PhD—environmental anthropology; agro-ecology; war and the environment; ethnicity; Southeast Asia (Cambodia), South America (Paraguay, Bolivia)
*M. Pietrusewsky, PhD—physical anthropology, skeletal biology, forensic anthropology; Oceania, SE and East Asia, Australia
*B. V. Rolett, PhD—archaeology; Pacific Islands, Southeast China
*E. J Saethre, PhD—medical anthropology, indigenous health, HIV/AIDS, biomedical interventions; Aboriginal Australia, South Africa
*A. M. Sakaguchi, PhD—medical anthropology, public health, medical malpractice, globalization and its impact on emerging and re-emerging diseases, health disparities, health care disparities, Japanese literature and history
*M. Stark, PhD—archaeology ecology, early village economies, ceramics, ethnarchaeology; Southeast Asia, U.S. Southwest
*T. P. K. Tengan, PhD—cultural anthropology, indigenous theory and methodology, colonialism, nationalism, identity, gender, cultural politics; Pacific, Hawai‘i
*G. M. White, PhD—cultural anthropology, history and memory, self and emotion, ethnographic methods; Pacific Islands, America
*C. Yano, PhD—cultural anthropology, popular culture, ethnomusicology, cultural nationalism, emotions; Japan, Japanese Americans

Cooperating Graduate Faculty
D. Brown, PhD—physical anthropology, medical anthropology; Polynesia
R. Cann, PhD—physical anthropology, anthropological genetics, human populations
W. Chapman, PhD—historic preservation, historical archaeology, history of anthropology

* Graduate Faculty
C. Clayton, PhD—cultural anthropology; sovereignty and colonialism; nationalisms and transnationalisms; history, memory and place-making; China and East Asia
E. Drechsel, PhD—historical sociolinguistics, ethnohistory, North American Indians; North America
S. Falgout, PhD—cultural and historic anthropology; Micronesia
M. Hamnett, PhD—applied policy research, economic development, research management; Oceania
R. Labrador, PhD—cultural anthropology, identity, immigration political economy, globalization and diaspora; Hawai‘i/Pacific, Philippines, Filipina/American and Asia Pacific America
G. G. Maskarinec, PhD—anthropology of language (Nepalese oral texts), western biomedical clinical medicine, medical education and indigenous medical systems of S. Asia; religions (belief systems, ritual and performance)
P. Mills, PhD—archaeology, culture contact, linguistic analysis, ethnohistory; Polynesia, North Pacific, North America
W. Nishimoto, PhD—oral history, ethnographic interviewing; Hawai‘i
J. Y. Okamura, PhD—ethnicity and ethnic relations, Asian American studies; Philippines, Hawai‘i
M. Sharma, PhD—political economy, development, class formation, and gender relations, radical feminist theory; India

Affiliate Graduate Faculty
J. S. Athens, PhD—evolutionary and agricultural ecology, origin of agriculture, development of complex societies, tropical paleoenvironmental (Ecuador, Oceania), archaeology of Ecuador, Micronesia, and Hawai‘i, CRM issues, management and administration
L. Barton, PhD—archaeology of archaic and modern humans in northeast Asia; transition to agriculture in Northern China
R. A. Bentley, PhD—complexity theory, the prehistoric spread of agriculture into Europe and the effects of human interaction on cultural evolution
K. Brown, PhD—cultural anthropology; family histories; farmer production decision; religious syncretism; ethnicity and the Emperor; globalization and food, family and car culture; Japan
C. K. Cachola-Abad, PhD—archaeology, oral traditions, historic preservation, evolution; Hawai‘i and Polynesia
E. Cochrane, PhD—evolutionary theory, cultural transmission, archaeological science, Oceania, Fiji, ceramics
S. Collins, PhD—archaeology, human and faunal osteology, historic preservation compliance and practice; Hawai‘i and the Pacific
M. T. Douglas, PhD—physical anthropology, skeletal biology, bioarchaeology, paleopathology; Oceania, Southeast Asia
T. Dye, PhD—archaeology; Hawai‘i and the Pacific
J. Fox, PhD—land use, forest resources and management GIS and spatial information technology; South Asia, Southeast Asia
R. Gould, PhD—ethnoarchaeology, hunter-gatherer ecology, maritime archaeology forensic archaeology, Australian Aborigines
T. D. Holland, PhD—physical and forensic anthropology, skeletal biology; U.S. Midwest, Southeast Asia
T. Jiao, PhD—transition from hunting-gathering to farming, maritime adaptation, complex society, early state formation; China, southeast Asia
K. Kahn, PhD—archaeology, lithic technology, household archaeology, monumental architecture and landscapes; Hawai‘i, French Polynesia, and the Pacific
L. Kealhofer, PhD—Southeast Asia and Near East; landscape approaches; paleobotany; land use and environmental change in complex societies; political economy
L. Lindstrom, PhD—cultural anthropology, sociolinguistics, ethnohistory, social theory; Oceania, Vanuatu
M. Mulrooney, PhD—Pacific archaeology, Hawaiian archaeology, geographic information systems, chronometric dating analysis, landscape archaeology, exchange and interaction, social complexity, agricultural intensification, ideological legitimization of power, contact and colonialism
J. A. Peterson, PhD—archaeology, historical ecology, landscapes, historical archaeology; Hawai‘i-Pacific, Philippines, American Southwest
M. Tomlinson, PhD—cultural and linguistic anthropology, religion and ritual, discourse analysis, Christianity; Fiji, Oceania
D. Y. H. Wu, PhD—cultural anthropology, ethnicity, anthropology of food; China and Chinese diaspora
D. Yen, PhD—ethnobotany; Oceania, Southeast Asia

Adjunct Faculty
J. Baker, PhD—medical and nutritional anthropology, anthropology of food, ethnopharmacology, science and technology studies; Oceania
N. I. Cooper, PhD—socio-cultural anthropology, performance, gender, expressive culture, ritual and religion; Southeast Asia, Indonesia, Java, Singapore
L. Gollin, PhD—medical anthropology, ethnobotany and ethnobiology, local ecological knowledge, cultural resource management, oral histories; Indonesia and Hawai‘i
J. Jin, PhD—zoarchaeology, vertebrate taphonomy, human skeletal biology, forensic anthropology, paleoanthropology; China, Korea
G. Pigliasco, PhD—cultural and legal anthropology, visual anthropology, ritual and performance commodification and tourism; Oceania, Fiji
J. Rensel, PhD—socioeconomic history, housing change, migrant communities; Polynesia
P. J. Ross, MA—quantitative methods, nutritional and medical anthropology; West Africa

Degrees Offered: BA (including minor) in anthropology, MA in anthropology, PhD in anthropology

The Academic Program
Anthropology (ANTH) is the comparative study of human societies, of the origin and evolution of our species, and of the ways of life of ancient and modern people. It is divided into four main subdisciplines: archaeology, cultural anthropology, linguistic anthropology, and physical anthropology. While physical anthropologists focus upon our biological nature, cultural anthropologists deal with ways of life past and present. Anthropological linguists look at language as a part of human behavior, while archaeologists study the remains of past cultures to reconstruct former lifestyles.

Students of anthropology gain a basic understanding of the cultural basis of human society, and of the origin and development of humanity useful both for understanding the human condition and as a preparation for work in many fields, not just in anthropology. For example, the department offers a uniquely broad range of courses on the cultures of Asia and the Pacific, as well as on aspects of American society, that provide students with a fund of cultural knowledge and insights upon which to build a career in law, medicine, public health, teaching, business, and other professions. While some BA graduates in anthropology find employment in anthropology, normally an MA or PhD is required to work as an anthropologist in a university, museum, or other institution. The department has a long-standing graduate program, which trains students in all aspects of anthropology, focusing especially on Asia and the United States.
Pacific. The training emphasizes field research; in any one year students are engaged in such projects as excavating an ancient religious temple on Tahiti, recording ritual life in rural Java, or analyzing the social system of a Japanese factory.

**Undergraduate Study**

**Bachelor’s Degree**

**Requirements**
- Students must complete 31 credit hours, including these required courses:
  - ANTH 152, 210, 215, 215L and 490
  - Six 300- and 400-level courses
- Three of the 300- and 400-level courses may be from related disciplines with prior approval of the student’s advisor.
- For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

**Minor**

**Requirements**
- Students must complete 15 credits of upper division anthropology courses which include one theory course and one methods course. It is highly recommended that students take ANTH 300 (Study of Contemporary Problems) to complete the theory requirement. Alternatively, they may take any 400-level course designated as a theory course by the Department of Anthropology. Students must also take one upper division course designated as a methods course by the Department of Anthropology. Courses will be chosen by the student, in consultation with the undergraduate advisor, to suit the student’s needs and interests. Courses must be completed with a grade of C (not C-) or better.

**Graduate Study**

Intended candidates for the MA or PhD need not have an undergraduate background in anthropology. All applicants must submit to the department GRE General Test scores and three letters of recommendation at the time of application. Lack of previous training in anthropology may result, however, in study to fill gaps in knowledge. All incoming students are required to attend the Anthropology Colloquium Series in the first two semesters. Applications for admission will be considered for the fall semester only. The deadline for submission of applications, including international students, is December 1.

The MA program ensures that graduates grasp fundamentals in their elected subfields, while the PhD program provides an opportunity for further specialization.

**Master’s Degree**

Admission to MA candidacy is based upon a candidacy conference with the student and his or her three-person committee held sometime prior to the end of the student’s second semester in residence. At that time the student submits in writing, a proposed program of study that the committee must accept before the student is admitted to candidacy.

**Requirements**
- A candidate for the MA must take three out of four core courses (archaeology, linguistic anthropology, physical anthropology, and cultural anthropology). A core course may be repeated once. A student may take additional core courses to fulfill other course requirements.
- An MA candidate must also pass two courses in each of the following categories: method or technique, theory or topic, and culture area. If a candidate needs a course from one of the three categories in his or her program of study and that course is not offered by the department on a timely basis, he or she may petition the graduate chair to substitute a course from outside the department, provided petition is made prior to registration for the course in question. A candidate is required to earn 30 credit hours. A minimum of 18 credit hours must be taken in the department. Graduate students must maintain at least a B (3.0) average. All courses taken for degree credit must be taken for a letter grade.

**Plan A**
- 24 credit hours of course work
- Thesis (6 credit hours)
- Minimum of 12 credits in graduate level courses numbered 600 and above

**Plan B**
- 30 credit hours
- Three papers on anthropological topics, one of which shall be a research proposal to the committee as evidence of scholarly ability
- Minimum of 18 credits in graduate level courses numbered 600 and above

**MA Track in Applied Archaeology**

Please consult departmental and graduate college guidelines for application instructions. Applicants to our Applied Archaeology MA program should explicitly note in their statement of purpose and other correspondence that they are applying to the MA Track in Applied Archaeology, which is a Plan B program. Students who are admitted to the applied program will be assigned an interim advisor upon their acceptance. By the end of the second semester, a student must select a committee of three anthropology faculty, one of whom will serve as her or his committee chair. A student must complete a report on original research, or three publishable papers.

Students who wish to enter the doctoral program, upon completion of the MA Track in Applied Archaeology, must reapply for admission to the anthropology program.

**Doctoral Degree**

A student completing the requirements for the MA may request admission to the PhD program by filling out a Petition for Admission to a Doctorate in Same Discipline (found on the Graduate Education website) and submitting the form to the departmental Academic Specialist. This form will be forwarded to the Graduate Education based upon the approval of the graduate chair.

Before the graduate chair can formalize his recommendation, a meeting must be convened consisting of all Anthropology faculty members with whom the student has taken graduate-level courses. They will evaluate the MA thesis or three papers and review the quality of previous graduate work. The faculty will then make their recommendations to the graduate chair to admit or not to admit the student to the doctoral program.

Admission to the PhD program requires a two-thirds majority of favorable versus unfavorable recommendations from the Anthropology faculty members. The student will receive written notification from the Graduate Dean.
Requirements

PhD candidates must fulfill the requirements for an MA degree in anthropology as a prerequisite. Requirements for obtaining a PhD include submitting an acceptable program plan at a candidacy conference, passing a comprehensive examination, formulating an acceptable dissertation proposal, writing an acceptable dissertation, and successfully defending this dissertation.

A student entering the PhD program with an MA degree from another department of anthropology must pass the core course in his or her area of specialization with a grade of B (3.0 GPA) or better. This course may be challenged by examination in lieu of taking it for credit. All students are required to take graduate courses (other than reading courses) from at least four different members of the anthropology department.

After admission to the PhD program, the student will form a five-member committee. More members may be added if deemed desirable and consistent with a candidate’s interest. At least one person must be a graduate faculty member of another department, but the majority of members must be from the Department of Anthropology. Substitutions may be made at any time if a member of the committee is unavailable.

All students entering the PhD program, including those obtaining an MA from the department, are strongly advised to hold a candidacy conference and gain written approval of their five-member committee for the projected program of study by the second semester.

Approximately one semester prior to the comprehensive examination, the student shall submit a detailed description of the areas to be covered, complete with bibliography. The candidate is expected to have read the items contained in the bibliography and be prepared to discuss them in some depth. It is the responsibility of each committee member to suggest additional readings for the bibliography and to suggest any other changes in the proposed agreement. After all committee members have been duly consulted, the student will prepare a final description to be signed by all concerned, including the student, and to be filed with the graduate chair.

The comprehensive examination shall be administered in two parts: (a) a written examination, and (b) an oral exam, at which the student will be given the opportunity to clarify and amplify answers to the written component. The written exam will consist of one essay question submitted by each member of the student’s committee. It will be closed-book; students will not be permitted to use notes or other aids. An allotment of three hours per question will be given. Scheduling will be flexible, but the total exam must be taken within a two week period.

The oral examination is expected to be scheduled not less than one week and no more than two weeks after the written examination. All members of the committee must be present at the examination. At the oral exam the student will be asked to explain and/or defend answers to the written component. Two hours are to be allotted for this exercise.

If a student fails the comprehensive examination, he or she may be allowed to repeat it. If this examination is failed a second time, the student will be dropped from the graduate program. The committee will provide each student with a written statement detailing the reasons for a negative decision.

After successfully completing the comprehensive examination, the student is required to submit a research proposal for review by the degree committee. A meeting of the committee will be scheduled within two weeks of submission of a final draft of the proposal; the committee will determine whether or not the student is adequately prepared for the fieldwork proposed. A candidate whose field research proposal is approved and who has completed all other requirements is eligible to receive a university ABD certificate.

A student conducting dissertation research among people who do not speak the student’s native language will be required, before leaving for the field, to show evidence of oral competence in the most useful field language or training in linguistic field techniques.

Following the student’s submission of a final draft of the dissertation, an oral defense will be scheduled. It is the student’s responsibility to see that each member of the committee has a copy of the complete final draft of the dissertation at least four weeks before the scheduled date of the oral defense. All members must be present at the oral defense. Procedures for determining final acceptance of the dissertation and awarding the PhD degree are set forth by Graduate Education. A candidate must complete all the requirements within seven years after admission to the doctoral program. A student unable to meet this deadline may request an extension by written petition to the graduate chair describing reasons for the delay. If approved, the request will be sent to the graduate dean for a final decision.

Art and Art History

College of Arts and Humanities
Art 142
2535 McCarthy Mall
Honolulu, HI 96822
Tel: (808) 956-8251
Fax: (808) 956-9043
Email: uhart@hawaii.edu
Web: www.hawaii.edu/art/

Faculty
*G. Chan, MFA (Chair)—photography
*K. Lingley, PhD (Associate Chair)—Chinese art history
*L. Andrews, PhD—Western art history
*M. Babcock, MFA, PhD—fiber
*R. Bengston, MFA—gallery director
*A. Bush, MFA—graphic design
*P. Chamberlain, MFA—electronic arts
*C. Cohan, MFA—printmaking
*D. Drexler, MFA—drawing and painting
*S. Groeniger, MFA—digital imaging
*J. Hamilton Faris, PhD—contemporary art history and theory
*W. Kawabata, MFA—drawing and painting
*P. Lasy, PhD—South and Southeast Asian art history
*C. Lee, MFA—graphic design
*R. Mills, MFA—glass, sculpture
*F. Roster, MFA—sculpture
*S. Spangler, MFA—ceramics
*J. Szostak, PhD—Japanese art history
*B. Taylor, MFA—ceramics
*D. Waite, PhD—Pacific art history

Cooperating Graduate Faculty
J. Stanton, PhD—Western art history

* Graduate Faculty
Affiliate Graduate Faculty
J. Feldman, PhD—Pacific art history

Degrees Offered: Undergraduate Certificate in Islamic Studies, BA in art with either a studio or Art History focus (including minor), BFA in art, MA in art history, MFA in art

The Academic Program
The Department of Art and Art History (ART) offers two separate but interrelated programs. Art history, leading to the BA, affords the opportunity to study the arts of Asia, the Pacific, and the West in a historical and cultural context. The art studio programs provide students either with a broad-based, liberal arts approach via the BA or with a more focused studio specialization leading to the BFA. The latter is considered more appropriate for students intending to pursue the MFA at the graduate level.

The department is housed in an excellent three-story facility with painting studios, photography and computer labs (Macintosh equipped for graphic design, PCs for electronic arts), and fully equipped printmaking, sculpture, ceramics, fiber, and glass facilities. The UH Art Gallery is a prominent feature of the department’s programs. Six or seven major exhibitions are presented each year, many of which have received national recognition. Visiting artist programs supplement the regular course offerings.

Advising
Advising is mandatory for all art and art history majors. For advising, see the associate chair, Kate Lingley, in Art 142A, email: lingley@hawaii.edu.

Undergraduate Study
BA Degree
This broad-based art degree provides students with a choice of a studio focus, where a wide range of visual arts media can be explored, or an art history focus, where the visual arts are studied in a historical context.

Requirements

Studio Focus
Students must complete 42 credit hours, including:
- 6 credits of art studio core: ART 113 and 116
- 12 credits of art history: ART 175, 176, and 6 credits at the upper division level
- 24 credits of art studio: 12 credits must be upper division

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Art History Focus
Students must complete 42 credit hours, including:
- 11 art history courses (33 credit hours), including ART 175, 176, and 395
- Three studio classes (9 credit hours), selected in consultation with advisor

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

BFA Degree
The BFA degree in art is designed for those students who desire a focused preparation in the visual arts or who intend to pursue an advanced degree or career in art. Areas of specialization include: ceramics, digital imaging, drawing, electronic arts, fiber, glass, graphic design, painting, photography, printmaking, and sculpture. Students are encouraged to cross media boundaries, and qualified students may opt to construct an individualized inter-media plan of study with faculty guidance and approval.

Students seeking admission to candidacy for the BFA must be a BA Art major and pass a portfolio review, which can take place only after the following requirements have been met.
1. Completion of art studio core requirements: 113 and 116.
2. Completion of art history core requirements: ART 175 and 176.
3. Completion of one 200-level studio elective not in student’s chosen area.
4. Completion of a minimum of 9 credit hours in chosen area with an average of B (not B-) or better.
5. Completion of 18 credits in UH Mānoa core requirements exclusive of art department courses.

All studio areas will hold an annual BFA Portfolio Review in late spring, at least one week prior to registration.

Requirements
Students must complete 63 credit hours, including:
- Seven courses in one of the 11 program areas as indicated at the time of declaration (last 9 credit hours must be completed at UH Mānoa)
- Two art studio core courses (6 credit hours): ART 113, 116
- Three art history core courses (9 credit hours): ART 175, 176, 302
- Four art history elective courses (12 credit hours)
- Five art elective courses (15 credit hours)

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Minor
Requirements
- 21 credits in art, 15 of which must be from non-introductory courses

Courses used to meet General Education Core requirements cannot be credited toward the minor.

Students interested in pursuing a teaching career in elementary and secondary art education should seek advisement from the College of Education.

Undergraduate Certificate in Islamic Studies
The purpose of this certificate is to increase understanding of Islam as a world religion through critical analysis of primary and secondary materials, to foster knowledge about the complexity among Islamic societies and their diverse cultural expressions, and to explore the role of Islam and Muslims in present and past world affairs.

This certificate is housed within the College of Arts and Humanities. The participating departments are Art and Art History, History, Philosophy, and Religion. Minimum prerequisites for acceptance into the program for undergraduates are sophomore or higher standing with a minimum GPA of 2.5 and the completion of at least one introductory course within one of the four participating departments with a grade of B or better.
A more complete description and the requirements are described under the Department of Philosophy.

**Graduate Study**

The Department of Art and Art History offers two master’s degrees, the MA in art history—Plan A (thesis) or Plan B (non-thesis), and the MFA in studio—Plan A only.

**MA in Art History**

The MA in art history emphasizes the arts of Asia and the Pacific. Applicants for the degree must hold a bachelor’s degree from an accredited U.S. college or university or its equivalent from a recognized foreign institution. An undergraduate major in art history is desirable, but not necessary. In support of the application for admission, all applicants are required to send three original letters of recommendation, a sample of written work (preferably an art history seminar or term paper), and General Test scores from the GRE directly to the art department prior to the application deadline. The application form for graduate admission should be sent under separate cover to Graduate Education. For more information on the MA in art history, contact Paul Lavy, PhD, email: paullavy@hawaii.edu.

**Plan A Requirements:**

Students must complete 36 credit hours, including:

- ART 670 Art Historical Methodology
- 9 credit hours of seminars in Asian and Pacific art history
- 6 credit hours of ART 700 or thesis

Students intending to engage in course work leading to the PhD are strongly encouraged to complete course work beyond the minimum MA Plan A requirements.

**Plan B Requirements:**

The non-thesis program is for students wishing to teach in community colleges or at the high school level. Required are 36 credit hours of which 18 must be taken in courses numbered above 600 including:

- ART 670 Art Historical Methodology
- 9 credit hours of seminars in Asian and Pacific art history

In either plan, up to 9 credits, with advisor’s approval, may be earned in appropriate advanced courses in other UH Mānoa departments.

The more suitable plan will be mutually determined by the faculty and the student.

Students must also demonstrate a reading knowledge in a foreign language appropriate to their field of specialization, chosen in consultation with the area advisor. For more information on the MA in art history, contact Paul Lavy, PhD, email: paullavy@hawaii.edu.

**MFA Degree**

The MFA is the terminal degree in studio art. The normal period of study is three years in residence. Areas of specialization include ceramics, electronic arts, fiber, glass, painting, photography, printmaking, and sculpture. Although most MFA applicants apply to one of the above media specializations for admission, students may take electives in more than one medium and are encouraged to investigate new genres.

Applications for the MFA must present evidence of a BFA or a BA with a strong studio art and art history background. The Department of Art and Art History acknowledges that some MFA applicants may not fit traditional criteria and will thus consider exceptional bachelor’s degree recipients that exhibit relevant backgrounds, strong commitment, and distinct potential in the visual arts. An applicant with a transcript of 25% or more nontraditionally graded undergraduate or graduate credit hours must submit GRE scores and course performance report forms.

Supporting material of 20 samples of original work should be submitted on a cd (still images in jpeg format, no more than 1.5 mb each and video samples in .mov format) that illustrates abilities in an area of specialization, as well as potential for development within the scope of the department’s facilities and personnel. This visual material and three letters of recommendation should be sent to the Department of Art and Art History. The application form for graduate admission should be sent under separate cover to Graduate Education.

Deficient or incompatible undergraduate preparation may result in admission on a conditional basis and will require, at the discretion of the graduate faculty, additional course work.

After acceptance into the graduate program, admission to candidacy for the MFA degree will be based upon results of the graduate evaluation and a positive review of course work. Those failing must successfully pass on their second attempt or they will be dismissed from the program.

Failure to meet the requirements for continued registration or to show progress in course work will lead to probation and/or dismissal from the graduate program.

**Requirements**

Students must complete 60 credit hours, including:

- 24 credit hours with 6 credits each in ART 611, 612, 613, 614. Conditional or unclassified graduate students may enroll only in ART 611 for a maximum of 6 credits. Consent of instructor is required.
- 15 credits of electives
- 6 credits of two art history courses (numbered 300 or above)
- 3 credits of ART 690
- 12 credits of ART 700 thesis, including an exhibition and written documentation

Art courses numbered 300 and above and not required at the undergraduate level in the area of specialization are acceptable for graduate credit. Elective courses also may be selected from any other UH Mānoa department, provided such study is deemed useful and pertinent to the student’s degree plan. MFA students wishing to take ART 699 must petition through the Office of Graduate Education to apply it toward the degree. All elective courses require appropriate preparation and the consent of the instructor and graduate student’s advisor. For more information on the MFA program, contact gradart@hawaii.edu.
Astronomy
College of Natural Sciences
Watanabe 416
2505 Correa Road
Honolulu, HI 96822
Tel: (808) 956-7091
Fax: (808) 956-7107
Undergraduate Program:
Email: undergrad@ifa.hawaii.edu
Web: manoa.hawaii.edu/astronomy
Graduate Program:
Email: grad-chair@ifa.hawaii.edu
Web: www.ifa.hawaii.edu/gradprog

Faculty
*D. B. Sanders, PhD (Graduate Chair)—infrared and millimeter astronomy
*C. Aspin, PhD—star formation
*C. Baranec, PhD—exoplanets, adaptive optics
*J. Barnes, PhD—astrophysical astronomy
*F. Bresolin, PhD—stellar astronomy
*S. J. Bus, PhD—asteroids
*K. Chambers, PhD—extragalactic astronomy
*M. R. Chun, PhD—adaptive optics
*P. Coleman, PhD—cosmology
*M. S. Connelley, PhD—instrumentation, star formation
*A. S. Cowie, PhD—interstellar matter
*L. L. Cowie, PhD—extragalactic astronomy
*H. Ebeling, PhD—galaxy clusters
*R. R. Gal, PhD—extragalactic astronomy, outreach coordinator
*S. R. Habbal, PhD—solar and heliospheric physics
*N. Haghighipour, PhD—extrasolar planets
*D. N. B. Hall, PhD—infrared astronomy
*G. Hasinger, PhD (IFA Director)—X-ray astronomy
*K. Hodapp, PhD—infrared astronomy
*A. W. Howard, PhD—exoplanets
*E. M. Hu, PhD—extragalactic astronomy
*R. Jedicke, PhD—asteroids
*S. Jefferies, PhD—solar physics, advanced imaging
*R. Joseph, PhD—infrared astronomy
*J. Kaiser, PhD—astrophysical astronomy
*J. Keane, PhD—protoplanetary disks
*R-P. Kudritzki, PhD—stellar astronomy
*J. R. Kuhn, PhD—solar astrophysics
*H. Lin, PhD—solar physics
*M. Liu, PhD—stellar astronomy
*J. Lu, PhD—star formation
*E. Magnier, PhD—star formation, large-scale surveys
*G. S. Mathews, PhD—astronomer
*R. A. McLaren, PhD (IFA Associate Director)—infrared astronomy
*K. Meech, PhD—planetary astronomy
*R. H. Mendez, PhD—stellar astronomy
*G. Morrison, PhD—galaxy clusters
*N. Raja, PhD—computer support
*[J. Rayner, PhD—star formation, instrumentation
*B. Reipurth, PhD—star formation
*K. Robertson, PhD—librarian
*N. Schorghofer, PhD—planetary science
*I. Szapudi, PhD—cosmology
*D. Tholen, PhD—planetary science
*A. T. Tokunaga, PhD—infrared astronomy
*J. Toney, PhD—extragalactic astronomy
*R. B. Tully, PhD—galaxies and cosmology
*R. Wainscoat, PhD—asteroids
*[J. P. Williams, PhD—submillimeter astronomy

Degrees Offered:
BA (including minor) in astronomy, BS (including minor) in astrophysics, MS in astronomy, PhD in astronomy

The Academic Program
Astronomy (ASTR) is the branch of science that studies the structure and development of the physical universe beyond Earth. It includes the study of planets and other objects of the solar system; the sun and stars and their evolution; the interstellar medium; the nature and dynamics of star clusters, galaxies, and clusters of galaxies; and the study of the nature and history of the universe itself—of the physical cosmos taken in its largest extent in space and time. Astronomy is the field of study which provides us with a fundamental understanding of both the universe and our place in it.

Incomparable facilities for ground-based observational astronomy in the optical, infrared, and submillimeter regions of the spectrum reside in Hawai‘i. UH Mānoa’s facilities are located on Haleakalā on the island of Maui at an elevation of 3,000 meters and on Mauna Kea on the Big Island of Hawai‘i at an elevation of 4,200 meters. The summit of Mauna Kea is internationally recognized as the best observing site in the world. As a consequence, the major telescopes of 11 nations are located there, and UH Mānoa is guaranteed access to them. The Institute for Astronomy at UH Mānoa has significant programs in the study of galaxies and cosmology, stellar and interstellar astronomy, solar astronomy, infrared and submillimeter astronomy, and planetary astronomy.

The astronomy and astrophysics curricula are designed to provide students with a strong background in the application of fundamental physics to astronomical phenomena, as well as practice designing and carrying out projects in observational astronomy. This serves to train students in the core practices of science, applicable to careers in research and in astronomy-related fields. The BA in Astronomy provides a flexible program for students interested in astronomy who also have a wider range of career goals. The BS in Astrophysics is a rigorous program for students who plan to pursue graduate studies in astronomy, astrophysics, or physics and are aiming at a long-term research career.

Advising
Academic advising is mandatory for all undergraduate astronomy and astrophysics majors. Contact the department office for assignment to an advisor. Note that in order to complete the program in 4 years, astronomy and astrophysics students must begin the study of calculus in either the first or the second semester of the freshman year.

Undergraduate Study
BA Degree in Astronomy
Requirements (C [not C-] grade minimum)
Students must complete 48 credit hours in ASTR, PHYS, and related courses, including:
- ASTR 210, 300/300L, 301, 320, 494 (3 credits)
- PHYS 151/151L, 152/152L, 485 (170/170L, 272/272L, 274/274L may be substituted for 151/151L, 152/152L; if so 274 also satisfies one of the non ASTR electives below.)

* Graduate Faculty
Three courses, including at least 6 upper-division credits, from ASTR 110, 120, 130, 140, 150, 280, 281, 380, 399, 430, 494 (110-150 only count if taken before 240; 399 may be taken for a maximum of 3 credits; if 494 counts as an elective as well as a core requirement, it must be taken both semesters for 6 credits total)

Four courses, including at least 3 upper-division credits, from CHEM 272, ECON 321, EE 160, GG 101 (or 170), any GG course at 200-level or higher worth at least 3 credits, ICS 111, ICS 211, MATH 243, 244, PHYS 274, any MATH or PHYS course at 300-level or higher worth at least 3 credits

CHEM 161/161L and 162/162L or 171/171L or 181A/181L

MATH 241, 242 (251A, 252A may be substituted for 241, 242. 215, 216 may be substituted for 241, 242 with consent from advisor.)

Recommended languages: German, French, or Japanese.

Upon approval of an astronomy program advisor and chair, the elective requirements may be modified to accommodate a special emphasis or interdisciplinary program that is appropriate for a major in astronomy.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

BS Degree in Astrophysics
Requirements (C [not C-] grade minimum)

Students must complete 62 credit hours in ASTR and PHYS courses, including:

- ASTR 241, 242, 300/300L, 301, 423, 494 (6 credits)
- PHYS 170/170L, 272/272L, 274/274L, 310, 311, 350, 450, 480, 485
- One course from ASTR 320, 430
- Two courses from PHYS 400, 460, 481, 490
- CHEM 161/161L and 162/162L or 171/171L or 181/181L
- MATH 241, 242, 243, 244, 311 or 307 (251A, 252A, 253A may be substituted for 241, 242, 243, 244. 215, 216 may be substituted for 241, 242 with consent from advisor.)

Recommended languages: German, French, or Japanese.

Upon approval of an astrophysics program advisor, the elective requirements may be modified to accommodate a special emphasis or interdisciplinary program that is appropriate for a major in astrophysics.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Minor in Astrophysics

The minor in astrophysics prepares students with the essential core of theoretical and observational courses of the BS Astrophysics degree. This minor can provide a fulfilling and career-broadening complement to most bachelor’s degree programs in the physical sciences, earth sciences, and engineering that already require calculus-based physics.

Students must complete the following courses with grades of C (not C-) or better:

- ASTR 241 and 242
- ASTR 300, 300L, and 301
- At least 3 credit hours of additional ASTR course(s) at the 300-level or above

Graduate Study

Most students entering the astronomy graduate program do so with the goal of achieving the PhD degree, but they must first obtain an MS degree unless they already have a closely related master’s degree from another university.

Applicants to the Astronomy Graduate Program should normally have a bachelor’s degree in physics, astronomy, or a related field. Requirements for admission include a minimum of 35 undergraduate credit hours in physics or astronomy, some of which must be in atomic and nuclear physics, electromagnetism, mechanics, optics, and thermodynamics. We require the GRE General Test, and the subject test in physics.

Applicants who already hold a masters degree from another institution are also eligible for admission and may move in our program to PhD candidacy on an accelerated track. In addition, these students have the option to be based at any of the Institute for Astronomy branches (Mānoa, Maui, or Hilo) immediately upon entering the program. Placement at the IfA-Maui or IfA-Hilo facilities is contingent upon funding for an assistantship and applicants are encouraged to contact potential research advisors during the admissions process.

In selecting applications for entry to the astronomy program, we pay attention to high academic achievement, especially in physics, and to the letters of recommendation. Research experience at the undergraduate level is extremely valuable.

Master’s Degree

The program offers both the Plan A (thesis) and Plan B (non-thesis) MS degrees, but almost all students opt for the Plan B program as it dovetails better with the requirements of qualification for PhD candidacy. The only real advantage of the Plan A master’s is that it can be completed within four...
semesters; it is therefore of interest only to those students who want to get a terminal master’s degree in the minimum time.

Requirements

All MS students must take 30 credits of graduate level astronomy courses unless substitution is approved by the graduate chair. They must include ASTR 633 (Astrophysical Techniques) and at least three credits of ASTR 700-level seminars. Plan A students must complete a thesis in accordance with UH Mānoa regulations, while Plan B students must pass the final examination (which is also the PhD qualifying examination) and satisfactorily complete at least one directed research project as judged by the qualifying exam committee.

Doctoral Degree

Besides the course work required for the MS degree, PhD students are expected to undertake two directed research projects during their first two years, and present the results to the faculty both as a written report and an oral presentation. Students must pass the Qualifying Exam Assessment (which also serves as the Plan B MS degree final exam) by the end of their 5th semester in the astronomy graduate program.

Requirements

Students entering the program with a masters degree in a related field may advance to PhD candidacy after completing one year of course work with a minimum of 6 credits per semester (3 credits of astronomy graduate-level course work and at least three credits of ASTR 700-level seminars), successful completion of one ASTR 699 research project, and passing the Qualifying Exam Assessment.

All students must pass the comprehensive exam, which takes the form of an in-depth review of the dissertation proposal, and achieve PhD candidacy by the end of their 6th semester in the astronomy graduate program. Finally, students must research, write, and defend a dissertation on a subject approved by their committee.

Biology

College of Natural Sciences
Edmondson 216
2538 McCarthy Mall
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Tel: (808) 956-8303
Fax: (808) 956-4745
Email: biology@hawaii.edu; mbiology@hawaii.edu
Undergraduate Advising Email: bioadvis@hawaii.edu
Web: manoa.hawaii.edu/biology/

Faculty

*K. Cole, PhD (Chair)—ichthyology, behavioral ecology, reproductive biology, morphology and morphogenesis, microgravity biology
*J. H. Bailey-Brock, PhD—invertebrate zoology, reef ecology, Polychaetes
*K. M. Bennett, PhD—neuroscience and nphrology utilizing magnetic resonance imaging
M. Butler, PhD—evolution ecology, adaptive radiation, functional morphology, biomechanics
*H. G. de Couet, PhD—molecular cell biology, development biology, evolution
*L. A. Freed, PhD—evolutionary and behavioral ecology, ornithology, conservation biology
M. A. Hixon, PhD—marine ecology and conservation biology
*C. L. Hunter, PhD—conservation biology, coral reef ecology, biology and ecology of marine invertebrates
S. D. Kraft-Terry, PhD—academic advising and assessment
*P. B. J. Marko, PhD—biogeography, evolution and conservation
*A. L. Moran, PhD—marine ecology and evolution
M. Porter, PhD—evolution and ecology of vision, crustacean phylogenetic
*F. A. Reed, PhD—population genetics
*S. Robinow, PhD—neurogenetics
*A. D. Taylor, PhD—population, theoretical, and insect ecology
*R. Thomson, PhD—evolutionary biology and phylogenetics
*T. Tricas, PhD—marine animal behavior
*L. Watling, PhD—impacts of humans on benthic environments; crustacean biology
*C. Z. Womersley, PhD—environmental physiology, biochemical adaptation, parasitology
*A. N. Wright, PhD—population ecology, community ecology, conservation biology
*M. Yoshizawa, PhD—evolutionary developmental biology, neuroscience, quantitative genomics

Cooperating Graduate Faculty

R. Alegado, PhD—bacterial pathogenesis, microbial evolution and ecology
D. Duffy, PhD—conservation biology, sea birds
R. Gates, PhD—molecular biology, developmental genetics, cell biology, physiology and ecology of corals
E. G. Grau, PhD—comparative endocrinology, environmental physiology
D. K. Hartline, PhD—quantitative neurophysiology and simulation of simple networks
B. S. Holland, PhD—conservation biology of Native Hawaiian tree snails
K. N. Holland, PhD—physiology, behavior, ecology of aquatic organisms
P. J. Jokiel, PhD—coral reef biology, biogeography and ecology
K. Y. Kaneshiro, PhD—systematics, evolution, insect behavior
S. A. Karl, PhD—molecular ecology, systematics, and phylogeography of marine animals
P. Lenz, PhD—neuroecology of zooplankton sensory systems
P. E. Nachtigall, PhD—behavior and sensory processes of marine mammals
R. Richmond, PhD—invertebrate zoology, conservation biology
F. I. Thomas, PhD—marine ecology, biology of larvae
R. Toonen, PhD—molecular genetics of marine organisms

Affiliate Graduate Faculty

G. Aebly, PhD—coral reef ecology
R. Allison, PhD—systematics, biogeography and ecology
C. Birkeland, PhD—conservation biology regarding coral
A. Friedlander, PhD—marine ecology, marine conservation biology
S. Miller, PhD—ecosystem and population conservation biology
K. Rodgers, PhD—coral reef ecology

Degrees Offered: Undergraduate Certificate in Mathematical Biology and Marine Option Program, BA (including minor) in biology, BS in biology, BS in marine biology, minor in zoology, MS in zoology, PhD in zoology

The Academic Program

The Department of Biology (BIOL) provides an academic home to students who wish to pursue a broad training in the biological sciences. It offers a BA degree and a BS degree in
biology, a BS degree in marine biology, a minor in biology, an MS in zoology, and a PhD in zoology.

Biology is of fundamental importance in a science or liberal arts education, as it provides students with a keener insight into and a deeper appreciation of the many facets of living systems. Most students plan to use their training as preparation for professional work, such as aquaculture, biotechnology, biological research, dentistry, marine biology, medicine, optometry, park services, pharmacy, and teaching. Our graduates have an outstanding record of acceptance in advanced degree programs at dental, medical, pharmacy, and graduate schools. Many of our graduates also become teachers after obtaining a post-baccalaureate teaching certificate at the College of Education.

The biology curricula are designed to provide students with a strong background in the principles of biology and with rigorous upper division instruction in a number of basic areas. This combination of breadth and in-depth instruction allows students to develop the intellectual foundations and the skills necessary to deal with the specific biological concerns of today and the flexibility to meet the needs of the various professions. From this base, our graduates can pursue future specialization with confidence.

Advising
Undergraduate student advising is mandatory. Prospective majors should visit manoa.hawaii.edu/biology/advising or contact bioadvis@hawaii.edu to meet with an advisor to design a curriculum that satisfies program requirements.

Undergraduate Study

BA Degree in Biology

Requirements (C [not C-] grade minimum)
- BIOL 171, 172, 265, 275, and 375 plus laboratories
- 20 credit hours in approved courses, including at least 1 credit of laboratory, 3 credits in microbiology, and 3 credits from the approved list of physiology courses

Related Requirements (C [not C-] grade minimum)
- CHEM 161, 162, 272 plus laboratories and 273
- PHYS 151 and 152 or 170 and 272 plus laboratories
- MATH 215 or 216 or 241 or 242 or 251A and 251A

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

BS Degree in Biology

Requirements (C [not C-] grade minimum)
- BIOL 171, 172, 265, 275, and 375 plus laboratories
- One course and laboratory from morphology/systematics
- One course from the approved list of physiology courses
- BIOL 441 or BIOL 402
- 16 credit hours in approved courses, including one or more laboratory courses at the 300 level or above; no more than 6 credits of BIOL/ZOOL 499 can apply to this requirement
  - The above courses to include one or more courses at the 300 level or above from microbiology

Related Requirements (C [not C-] grade minimum)
- CHEM 161, 162, 272 plus laboratories and 273
- PHYS 151 and 152 or 170 and 272 plus laboratories
- MATH 215 and 216 or 241 and 242 or 251A and 252A
- ECON 321 or NREM 310 or SOCS 225 or MATH 243 or 304 or 373 or 472

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

BS Degree in Marine Biology

Requirements (major of 2.5 GPA or higher)
- BIOL 171, 172, 265, 275, and 375 plus laboratories
- OCN 201
- BIOL 301 plus laboratory
- BOT 480
- ZOOL 475 plus laboratory
- MICR 401 plus laboratory
- 4 credits of directed research in approved disciplines or BIOL 403
- BIOL 404
- 9 credit hours in approved courses

Related Requirements (major of 2.5 GPA or higher)
- MATH 215 and 216, or 241 and 242, or 251A and 252A
- ECON 321 or NREM 310 or SOCS 225 or MATH 373 or MATH 472

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Minor in Biology

Requirements (C [not C-] grade minimum)
- CHEM 161, 162, and 272 plus laboratories
- PHYS 151 and 152 or 170 and 272 plus laboratories
- MATH 215 and 216 or 241 and 242 or 251A and 252A
- ECON 321 or NREM 310 or SOCS 225 or MATH 373 or MATH 472

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Minor in Zoology

Please go to page 179 for more information on this degree.

Undergraduate Certificate in Mathematical Biology

The purpose of the certificate is to induce students to pursue the interdisciplinary study of biology and mathematics together with research. The course work will be similar to, but less than, that required to receive a minor in mathematics or biology. However, the students will also have to do a substantial amount of research in addition to the course work. The emphasis in the certificate is different, however, in that the majority of the work is interdisciplinary.

Students will be considered accepted into the Mathematical Biology Certificate Program upon formal request for acceptance and completion of either MATH 304 or 305 with a grade of C or better. To receive the certificate, students must complete 15 credits of approved course work with no grade below a C and attain a GPA of 2.5 in the collection of courses used to satisfy the certificate requirements. Due to the interdisciplinary nature of the certificate, 6 credits of required electives will differ depending on a student’s major. Courses used towards the certificate can only be double-dipped with focus requirements.
Prerequisites to the Certificate
- BIOL 171 (lab not required)
- CHEM 161 or 171 (lab not required)
- year of calculus (MATH 215/216, MATH 241/242, MATH 251A/252A)
- electives may have additional prerequisites

Requirements for the Certificate (15 credits)
- required courses (9 credits): MATH 304, 305, MATH/BIOL 490 (capstone)
- math majors (6 credits): BIOL 172, and 265 or 275 (lab not required)
- life science majors (6 credits): two courses selected from MATH 243/253A, 301, 302, 303, 307, 311, 371, 373, 402, 403, 407, 414, 416, 471, 472
- other majors: completion of above required courses, and at least 6 credits of electives approved by the Committee

Participation in an interdisciplinary Mathematical Biology research project is required. These projects must be substantial, requiring at least the effort of a 5 credit 400-level course; examples include a senior honors research project, summer Research Experiences for Undergraduate programs, and the Undergraduate Biology and Mathematics Research Program; students are advised to discuss their projects with an advisor from the Mathematical Biology Certificate Coordinating Committee before commencing. A research paper based on this research project must be submitted to and approved by the Committee. Students are expected to present their research to an approved symposium or conference.

Undergraduate Certificate in Marine Option Program
The Marine Option Program (MOP) is a unique opportunity for undergraduates with an interest in the ocean. It is open to students in all fields and provides a clearinghouse for marine-oriented experiential education as well as a chance for students with common interests to meet. MOP sponsors a wide variety of marine activities, including field trips, workshops, seminars, symposia, and noncredit courses.

A certificate is awarded to undergraduates who successfully complete at least 12 credit hours of marine-related courses (including OCN 201, ORE 202, ZOOL 200, or an equivalent survey course; one 3-credit interdisciplinary ocean course; 6 credit hours of marine electives). In addition, students must complete the MOP Seminar (IS 100/BIOL 104) followed by the MOP skill project. The unique MOP skill project (worth 3 or more credits, e.g. IS 400/BIOL 400) allows students to design and conduct a personal marine or aquatic project related to their educational goals. Past projects have run from scientific research to endeavors in the arts.

Students interested in MOP or in marine careers and curricula should visit the Marine Option Program offices in Dean Hall, room 105A; tel. (808) 956-8433; email manoa mop@hawaii.edu; www.hawaii.edu/mop/; Facebook ID: uhm mop.

Graduate Study in Zoology
Please see page 178 for more information.
systems. The curriculum provides broad-based training, from traditional field methods to the latest molecular techniques, and the program offers excellent opportunities for research experience for undergraduates and graduate students.

The department’s programs take advantage of Hawai‘i’s unique location by offering students unparalleled opportunities to explore the botanical diversity of tropical freshwater, marine, and terrestrial ecosystems through a wide range of field and laboratory experiences. Students may focus on topics ranging from the ecology, evolution, and conservation of Hawai‘i’s unique ecosystems and flora, to the threats posed by invasive species, to the uses of plants by humans.

At the undergraduate level, the department offers a BA, BS, and minor degree in botany and a BS in ethnobotany. The MS and PhD in botany are offered at the graduate level. All botany faculty members, regardless of rank, teach courses at both the undergraduate and graduate levels. Financial support for undergraduates is available via competitive tuition waivers and scholarships. Tuition waivers and teaching and research assistantships are available to graduate students. Graduate majors will be prepared for careers as naturalists, environmental planners, policy makers, conservation biologists, teachers, researchers, and museum or organizational directors. Recipients of advanced degrees commonly follow careers with government agencies, conservation organizations, and colleges and universities in the U.S. and abroad.

The department’s website at www.botany.hawaii.edu provides glimpses into the many environments and special plants in Hawai‘i, and provides further information about faculty interests and research.

Affiliations

Botanical studies are enhanced by cooperative working relationships between the department and Hawai‘i Institute of Marine Biology, Harold L. Lyon Arboretum, Kewalo Marine Laboratory of the Pacific Biomedical Research Center, Pacific Cooperative Studies Unit of the National Park Service, The Nature Conservancy, State of Hawai‘i Department of Land and Natural Resources, U.S. Fish and Wildlife Service, National Tropical Botanical Garden, Honolulu Botanical Garden, Herbarium Pacificum and the Department of Botany of the B.P. Bishop Museum, Hawai‘i Agriculture Research Center (formerly Hawaiian Sugar Planters’ Association), and Waikiki Aquarium.

Advising

An undergraduate advisor guides undergraduates through the academic program and is available to talk with prospective majors about their interests. Graduate students entering the department are assigned an interim committee of three faculty members who provide general advice. The student’s committee and the graduate program chair oversee requirements and provide a link between Graduate Education and the student. Graduate students are encouraged to interact with each faculty to become acquainted with various research approaches and areas of expertise. Once a research topic has been identified, a permanent committee will be established to provide specific assistance.

Undergraduate Study

BA Degree in Botany

The BA degree provides students flexibility to pursue a broad liberal arts education and still gain a sound foundation in botany with an area of particular interest. Courses are available in conservation, ecology, ethnobotany, evolution, physiology, structural botany, systematics, and selected faculty research specialties. The courses applied toward the botany major may be selected with the student’s interest area in mind.

Requirements

- Students must earn a grade of C (not C-) or higher in each course applied to the major, including required courses in Chemistry, Physics, and Math
- 4 credits required of seminars: BOT 100, 200, 300, 400
- 43 credits of the following:
  - BOT 101/101L
  - BOT 201/201L
  - BOT 202/202L
  - BOT 301/301L
  - BOT 302
  - BOT 303
  - BOT 420
  - BOT 462
  - BIOL 171/171L
  - BIOL 275/275L
  - BIOL 375/375L
- Minimum 9 credits of electives
  - Two of either BOT 401, 450, or 499
  - One of BOT 430/430L, 461, or 480
  - Any of the following: BOT 350, 430/430L, 444, 453, 454, 456, 461, or 480
- 19 credits other required courses: CHEM 161/161L, 162/162L, 272/272L, PHYS 100/100L or higher, and MATH 100

Prospective majors should consult the department promptly to design a curriculum that satisfies these requirements.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

BS Degree in Botany

The BS degree is designed for those students who plan a career in science with an emphasis on plants, especially those intending to do graduate studies. A full complement of basic courses in biology, chemistry, math, and physics is required in addition to botany courses. As with the BA degree, students may choose among a variety of courses to fulfill requirements for the major.

Requirements

- Students must earn a grade of C (not C-) or higher in each course applied to the major, including required courses in Chemistry, Physics, and Math
- 4 credits of required seminars: BOT 100, 200, 300, 400
- 43 credits of the following:
  - BOT 101/101L
  - BOT 201/201L
  - BOT 202/202L
  - BOT 301/301L
  - BOT 302
Prospective majors should consult the department promptly to design a curriculum that satisfies these requirements. BOT 135 and 160 do not fulfill major requirements.

**Minor**

**Requirements**

Students must complete 15 credit hours in non-introductory courses with a grade of C (not C-) or higher.

**For Ethnobotany:**

- BOT 440 and 461
- Two of: BOT 442, 444, or 446
- One 400 level Social Science course that forms part of an ethnobotany theme with the other courses

**For Evolutionary Botany:**

- BOT 201/201L and 462
- Electives: BOT 420, 430, 450, 461, or 480

**For Tropical Field Botany:**

- BOT 453
- Electives: BOT 201/201L, 450, 454, and 461

Individual programs may be designed by the student and advisor for approval by the faculty.

**Graduate Study**

The department offers programs leading to MS and PhD degrees. Hawaii’s location offers unique opportunities to study the patterns and processes of evolution, ecology, and morphological and physiological variations within a geographically variable yet isolated setting. Abundant opportunities are available for research in marine, aquatic, and terrestrial environments, and faculty expertise spans a phylogenetically diverse set of organisms including land plants, algae, and fungi. The faculty is composed of a number of nationally and internationally recognized scientists in conservation, ecology, ethnobotany, and systematics.

Recipients of the MS degree often teach at the high school level, pursue careers with state or federal government agencies, or work with environmental organizations and consultancies. Those with a PhD may teach and/or conduct research in colleges and universities, work as environmental consultants, and pursue careers with environmental organizations or the government.

A listing of faculty members and their research areas and publications is available on the department website: www.botany.hawaii.edu. Applications for admission and opportunities for financial aid and support are available upon request.

At the time of application, three letters of recommendation from persons who can appraise the student’s aptitude for advanced work are required. In their statement of objectives, applicants should identify a specific area of study within botany: conservation, ecology, ethnobotany, general botany, marine botany, systematics/evolution, or whole plant biology. Minimum curriculum requirements for each track are available at the department website. Applicants will be evaluated for their level of preparation and potential to successfully complete their proposed plan of study. Application deadlines are **January 15** for fall semester. Normally, teaching assistantships are available for the beginning of fall semester, but openings may occur mid-year.
MS and PhD students are admitted to candidacy when they have successfully completed any requirements and pre-program deficiencies identified by their committee and after they have demonstrated the ability to collect, analyze, integrate, and communicate scientific information effectively in the English language.

Because scientific findings are typically presented orally as well as in writing, all students must gain and demonstrate proficiency in the presentation of seminars. Students must complete BOT 610 to satisfy this requirement. In addition, MS Plan A and PhD students must present two public seminars: first, outlining the background of a research problem and the student’s proposed research program; and second, at the conclusion of their program, describing the research results and conclusions. The latter seminar also includes a final examination by the thesis or dissertation committee. The final examination for the MS Plan B students includes the presentation of a public seminar summarizing the results of one of their directed research studies.

**Master’s Degree**

Plan A (thesis) and Plan B (non-thesis) are separate MS programs with distinct purposes. Before admission to candidacy, the plan that a candidate intends to follow must be declared and approved. Plan A is the usual program to be taken by candidates intending a research-related career. Plan B is for students who do not intend to make research in botanical sciences their profession.

**Plan A (Thesis) Requirements**

For Plan A, a minimum of 30 credit hours is required. Of that, a total of 12 credit hours shall be for thesis and a minimum of 18 additional credit hours for courses approved by the candidate’s committee.

**Plan B (Non-thesis) Requirements**

For Plan B, a minimum of 30 credit hours is required. Of that, a total of 18 credit hours shall be earned in the major field or an approved related field in courses numbered 600 and above (excluding BOT 699 and BOT 700). Of these credits, at least 6 (but not more than 9) must be directed research in aspects of botanical sciences chosen by the candidate in consultation with his or her committee.

**Doctoral Degree**

The PhD program includes gaining a working knowledge in an approved foreign language or other research-tool subject, as well as passing a comprehensive examination and writing a dissertation. Suitability of the language or tool subject is determined by the graduate faculty according to the student’s area of specialization, and proficiency is ordinarily determined by examination or satisfactory completion of a specific course of study.

**Requirements**

The comprehensive examination is a combination of oral and written parts. The exam is conducted by the candidate’s committee, plus any members of the graduate faculty who wish to attend. In addition to general botany, the candidate is examined in-depth in areas of related disciplines that have been previously agreed upon by the student and the committee. The dissertation is expected to be an original contribution based on independent research. It is initiated by the preparation of a critical review of the literature that becomes the basis for a dissertation proposal. Dissertation research for the PhD degree is carried out in an aspect of botanical sciences for which a member of the graduate faculty of the field will accept responsibility as committee chair.

**Chemistry**

College of Natural Sciences
Bilger 239
2545 McCarthy Mall
Honolulu, HI 96822
Tel: (808) 956-7480
Fax: (808) 956-5908
Email: chemdept@hawaii.edu
Web: www.manoa.hawaii.edu/chem

**Faculty**

*K. K. Kumashiro, PhD (Chair)—physical chemistry, solid-state nuclear magnetic resonance of proteins and peptides
*T. Apple, PhD—physical chemistry, solid-state NMR
*M. F. Cain, PhD—organometallic chemistry, catalysis, alternative energy processes, synthesis and ligand design
*W. J. Chain, PhD—organic chemistry, synthesis of natural products
*J. D. Head, PhD—theoretical chemistry, electronic structure determination of large molecules and clusters
*T. K. Hemscheidt, PhD—organic and bioorganic chemistry, biosynthesis of natural products
*J. T. Jarrett, PhD—biochemistry, enzymology, structure and function of metalloenzymes
*C. M. Jensen, PhD—inorganic and organometallic chemistry, polyhydride and dihydrogen metal complexes, homogeneous catalysts, hydrogen storage materials
*R. I. Kaiser, PhD—physical chemistry, reaction dynamics, chemistry in extraterrestrial environments
*H. L. Ng, PhD—membrane protein crystallography
*M. A. Tius, PhD—organic chemistry, synthesis of natural products
*P. G. Williams, PhD—organic and natural products chemistry

**Cooperating Graduate Faculty**

D. M. Jameson, PhD—fluorescence spectroscopy, protein interactions
C. J. Simmons, PhD—inorganic chemistry, metal-dioxygen and Jahn-Teller copper complexes, structure determination by X-ray crystallography

**Degrees Offered:** BA (including minor) in chemistry, BA in biochemistry, BS in chemistry, BS in biochemistry, MS in chemistry, PhD in chemistry

**The Academic Program**

Chemistry (CHEM) stands at the crossroads between physics and biology. As biological processes are examined in ever finer detail, chemistry is increasingly called upon to provide the insights, techniques, and materials needed to understand the workings of living organisms, including ourselves. Chemistry is thus a popular major for those interested in biomedical careers. In another direction, chemistry is also essential to the search for solutions to the ecological problems created by the ever-expanding range of human activities. Chemists create new substances with new properties that find application throughout our civilization.

* Graduate Faculty
As a major, chemistry provides a solid foundation of scientific knowledge and experimental skills that enables one to specialize in many directions toward careers in research, teaching, business, or professional practice. Also, because virtually all constructed things we see and use in our daily lives involve chemistry, there is a huge pool of jobs for chemists in the manufacturing industries.

**Undergraduate Study**

**BA in Chemistry**

**Requirements**
- 27 credit hours in CHEM courses numbered 200 and above, including CHEM 272/272L, 273/273L, 274/274L, 351, 352/352L, and either 425/425L or 445/445L
- MATH 243 (Calculus III) or 253A
- PHYS 170/170L and 272/272L
- Recommended languages: German, French, Russian, or Japanese

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

**BS in Chemistry**

**Requirements**
- 41 credit hours in CHEM courses numbered 200 and above, including CHEM 272/272L, 273/273L, 274/274L, 351, 352/352L, 372 or BIOL/MBBE/PEPS 402 or BIOC 441, 425/425L, 427, and 445/445L
- A minimum of three credits from CHEM 399, 601, 602, 622, 641, 642, 643, 651, 653, or 657
- MATH 243 (Calculus III) or 253A
- PHYS 170/170L and 272/272L
- Recommended electives: MATH 244 and PHYS 274
- Recommended languages: German or French

To view a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets.

**BA in Biochemistry**

**Requirements**
- 24 credit hours or more in CHEM courses numbered 200 and above, including CHEM 272/272L, 273/273L, 274/274L, 361 or 351/352, and 372
- BIOL 171/171L, 172/172L, 275/275L, and 402
- MATH 215 or 241 or 251A and 242 or 252A
- PHYS 170/170L and 272/272L
- Three elective lecture courses and one accompanying laboratory course from select CHEM, BIOL, MBBE, or MICR courses numbered 300 or higher*.

*Upon approval of a Department of Chemistry advisor and the chair, the elective requirements may be modified to accommodate a special emphasis or interdisciplinary program that is appropriate for a major in Biochemistry.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

**BS in Biochemistry**

**Requirements**
- 30 credit hours or more in CHEM courses numbered 200 and above, including CHEM 272/272L, 273/273L, 274/274L, 361 or 351/352, 372, 462, 463L.
- MATH 215 or 241 or 251A and 242 or 252A
- PHYS 170/170L and 272/272L
- 14 credit hours or more, which must include two laboratory courses, from the following:
  - At least one course from CHEM 352L, 399, 425/425L, 427, 445/445L

*Upon approval of a Department of Chemistry advisor and the chair, the elective requirements may be modified to accommodate a special emphasis or interdisciplinary program that is appropriate for a major in Biochemistry.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

**Minor**

**Requirements**
- 17 credit hours in CHEM courses numbered 200 and above, including CHEM 272/272L, 273/273L, 274/274L, and 351

**Graduate Study**

The department offers MS and PhD research and study opportunities in inorganic, organic, and physical chemistry, with specialized research opportunities in geochemistry and marine-related chemistry.

Intended candidates for the MS or PhD must present the minimum undergraduate preparation in general, organic, analytical, and physical chemistry courses. Foreign applicants for the MS and the PhD must take the GRE General Test.

Graduate study in chemistry consists of course work, independent study, teaching, and research. A thesis or dissertation based on original research is the most important part of the master’s or doctoral degree respectively. Candidates for advanced degrees are required to serve as teaching assistants for a portion of their program.

Additional details concerning MS and PhD degree requirements, as well as assistantships available to prospective students, are outlined in brochures available upon request from the department.

**Master’s Degree**

**Requirements**

The candidate for the MS in chemistry (Plan A only) is granted 12 credit hours for an acceptable thesis. The remaining 18 credit hours must be selected from acceptable graduate courses in chemistry (listed in this Catalog) or from graduate offerings in mathematics and the natural sciences. Required courses are CHEM 691 or 692, and 700.

**Doctoral Degree**

**Requirements**

Doctoral candidates must complete a minimum of six semesters of graduate study of which at least three semesters must be in residence at UH Mānoa. Courses are selected from acceptable graduate courses in chemistry listed in this Catalog and
from graduate offerings in related disciplines as directed by the faculty. Candidates must demonstrate mastery of core material in graduate courses in their chosen areas. Each candidate must pass a comprehensive oral examination consisting of the defense of an original research proposal written by the candidate and a résumé of the candidate’s dissertation research and its current status.

The most important requirement for the PhD degree is the research project that culminates in the dissertation. Prior to beginning the second semester of study, each candidate selects one member of the chemistry graduate faculty to serve as his or her research director. The research director works with the candidate throughout his or her program and chairs the candidate’s dissertation committee.

More information about the chemistry department and its programs can be found on its website.

The Academic Program
Communication (COM) study provides undergraduate and graduate students an academic climate consistent with the mission of the College of Social Sciences. The program focuses on active learning and inquiry in fundamental communication processes with specific emphasis on media arts (digital cinema and multimedia), communication in communities (local, global, organizational, and intercultural), and information and communication technologies (ICTs) as preparation for fruitful careers, enlightened citizenship, and lifelong learning.

In addition to the faculty and staff, resources include both a state-of-the-art media laboratory and computer-communication laboratories. The internship program facilitates the merging of academic knowledge with applied experience in students’ fields of interest.

Affiliations
The East-West Center, Pacific Telecommunications Council, Telecommunications and Social Informatics Research Program (TASI), and the many international conferences dealing with Asian/Pacific affairs provide a stimulating environment for international and intercultural communication.

Advising
Each undergraduate major is assigned a faculty advisor. In addition, an undergraduate chair provides a general point of contact for aspiring and declared majors. The graduate program parallels the undergraduate advising structure. However, once a student is admitted to candidacy, the student chooses a permanent advisor for the remainder of his or her program.

Undergraduate Study
The undergraduate program offers courses that provide students with a sound understanding of fundamental communication processes in contexts ranging from small groups to formal organizations, the community, and society at large. The program also provides students the opportunity to select courses that allow them to specialize in one or more of three areas of concentration: media arts, communication and communities, and ICTs and policy.

Bachelor’s Degree

Requirements
Students must complete 33 credit hours of communication courses, including the following:

- Introduction to Communication (COM 201)
- three foundation courses (COM 310, 320, and 330)
- one capstone course (COM 476, 477, 478, or 479)

To declare a major in communication, students must be enrolled in, or have completed with a B (3.0) or better in COM 201, Introduction to Communication, and have completed at least 12 credit hours with a 2.5 GPA. Upon declaration of their major, students are assigned a personal faculty advisor to assist them in their progress through the program. Students select the remaining number of credit hours from courses that will support their personal and career interests. Students are also responsible for meeting the prerequisite requirements for at least one of the capstone courses in order to graduate in a timely manner. Students must earn a C (2.0) or better in every course counted toward the major degree requirements.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Communication
School of Communications
College of Social Sciences
Crawford 320
2550 Campus Road
Honolulu, HI 96822
Tel: (808) 956-8715
Fax: (808) 956-5396
Email: comm@hawaii.edu
Web: www.communications.hawaii.edu

Faculty
*A. Auman, PhD (Chair)—journalism, media ethics
*J. Winter, PhD (Graduate Chair)—emerging communication technology and policy
*W. Buente, PhD (Undergraduate Chair)—information and communication technologies
*P. Buskirk, MFA—multimedia, visual media
*F. Dalisay, PhD—mass communication
G. Kato, MA—broadcast news, law, reporting
*H. Kramer, PhD—intercultural communication
*M. Moody, MFA—video and film production
*B. Oppegaard, PhD

Cooperating Graduate Faculty
J. C. Ady, PhD—organizational communication
T. Brislin, PhD—mass communication, ethics
C. Ho, PhD—communication technologies
D. Lassner, PhD—telecommunication, public relations
N. Okamura, PhD—telecommunication
M. Shapiro, PhD—political science

Affiliate Graduate Faculty
C. Clarke, MA—intercultural organizational intervention
W. Dissanayake, PhD—intercultural counseling
R. Halverson, PhD—telecom, political communication, software development
K. Kawamoto, PhD—digital media, health communication

Degrees Offered: BA in communication, MA in communication, PhD in communication and information sciences (interdisciplinary), Graduate Certificate in Telecommunications Information Resource Management

* Graduate Faculty
Graduate Study

**Master’s Degree**

The School of Communications offers a graduate program leading to the MA degree in communication. The program areas of specialization reflect the expertise of our graduate faculty in intercultural communication, global communication, information and communication technologies, social media, public relations, and communication policy and planning. Both individual faculty members and the program as a whole work within sociocultural and sociotechnical perspectives. The goal of our program in terms of student learning is to help our students build and exchange knowledge in areas relevant to the broad field of communication and to our specific areas of specialization.

Qualified applicants are admitted to the program in the fall semester only. Applicants are not required to have an undergraduate communication degree. All applicants must fulfill the UH Mānoa Graduate Education’s admission requirements. Applicants to the program must submit to the school a statement of academic objectives and the planned role of our program in helping meet those objectives. Applicants must also arrange for three letters of recommendation to be sent to the school. These letters should be written by persons who are familiar with the student’s academic accomplishments. Letters from former professors are preferred. Students applying from non-English-speaking countries must have a minimum TOEFL score of 600 (paper-based) or 250 (computer-based). Applicants whose academic objectives match our program specializations will be admitted as classified students on a space-available basis.

Each classified student admitted into our program is assigned an interim advisor who assists the student in the initial planning of his or her degree program. The student may, at any time, change that advisor by informing the program staff of the change. Once the student has selected a thesis or practicum committee chair (see below) that faculty member becomes his or her permanent advisor. The student remains, however, primarily responsible to ascertain that all program requirements are met in a timely fashion.

Each student must complete a minimum of 33 credits with at least a 3.0 grade point average. These credits are to be distributed by taking:

- Both foundation courses: 611 Communication Theories and 612 Communication Inquiry (6 credits).
- Two core courses (6 credits) from our specializations in Organizational and Intercultural Communication (623 and 643), Telecommunication and New Media (633 and 634), or Global Communication and Journalism (644).
- One seminar 691 (3 credits) (repeatable up to 6 credits).
- One capstone activity (6 credits) selected from 700 (Plan A-Thesis) or 695 (Plan B-Practicum).
- The remaining 12 credits are selected from: additional core courses, advanced courses 646 and 660; courses from the school’s Graduate Certificate Program in Telecommunication and Information Resource Management (TIRM) 680, 681, 682, 683, 684; Directed Research 699; 400-level augmented undergraduate courses, or graduate courses outside the program (both the latter require approval of committee chair; maximum 6 credits).

Each student is expected to take at least one 3-credit course or seminar each semester. All substitutions, exceptions, and/or courses external to the program must be approved by the thesis or practicum committee chair and noted in the student’s official records. If students are not enrolled for courses during a semester they must apply for an official leave of absence. In pursuit of their academic goals students often earn more than the minimum 33 credits. The program can be compressed into 15 months or stretched out over 60 months. Typically, however, students complete the program in 18 to 24 months.

On completing 611 and achieving a 3.0 grade average in all completed course work, each classified student is eligible for admission to candidacy allowing him or her to formally identify a degree plan from the two options available. These options are to complete either a thesis (Plan A) or practicum (Plan B) as his or her capstone activity. At the same time the student selects the chair and members of the thesis or practicum committee. That committee is responsible for supervising and evaluating the student’s thesis or practicum activity. The committee must be comprised of at least three members of the graduate faculty from the university with at least two of those members, including the chair, from our program. Both the committee members and the topic of the activity must be approved by Graduate Education and research to be conducted approved by the university’s Institutional Review Board (IRB). At the completion of the student’s program, he or she must take a two-hour oral exam on their knowledge of the field and defense of their thesis or practicum report.

For further information please visit our website at www.comunications.hawaii.edu/com/graduate/.

**Doctoral Degree in Communication and Information Sciences**

The School of Communications is one of the academic programs that participates in an interdisciplinary doctoral program in Communication and Information Sciences (CIS). See the “Interdisciplinary Program” section for more information on that program.

**Communicology**

College of Arts and Humanities
George 326
2560 Campus Road
Honolulu, HI 96822
Tel: (808) 956-8202
Fax: (808) 956-3947
Email: COMG@hawaii.edu
Web: manoa.hawaii.edu/communicology

**Faculty**

*R. K. Aune, PhD (Chair)—message and information processing, natural language processing, research methods
*A. S. E. Hubbard, PhD (Graduate Chair)—nonverbal communication, conflict and relational management, deception
*W. F. Sharkey, PhD (Undergraduate Chair)—family communication, interpersonal, conflict management, interviewing and interrogation
*K. S. Aune, PhD—relational management, emotion
*R. Boller, EdD—argumentation and debate, public speaking, interpersonal and intercultural communication, leadership
*R. E. Cambra, PhD—interpersonal and instructional strategies, negotiation, intercultural
*J. Gasiorek, PhD—social cognition, intergroup & intergenerational communication, research methods

* Graduate Faculty
*M. S. Kim, PhD—intercultural communication, persuasion and social influence
*H-R. Lee, PhD—health communication, campaigns, persuasion and social influence
*H. E. Lee, PhD—research methods, intercultural communication, interpersonal communication in business settings
J. Matayoshi, MA—public presentations, interpersonal and persuasive communication
*R. Tokunaga, PhD—communication technology in human relations, media selection and effects; statistical methods
*J. Zhang, PhD—interpersonal/intergroup communication, evolutionary theory and communication, research methods

**Themes**: Communication and the skills to communicate effectively. Enhances the ability of the individual to maintain lifelong learning and participation in society than an education that fulfills the liberal education of considerable breadth and depth in regard to communication theory. Furthermore, they are afforded ample opportunity to develop their communicative skills by applying theory in such diverse activities as interviewing, persuasion, group discussion, organizational communication, conflict management, intercultural communication, public speaking, relational communication, deceptive communication, and health communication. Indeed, the basic philosophy of this department–and it is stressed in every course and co-curricular program offered–is that there is no surer preparation for professional life and participation in society than an education that enhances the ability of the individual to maintain lifelong learning and the skills to communicate effectively.

**Undergraduate Study**

**Bachelor's Degree**

**Requirements**

Students must complete 33 credit hours, including:

- COMG 251, 301, 302, 364, 371, and 381
- 5 upper division elective courses

COMG 301 and 302 should be taken no later than the semester after the major is declared. In residence policy: A minimum of 15 credit hours which includes COMG 302, must be taken in the Department of Communicology at UH Mānoa. Introductory courses do not count as electives. Electives must have a prerequisite or be numbered 300 or above and only three (3) credit hours of COMG 399 or COMG 499 (or a combination of the two classes), and/or up to three (3) credit hours of COMG 453 may be applied to the communicology major degree.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

**Minor**

**Requirements**

Students must complete 15 credit hours of communicology, including:

- COMG 364, 371, and 381
- 2 upper division elective courses
- Introductory courses, COMG 399, and COMG 499 do not count toward the minor. Electives must have a prerequisite or be numbered 300 or above and cover a specific content area.

**Graduate Study**

**Master's Degree**

The Department of Communicology offers an innovative MA program emphasizing the central processes and functions of human communication. To that end, course work, seminars, and student research develop a cross-situational understanding of theory and research in the three areas central to the discipline: message processing, relational communication, and social influence. In addition, given our cultural and geographical advantages at UH Mānoa, the Department of Communicology excels in teaching and research in intercultural communication.

All applicants for the MA program in communicology must supplement the application and transcripts required by Graduate Education with three letters of recommendation (preferably from professors with whom the applicant has worked), a one-page statement of goals, and the GRE General Test scores. These supplementary items should be sent directly to the department.

Intended candidates for the MA should have a strong undergraduate preparation in communication or a closely allied discipline. Students who lack this preparation must make up deficiencies either before or during graduate study. In the latter case, the student will be admitted conditionally, pending removal of the deficiencies. Applicants may be interviewed as well.

Further details on the program may be requested from the graduate chair.

**Requirements**

The department offers both Plan A (thesis) and Plan B/C (non-thesis: applied project or comprehensive exams) programs. The Plan A thesis program requires a minimum of 33 credit hours of graduate work, at least 27 of which must be in communicology courses numbered 600 and above, including 6 credit hours of COMG 700 Thesis Research. The Plan B applied project program requires a minimum of 33 credit hours of graduate work in courses numbered 600 and above, which includes at least 3 credit hours of COMG 500 Master's Plan B. The comprehensive exam program requires a minimum of 33 credit hours of graduate work in courses numbered 600 and above and one credit of COMG 500. Communicology courses numbered 400 to 499 and courses from allied disciplines may be counted toward the degree only with prior consent of the graduate chair. COMG 601 an 602 are required for both Plan
A and Plan B programs. Plan A also requires COMG 702 (COMG 620 does not count towards the degree).

Successful completion of Plan A requires each candidate to present an acceptable thesis and pass a final oral examination based on the thesis. Plan B requires each student either complete an applied research project or pass written comprehensive exams. Plan B candidates must also pass a final oral examination based on either the research project or the comprehensive exams.

**East Asian Languages and Literatures**

College of Languages, Linguistics and Literature
Moore 382
1890 East-West Road
Honolulu, HI 96822
Tel: (808) 956-8940
Fax: (808) 956-9515
Web: www.hawaii.edu/eall/

**Faculty**

* R. N. Huey, PhD (Chair)—classical Japanese literature (especially waka)

S. Chang, PhD—Korean language teaching

* S-Y. Cheon, PhD—Korean phonology and phonetics, second language phonology, content-based instruction (CBI), and media-based instruction

* H. M. Cook, PhD—Japanese linguistics, sociolinguistics, discourse analysis and pragmatics; language socialization

S. A. Curry, PhD—Japanese language teaching

* S. Fukuda, PhD—syntax, lexical semantics and their interface phenomena in Japanese, experimental approaches to syntax and lexical semantics, syntax of understudied Asian languages (Vietnamese and Burmese), first language acquisition of syntax-lexical semantics interface phenomena in Japanese and Korean

S. H. Hirate, MA—Japanese language teaching

* H-I. Hsieh, PhD—Chinese language, linguistics, and culture; mathematical linguistics; semantics; cognitive grammar

* K. K. Ito, PhD—modern Japanese literature, particularly fiction of the Meiji period (1908-1912); cultural studies, narratology, and reception studies

T. Iwai, PhD—Japanese language teaching

* S. Iwasaki, PhD—Japanese linguistics, Ryukyuans linguistics, Thai linguistics, language documentation, functional linguistics, discourse analysis

*L. Jiang, PhD—syntax, semantics, syntax-semantics interface, language universals and variation, comparative linguistics, Chinese linguistics (Chinese dialects, minority languages and sign languages), language acquisition

* S. Jiang, PhD—Chinese language and linguistics, cognitive linguistics, Chinese historical syntax, Chinese dialects, language acquisition and pedagogy, technology-assisted language learning

* K. Kanno, PhD—Japanese linguistics, syntax, second language acquisition, parsing

* M. S. Kim, PhD—discourse-functional linguistics, conversation analysis, vocabulary acquisition, Korean language pedagogy

* Y-H. Kim, PhD—modern Korean women writers; modern Korean literature; Korean culture; East Asian women writers and society


* D-K. Kong, PhD—Korean language and linguistics, language acquisition, pedagogy, assessment

M. Lachmann, MA—Japanese language teaching

* D. R. McCraw, PhD—classical Chinese literature, especially poetry, particularly Tang shi, Song shi and ci, and Qing ci

N. T. McPherson, MA—Japanese language teaching

E. Murayama, PhD—Japanese language teaching

G. E. Nakahara, PhD—Japanese language teaching

M. Ogasawara, MA—Japanese language teaching

* T. Ogawa, MA—Japanese language teaching

* M. J. Park, PhD—Korean language and linguistics, pedagogy, pragmatics

* Y. Peng, PhD—20th century Chinese literature and visual culture, Chinese film, critical theory

G. E. Ray, MA—Japanese language teaching

* K. A. Reynolds, PhD—Japanese socio-historical linguistics, and sociolinguistics (gender and class)

* S. Shibayama, PhD—Classical Japanese literature, especially poetry and prose from the twelfth-century; commentary culture of medieval Japan; comparative study of the European Middle Ages and medieval Japan

* H-M. Sohn, PhD—Korean language and linguistics, Korean-Japanese comparative syntax, general linguistics

* M. Spring, PhD—applied linguistics: cross-cultural communication; issues related to developing superior level proficiency; teacher training, cultural literacy; literature: six dynasties and Tang fiction; Tang prose and rhetoric

*M. Tabata-Sandom, PhD—reading in Japanese as a second language, extensive reading in Japanese, language learner literature and second language vocabulary acquisition

* Y. Tateyama, PhD—pragmatics, Japanese language pedagogy, discourse analysis, translation and interpretation

* A. H. Thornhill, PhD—medieval Japanese literature and religion

H. Uchida, MA—Japanese language teaching

Y. Wada, MA—Japanese language teaching

* H. Wang, PhD—Chinese syntax, semantics, and phonology; Chinese language pedagogy; teaching Chinese for professionals

P. C-K. Woo, MA—Japanese language teaching

* D. R. Yoshimi, PhD—Japanese second language acquisition and pedagogy; discourse analysis, pragmatics and sociolinguistics

*M-B. Yue, PhD—20th century Chinese literary and cultural studies, visual culture and media studies, transnational Chinese writings, constructions of Chineseness and diasporic consciousness in Asian-American, exile, and immigrant writings, theories of ideology and representation, feminism, psychoanalysis, film criticism, [Inter-Asia] cultural studies

S. M. Zeng, PhD—Chinese language teaching, translation and interpretation

**Cooperating Graduate Faculty**

G. Kasper, PhD—second-language discourse analysis, conversation analysis, pragmatics, qualitative research methods

**Degrees and Certificates Offered:** Certificate in Chinese, Certificate in Japanese, Certificate in Korean, Certificate in Korean for Professionals, Minor in Chinese, Minor in Japanese, Minor in Korean, BA in Chinese, BA in Japanese, BA in Korean, BA in Korean for Professionals, MA in East Asian Languages and Literatures, PhD in East Asian Languages and Literatures
The Academic Program

The Department of East Asian Languages and Literatures (EALL) is the largest department of its kind in the country and offers a curriculum unparalleled in its breadth, depth, and variety of courses in Chinese, Japanese, and Korean language, linguistics, and literature.

At the undergraduate level, language skill courses help students develop a high level of proficiency in both the spoken and written aspects of the languages. There are separate BA and Certificate programs to prepare American students to function in Korean in given professional fields. Other courses provide both introductory survey coverage and advanced, theme-specific investigations of the literary cultures of East Asia and the linguistic analysis of Chinese, Japanese, and Korean. Cultural awareness as well as language proficiency are further promoted through extra-curricular activities such as student clubs, video/film showings, lectures, and study abroad programs. Our students have the opportunity to participate in study abroad programs in Hainan, China; Kobe and Machida, Japan; and Seoul, Korea. The graduate programs are designed to provide students with advanced professional training in two tracks: 1) language/linguistics, and 2) literary studies.

While most students enroll in language courses to fulfill the general education core requirement for foreign languages, there are many who plan to use Chinese, Japanese, or Korean in research or graduate studies. Those who plan to enter the work force immediately upon completing their undergraduate studies find that their language proficiency opens doors to employment in the local travel industry and other internationally oriented businesses.

Undergraduate Study

BA in Chinese

Requirements

Students must complete a minimum of 34 credit hours, including the following upper division courses:

- CHN 301, 302 or 303 or 305, 401, 402 or 404 or 405, and 461
- 6 credit hours from the following, at least one course must be taken from each of the following group:
  - (a) CHN 451, 452, 455, 456, 457, 470
  - (b) EALL 361, 362, 363B, 363C
- 9 credit hours of approved courses in Chinese language and literature

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

BA in Japanese

Requirements

Students must complete a minimum of 36 credit hours, including:

- JPN 350, 370, 401 or 403, 402 or 404, and 407E
- JPN 407B, 407C, or 407D
- EALL 271 and 272
- 12 credit hours in approved courses

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

BA in Korean

Requirements

Students must complete a minimum of 36 credit hours, including:

- KOR 301, 302, 401, 402, 451, 452, and 470
- EALL 281 or 282
- 12 credit hours in approved courses

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Korean for Professionals Track

Requirements

Students must complete a minimum of 36 credit hours, including:

- KOR 401, 402, 403, and 404 [KOR 307, 308 may replace exempted KOR 401, 402]
- KOR 421, 422, 425 (6 credits), 470, 480, 485, 486, and
- 1-year overseas program year at Korea University

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Minor

Students planning to declare a minor should have completed successfully four semesters of language skill courses or their equivalent and must have a GPA of 2.0 or higher. A minimum of 15-17 credits from five courses in one of the three languages (Chinese, Japanese, Korean) will be required. At least 9 credits will be from non-language skills courses with a focus on linguistics or literature. In the case of native speakers, they will be required to take five non-language skill courses. All courses selected must have the approval of advisors in both the student’s major department and the EALL department. Only courses with a C (not C-) or above will be counted. All courses must be taken within the UH System, with minimum of at least three courses taken at UH Mānoa. A detailed description of program requirements is available at the department office in Moore Hall 382.

Certificate

Certificates in Chinese, Japanese, Korean, and Korean for Professionals are offered to eligible students. A minimum of 15 credit hours from 301 or above in the language of choice must be earned with a minimum GPA of 2.5. A detailed description of the program requirements is available from the department office in Moore 382.

Graduate Study

Complete details on the graduate programs are available from the department office in Moore Hall 382 and on the department’s webpage. All of our graduate degree programs are academic in nature, and focus on the disciplines of linguistic and literary study.

MA graduates of the programs have obtained positions as instructors in private schools, two- and four-year colleges and universities; as translators; and in various capacities in private firms and government service. PhD graduates have obtained teaching positions at universities in the U.S. mainland, Canada, and in several Asian countries.

The MA and PhD are recognized Western Interstate Commission for Higher Education (WICHE) regional graduate programs. Residents of Alaska, Arizona, California, Colo-
rado, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming are eligible, upon admission with a GPA of 3.50 or higher, to enroll at Hawai‘i-resident tuition rates. See the “Tuition, Fees, and Financial Aid” section of this Catalog for more information on WICHE programs.

The MA degree is offered in the fields of Chinese language, Chinese literature, Japanese language, Japanese literature, Korean language, Korean literature, and Korean for Professionals. The PhD degree is offered with concentrations in the same fields, but not in Korean for Professionals. All applicants for the MA program must have a BA in the language of their concentration or equivalent preparation and must submit three letters of recommendation and GRE General Test scores. All applicants for the PhD program must have a BA, must have earned with distinction an MA in the language or literature of their concentration, must submit three letters of recommendation, GRE General Test scores, and a sample of their scholarly writing in English. Normally, each newly-admitted MA student is required to undergo a diagnostic evaluation and each PhD student is required to undergo an assessment, differing according to subfield, as well as fulfill any language requirement, in order to be eligible for advancement to candidacy. Students emphasizing Japanese Language/Linguistics and Korean Language/Linguistics must also fulfill a publishable paper requirement in order to be eligible for advancement to candidacy.

The MA candidate may select either the Plan A (thesis) or Plan B (non-thesis) program; Plan A must have the approval of the graduate chair. The MA in Korean for Professionals is a Plan B program only.

Master’s Degree

Requirements

For Plan A, students must complete a minimum of 30 credit hours, including at least 18 credit hours in the major field and 6 credit hours of thesis research. A minimum of 12 credit hours in the major field must be earned in courses numbered 600 or higher, including a 700-level seminar and excluding 699V.

For Plan B, students must complete a minimum of 30 credit hours, including at least 21 credit hours in the major field. A minimum of 18 credit hours in the major field must be earned in courses numbered 600 or higher, including a 700-level seminar and excluding 699V.

Doctoral Degree

Requirements

In order to be advanced to candidacy, PhD students are expected to master four fields, at least one of which will be outside the students’ areas of specialization and must pass a comprehensive examination covering the four fields. PhD students in Japanese and Korean Language/Linguistics must master three fields and a comprehensive examination covering these three fields and produce a scholarly paper. After being advanced to candidacy, all PhD candidates must complete an original dissertation, and pass a final oral examination in defense of the dissertation. Apart from having a command of English and their language of concentration, candidates must have knowledge of a second East Asian language equivalent to two years of study; in some cases a third East Asian language or an additional European language may be required.

Economics

College of Social Sciences
Saunders Hall 542
2424 Maile Way
Honolulu, HI 96822
Tel: (808) 956-8496
Fax: (808) 956-4347
Email: econ@hawaii.edu
Web: www.economics.hawaii.edu

Faculty

* S. La Croix, PhD (Chair)—economic history, development economics, industrial organization
* C. Bonham, PhD—applied macroeconomics, monetary theory
* P. Fuleky, PhD—time series econometrics, economic forecasting
* B. Gangnes, PhD—international macroeconomics, econometric modeling
* T. Greaney, PhD—international economics, industrial organization
* T. Halliday, PhD—health economics, economic development, econometrics
* R. Juarez, PhD—microeconomic theory
* B. Karacaoglu, PhD—international trade, political economy of trade policy, development economics
* D. E. Konan, PhD—international trade
* S. H. Lee, PhD—population economics, labor economics
* I. Love, PhD—development economics, finance
* J. Lynham, PhD—environmental and resource economics, experimental economics, marine ecology, behavioral economics
* A. Mason, PhD—population economics, macroeconomics
* S. Rhee, PhD—macroeconomics, labor economics
* M. Roberts, PhD—environmental and resource economics, agricultural economics
* J. Roumasset, PhD—development economics, public resource allocation, resource economics
* K. V. Sherstyuk, PhD—experimental economics, game theory
* N. Tarui, PhD—environmental and resource economics, applied microeconomics, applied game theory
* J. R. Tracynski, PhD—economics of education, law and economics
* L. Wang, PhD—monetary economics, macroeconomics, search and matching theory
* X. Wang, PhD—macroeconomics, monetary economics, econometrics, applied microeconomics, labor economics

Cooperating Graduate Faculty

K. Burnett, PhD—environmental and resource economics
I. Cintina, PhD—labor economics, health economics
P. Garrod, PhD—marketing and production economics
E. Im, PhD—econometrics, statistical theory
P. S. Leung, PhD—production economics, quantitative methods
S. G. Rhee, PhD—Asia-Pacific financial markets
T. B. Vu, PhD—development economics, international economics

Affiliate Graduate Faculty

L. Cho, PhD—population economics
L. Endress, PhD—growth theory
F. Fesharaki, PhD—energy economics
H. He, PhD—macroeconomics, health economics
B. Kaiser, PhD—environmental economics, microeconomics
I. Noy, PhD—international finance

Degrees Offered: BA (including minor) in economics; MA in economics; PhD in economics, Graduate Certificate in Ocean Policy

* Graduate Faculty
The Academic Program

Economics (ECON) is the social science that deals with the allocation and use of human and material resources under conditions of scarcity and uncertainty. It examines this subject matter at the micro level (the consumer, the household, the firm, and the industry) and the macro level (the region, the labor force, the government, the nation, and the world). Courses in these topics are complemented by instruction in the statistical and mathematical tools necessary for modeling, data collection and analysis, and hypothesis testing. Students of economics will learn a body of knowledge that is essential to understanding many aspects of the modern world and contemporary public policy issues, including such vital matters as international trade, economic development, the environment, Hawai‘i’s economic challenges, regulation, business cycles, and consumer behavior. A BA in economics is an excellent background for demanding analytical and policy positions in the public and private sectors; it is also a highly regarded preparation for graduate work in law, business, and public policy, as well as economics.

Economics at UH Mānoa is consciously directed toward policy challenges in the Asia Pacific region, which comprises the nations of the Pacific rim and the Pacific Islands, as well as Hawai‘i. Geographic and subject matter interests of students and faculty contribute to a regional specialization in accord with UH’s overall mission.

Exchange Programs

The Department of Economics participates in academic and educational exchanges with Nihon University, Tokyo, Japan; Yonsei University, Seoul, South Korea; and Thammasat University, Bangkok, Thailand.

Advising

Advising is mandatory for all graduate and undergraduate economics majors. Contact the department office for specific information.

Undergraduate Study

Bachelor’s Degree

The BA in economics provides students with an intensive knowledge of the theory and practice of economics, with an emphasis on the analysis of contemporary policy challenges of Hawai‘i and the U.S. in the Asia Pacific region. Majors study a wide range of current economic policy issues and learn a powerful framework for analyzing these issues. They also develop reasoning and communication skills that are useful across disciplines. As a result, the BA program has been successful in preparing graduates for advanced study in economics, business, law, and other social sciences, as well as challenging careers in business management, technical analysis, policy evaluation, and hypothesis testing. Students of economics will

Requirements

Majors must complete 24 credit hours of upper division courses including ECON 300, 301, and 321. At least six credit hours must be earned by completing Upper Division II ECON courses, and students must earn a C (not C-) or better in all courses designated as counting toward the major.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheet/.

Minor

Requirements

Students must complete 15 credit hours of approved upper division courses, including ECON 300 and 301.

Graduate Study

The department offers a graduate program leading to the MA and PhD degrees. Graduate alumni are successful economists, entrepreneurs, and government policy experts in a variety of settings and institutions, especially in Hawai‘i, Asia, and the Pacific region. Faculty research interests facilitate graduate field specializations with regional emphasis on Hawai‘i, Asia, and the Pacific. Student and faculty research focuses on analyses of policy issues of importance to countries in Asia and the Pacific.

The MA program prepares students for policy analysis in government, international agencies, and the private sector, emphasizing application of theory to economic decision-making. The PhD program provides state-of-the-art theoretical and empirical training for high level academic, government, and private-sector careers.

The department maintains strong links with the East-West Center, particularly with the center’s programs on population, economics, and energy. Relationships also exist with various country centers located in the School of Pacific and Asian Studies and with other programs in the College of Social Sciences. In conjunction with the Shidler College of Business, the department also offers a program leading to a PhD in economics and business.

Entering graduate students are expected to have a bachelor’s degree, not necessarily in economics, and to have completed courses in intermediate micro-and macroeconomics theory, elementary statistics, and a mathematics background that includes at least two 3-credit semester courses in calculus. For the PhD program, we recommend the completion of two additional courses prior to entry in any of the following subjects: advanced calculus, linear algebra, differential equations, real analysis, or related areas. Students with deficiencies must make them up prior to entering the program or within the first year of study.

TOEFL scores (for all applicants from foreign countries where English is not the primary means of communication) and two letters of recommendation must be submitted by applicants. Students applying for the graduate program must submit official GRE General Test scores.

Master’s Degree

An MA student must be in residence for at least two semesters, and all work must be completed within seven years of admission. A student following normal progress should be able to earn the MA degree within two years.

Requirements

A student must earn 30 credit hours in economics, including at least 21 hours of 600- or 700-level courses. Up to 9 credit hours of 400-level courses may apply to the 30 credit hour requirement. Graduate credit will not be granted for 300-level courses. A student must have a B average (3.0 GPA) for all courses completed at UH Mānoa applied toward the degree, and a B average for all 600-level and 700-level courses.

The MA requires completion of the following:

- A four-course common core comprising ECON 606, 607, 627, and 628, with a B average;
- A two-course area of concentration; and
An individual research project, constituting the capstone experience for the degree.

A student may also choose to write a master’s thesis in lieu of the individual research project. Students who complete the PhD core may substitute a passing grade on either of the PhD qualifying exams for the individual research project requirement for a master’s degree.

A student who completes the MA degree may apply to the PhD program. By taking appropriate courses, a student may be able to earn both MA and PhD degrees within five years.

**Graduate Ocean Policy Certificate**

Guiding state governance and community stewardship of the oceans requires an interdisciplinary approach grounded in both theory and empirical study of the human-marine environment relationship. The Graduate Ocean Policy Certificate is designed as a concurrent program for classified graduate students and law students in good standing. Community professionals and practitioners who meet minimum admissions requirements are eligible also to build their skills in coastal conflict resolution, maritime boundaries, fisheries economics, species recovery, and ecosystem-based management of marine resources. An advisor assists each student in custom-designing a 15-credit program that draws on marine-related courses at UH Mānoa in environmental and resource economics, geography, law, history, marine science, public policy, conflict resolution, and planning. A major paper or internship project and participation in an interdisciplinary seminar are required. For further information and applications, see the department’s web page.

**Doctoral Degree**

A PhD student must be in residence for at least three semesters and complete all requirements within seven years of admission to the graduate program. A student following normal progress should be able to earn the PhD degree within five years.

**Requirements**

The PhD in economics requires successful completion of:

- seven core courses comprising ECON 606, 607, 608, 609, 627, 628, and 629 with a grade of B- or better in each course;
- qualifying examinations in microeconomic theory and macroeconomic theory;
- seven 600-level and 700-level courses in economics (including ECON 730) beyond the core;
- two fields;
- a research paper;
- an oral comprehensive exam, administered jointly with the defense of the dissertation proposal;
- a final oral exam, including defense of the final dissertation; and
- submission of the final dissertation manuscript to Graduate Education.

Normal progress requires students to take and pass both theory qualifying exams at the end of the first two semesters of study, and to complete all core courses in the first three semesters of enrollment. Students failing a qualifying examination may retake it only once.

Students choose two fields, each consisting of two courses, from among the following five fields offered by the department:

1. Economic development (ECON 610 and 611)
2. International economics (two of ECON 660, 662, and 664)
3. Public economics (ECON 650 and 651)
4. Resource and environmental economics (ECON 637 and 638)
5. Human resources (two of ECON 670, 672, and 674)

Some field courses are offered annually, others less frequently. Students may petition to substitute a field in another discipline or another field in economics for one of the five fields listed above.

Before the end of their fourth semester, students should, in consultation with the graduate chair, reach agreement with a UH Mānoa economics faculty member to serve as their research paper advisor. Any member of the economics graduate faculty may serve as your paper advisory, and the arrangement is by mutual agreement. You then invite two other faculty members to serve as readers of your paper. Have your paper advisor and readers indicate their willingness to serve by having them sign the research paper form, which can be obtained from the staff in the economics department office. Submit the form to the graduate chair for approval before or during the fall semester of your third year of graduate study. During that semester, you are required to register for ECON 730, Research Seminar, and make substantial progress on your research paper. You are encouraged to consult with your paper advisor periodically as you work on your research paper. You may also consult with your second and third readers. Upon completion of the paper, submit it to your advisor and readers, who will evaluate the paper and assign a grade of “pass,” “high pass,” or “fail.” Students who receive a grade of “fail” will have one opportunity to revise the paper provided they meet the appropriate deadlines. The deadline for submitting your paper is **May 1** of your third year of graduate studies and the deadline for resubmissions is **August 1**.

The comprehensive examination—of which the written qualifying examinations are a part—will include a broad probing of the candidate’s general economic knowledge. The oral part of the PhD comprehensive examination will be administered jointly with the defense of the dissertation proposal, before a dissertation committee chosen by the student and approved by the graduate chair and Graduate Education. A student who fails the comprehensive examination may repeat it once. A student who fails a second time is dismissed from the program. Students who pass the oral exam are advanced to candidacy for the PhD.

The final examination, which is oral, covers the candidate’s defense of the final dissertation draft. It is administered orally and is open to the public. Candidates failing the final examination may be allowed to repeat it once upon petition approved by the graduate faculty concerned and the dean of Graduate Education. Those failing it twice are dismissed from the program.

Finally, a dissertation accepted by the dissertation committee is submitted to Graduate Education. The final dissertation must also conform to UH Mānoa standards in content and format.
English
College of Languages, Linguistics and Literature
Kuykendall 402
1733 Donahgho Road
Honolulu, HI 96822
Tel: (808) 956-7619
Fax: (808) 956-3083
Email: enghi@hawaii.edu; see list of contacts on webpage
Web: www.english.hawaii.edu

Faculty
*L. Lyons, PhD (Chair)—post-colonial literatures and theory, Irish literature, cultural studies
*C. Bacchilega, PhD—folklore, narrative, fairy-tale studies, 20th-century fiction, feminist criticism, literary theory, translation studies
*K. Beutner, PhD—fiction and creative nonfiction
*J. Caron, PhD—19th-century American literature, Mark Twain, comic art and literature, popular culture
*J. Carroll, PhD—rhetoric and composition, American novel, fiction
*R. W. Dassenbrock, PhD—modernism, literary theory, post-colonial literature, comparative literature
*D. Desser, PhD—20th-century rhetorics, writing and difference, composition studies
*C. Franklin, PhD—contemporary women’s literature, ethnic American literatures, feminist theory
*M. Fuchs, PhD—modern American literature, autobiography, women writers
*C. Fujikane, PhD—literatures of Hawai‘i, Asian American literatures, feminist/nationalist critical theory and practice
*S. Goldsberry, PhD—creative writing
*M. Heberle, PhD—Renaissance literature, American Vietnam literature
*J. Henry, PhD—workplace writing and subjectivity, composition studies, technical communication and its rhetorics
*K. Ho‘omanawanui, PhD—Native Hawaiian literature, literatures of Hawai‘i, folklore and mythology, children’s literature, translation studies
*C. Howes, PhD—life writing, literary theory, research methods, 19th-century literature
*R. Hsu, PhD—modernism, ethnic literature, Asian American literature, feminist criticism
*J. Lew, PhD—late 18th-century literature, English and European romanticism, Gothic
*P. Lyons, PhD—19th- and 20th-century U.S. literatures, literary and cultural theory, regional and settler literatures in Oceania
*G. Man, PhD—film, narrative, 19th-century British literature
*K. McAndrews, PhD—folklore, oral narrative, American Literature (1905–present), cultural studies in relationship to gender, humor and tourism
*R. McHenry, PhD—Restoration and 18th-century literature, Shakespeare, literature and art
*L. Middleton, PhD—19th-century British literature, women’s literature, psychology and literature
*R. Morales, MA—creative writing, Pacific literature, American ethnic literature
*J. Morse, PhD—American literature, literary history
*G. Nordstrom, PhD—composition and rhetoric
*G. Pak, PhD—creative writing, literature of Hawai‘i and the Pacific, Asian American literature, ethnic American literature
*D. Payne, PhD—composition and rhetoric, computer-mediated writing, collaborative learning
*J. Peters, PhD—modern British and American literature, narratology, the British novel (1700-1945)
*P. Quigley, PhD—environmental literature, ecocriticism, critical theory, 19th century American and British literature, cyber literature
*J. Rieder, PhD—literary and cultural theory, science fiction, British Romanticism
*T. Sammons, PhD—Renaissance and 17th-century literature, Milton, science fiction, rhetoric
*C. Santos Perez, MA—creative writing, international poetry, indigenous literature and theory, Pacific and Chamorro studies
*S. Schultz, PhD—20th-century poetry in English, American literature, creative writing
*S. Shankar, PhD—post-colonial literature and theory, South Asian literatures, translation and translation studies
*C. Sinavaiana, PhD—Pacific literature and drama, ethnic literatures, folklore, feminist criticism
*F. Stewart, MA—creative writing, modern and contemporary poetry and poetics, American nature writing
*J. Taylor, PhD—African American literature, visual culture, critical theory
*A. Te Punga Somerville, PhD—Maori, Pacific and Indigenous literatures and cultural production, Maori studies, Pacific studies, Indigenous studies, Maori and Pacific history, Maori diasporas, postcolonial and gender studies, Indigenous research methodologies
*C. Ward, PhD—critical theory, post-colonial literature, popular culture, oral and performance theory, the novel
*S. Yang Ryan, MA—creative writing, Asian American literature, speculative and social protest fiction
*J. Zuern, PhD—computer-mediated communication, comparative literature

Degrees Offered: BA (including minor) in English, MA in English, PhD in English

The Academic Program
The Department of English encourages students to develop their critical reading, writing, and creative skills through study of a variety of literatures in English, composition and rhetoric, and creative writing. The department recognizes the unique diversity of cultures in Hawai‘i and employs a variety of approaches, including multicultural and Asia Pacific perspectives, to address this uniqueness. Students work directly with faculty in relatively small classes. The department participates actively in UH Mānoa’s Honors Program and its Study Abroad Semester and offers professional internships for interested students in the senior year.

The goals of the undergraduate English program are: (a) to offer a comprehensive range of courses in literary and cultural studies, composition, rhetoric, and creative writing; (b) to develop students’ critical thinking and reading skills; and (c) to develop students’ interests and abilities in rhetoric and writing across a variety of genres. Many of our courses recognize Hawai‘i’s geographical and cultural location in the Pacific.

The graduate program enriches students’ knowledge of literature, composition and rhetoric, creative writing, and cultural studies. MA students are asked to take approximately half of their course work in a specific concentration so that they begin to develop an area of expertise while broadening their under-
standing of other areas of study. The MA thesis or final project at the end of the program gives them the opportunity to do extended research and writing on a topic of their own choosing.

The doctoral program prepares students to become professionals in the field. Required courses are not its focus; rather, it offers students considerable latitude in course selection and requires disciplined, independent work on examinations and the dissertation. Candidates completing the program should have the skills and experience to function as critics, scholars, and writers in an area associated with the profession of English.

Undergraduate Study

Bachelor’s Degree

The Department of English offers the BA degree with informal emphases in American, British, and Pacific literatures; composition and rhetoric; and creative writing.

Requirements

One FW and one ENG 270–273 course are prerequisites for upper-division English courses. Majors must complete 33 credit hours of upper division courses, as follows:

Level Requirements

- at the 300 level:
  A. ENG 320, Introduction to English Studies; this course is foundational and should be taken in the student’s first or second semester of upper division English work; 3 credits
  B. 5 300-level courses are recommended in addition to ENG 320; 15 credits. Several of these courses should be in areas prerequisite to/preparatory for specific courses at the 400 level

- at the 400 level (ENG 320 and one 300-level course are prerequisite to Studies courses):
  C. Single Author (440 Single Author; 442 Chaucer; 445 Shakespeare; or 447 Milton); 3 credits
  D. 2 additional elective courses; 6 credits. At least one 400-level course must be a designated Studies course or ENG 491

- at the 300 or 400 level:
  E. 2 elective courses; 6 credits

- No more than two upper division English large enrollment courses may be counted toward the major

Total: 33 credits

Breadth Requirements

Breadth of Field: the five 300-level courses in addition to ENG 320 must come from at least two different categories:

- Composition/Language/Rhetoric (300, 302, 303, 306, 307, 308, 311)
- Creative Writing (311, 313)
- Genre (340, 360, 361, 362, 363, 364, 365, 366)
- Literature and Culture (372, 373, 374, 380, 381, 382, 383, 384, 385)
- Literature of Hawai’i and the Pacific (370, 371, 375, 376, 378)

Historical Breadth: of the nine courses in addition to Introduction to English Studies and Single Author, one must be pre-1700, one 1700-1900, and one after 1900.

Only courses in which a student receives a C or better may be counted toward the major.

For a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Non-English Department Course

With the consent of the student’s advisor or the director of the undergraduate program, one appropriate three-credit upper division course from outside English may be counted as a major elective.

Advising

Advising is mandatory for majors; new majors will be assigned an advisor when they meet with the director of the undergraduate programs for their required orientation session. Call (808) 956-7619 for an appointment.

Minor

English offers a fifteen-credit minor for students who wish to emphasize a specific aspect of English studies without completing the actual major. Beyond the two required courses, the minor may focus on literary studies, creative writing, cultural studies, or rhetoric and composition. The student may also take electives from any of these areas.

One FW and one ENG 270–273 course are prerequisites for upper-division English courses. All UH Mānoa courses applied to the English minor will come from the Department of English or cross-listed courses. Appropriate upper division transfer credits may apply toward the minor.

The minor consists of:

1. ENG 320, Introduction to English Studies. This course is foundational and should be taken in the student’s first or second semester of upper division English work; 3 credits
2. Single author course (440 Single Author; 442 Chaucer; 445 Shakespeare; or 447 Milton); 3 credits
3. 300-level ENG elective; 3 credits
4. 400-level ENG elective; 3 credits
5. 300- or 400-level ENG elective; 3 credits

No more than one upper division English large enrollment course may be counted toward the minor. Only courses in which a student receives a C or better may be counted toward the minor.

Graduate Study

The department offers the MA in English with four concentrations: literary studies in English, composition and rhetoric, creative writing, and cultural studies in Asia/Pacific. It offers the PhD in these and other areas, for the doctoral program is sufficiently flexible to allow students to develop individualized courses of study. Students applying for the MA are expected to have a bachelor’s degree in English or a closely related field. PhD applicants normally will have completed the MA in English. In addition to the application and transcripts required by Graduate Education, all applicants must submit directly to the department three letters of recommendation and the GRE General Test scores. Applicants must also submit a comprehensive statement of professional goals and objectives; PhD students must submit a representative sample of their writing (scholarly paper or MA thesis); those interested in a dissertation with a creative emphasis must also submit examples of their creative work. The completed application should be sent to Graduate Education by December 1 for the PhD program and January 1 for the MA program. Complete information on the application process is provided on the department’s website.

Courses for the MA and PhD are to be selected from the list of English (ENG) courses, although advanced courses in other disciplines may be substituted with the prior approval of
the graduate director. The consent of the instructor is required for ENG 691, 699, 700, and 800; the consent of the graduate director is required for all graduate courses.

**Master’s Degree**

Graduates of the MA program in English have taught in secondary schools, junior and community colleges, four-year colleges, and universities. Some have pursued doctoral work; others have combined their work in English with another professional field (e.g., business, law, library studies). Still others have found employment in writing, editing, or research-related fields.

MA candidates are required to select a concentration by the end of their first semester in the program. Plan A (thesis) applies only to those admitted into the concentration in creative writing. Plan B (non-thesis) applies to those who have selected the concentrations in literary studies in English, composition and rhetoric, or cultural studies in Asia/Pacific.

**Plan A (Thesis) Requirements**

Plan A is applicable only to students admitted to the Creative Writing concentration. Students complete 33 credits:

- 27 credit hours of course work:
  - ENG 625D and ENG 625B, C, or E
  - 9 credits of course work in creative writing and 12 credits outside of creative writing.
  - One course must be pre-1900
  - One course must have substantial Hawai’i/Asia/Pacific content
  - 6 credits of work on the MA thesis

Students must also achieve intermediate level knowledge of one foreign language.

**Plan B (Non-thesis) Requirements**

Plan B is applicable to students in the Literary Studies in English, Composition and Rhetoric, and Cultural Studies in Asia/Pacific concentrations. All Plan B students complete 33 credits—30 credits of course work and 3 credits of work on the MA final project. One course must have substantial Hawai’i/Asia/Pacific content. All students must also achieve intermediate level knowledge of one foreign language.

- Requirements for those in Literary Studies in English: ENG 625B and ENG 625C, D, or E; 9 credits minimum in LSE. One course must be pre-1700.
- Requirements for those in Composition and Rhetoric: ENG 625C and ENG 625B, D, or E; ENG 605, 705, and 709; 12 credits minimum in other concentrations. One course must be pre-1900.
- Requirements for those in Cultural Studies in Asia/Pacific: ENG 625E and ENG 625B, C, or D; 9 credits minimum of course work in CSAP and 12 credits minimum in other concentrations. One course must be pre-1900. 3 credits may be taken outside of the English department with the permission of the concentration advisor.

Concentration-specific program requirement sheets are available on the English Department website.

**Doctoral Degree**

Since the PhD program offers diverse courses and the opportunity to specialize in a range of different areas, graduates may pursue careers from among several professions, including teaching, research, and writing.

**Requirements**

PhD candidates must fulfill the residency requirement and are required to take seven graduate-level courses in the Department of English; two courses, normally at the 400 level or above, in a field outside of English but related to the student’s research interests; one course with substantial content in Asia/Pacific at the graduate or 400-level, in or out of the English department, while in residence at UH Mānoa. They must pass three area examinations and a comprehensive examination and demonstrate competence in two languages other than English (one of which, if appropriate to the candidate’s research, may be a computer language) or in one language at an advanced level of proficiency. Candidates will be required to complete an original scholarly or creative dissertation representing a substantial contribution to the discipline of English, suitable for publication, and a final oral examination on the dissertation.

**Environmental Studies**

Colleges of Arts and Sciences
Krauss Annex 19, 2500 Dole Street
Honolulu, HI 96822
Tel: (808) 956-7362 or (808) 956-7164
Fax: (808) 956-3980
Email: jcusick@hawaii.edu
Web: www.hawaii.edu/envctr/evs/

**Faculty**

J. Cusick, PhD (Advisor)—environmental studies, education for sustainability, ecotourism, political ecology, protected areas, Pacific Basin

**Affiliate Faculty**

C. L. Andrade, PhD—traditional navigation, Malama‘aina: traditional resource management, indigenous geography, Hawaiian music
L. J. Cox, PhD—community economic development
E. P. Dashiell, MA—environmental and facilities planner, environmental impact statements, environmental investigations
E. H. DeCarlo, PhD—aquatic and environmental geochemistry, oceanography, freshwater
D. Duffy, PhD—conservation, restoration ecology
D. R. Drake, PhD—botany, ecology, Polynesian plants
S. Meder, ArchD—architecture, design, environmental systems
M. D. Merlin, PhD—biogeography, natural history of Hawai‘i
J. K. Odin, PhD—Interdisciplinary Studies advisor, cultural studies of science and technology, literary and political ecology, new technologies and their impact on higher education
T. Radovich, PhD—vegetables, sustainable farming
J. E. Schoonmaker, PhD—Global Environmental Sciences advisor, oceanography
B. Szuster, PhD—geography, coastal resource management, environmental impacts assessment

**Degree and Certificate Offered:** Certificate in Environmental Studies, BA in interdisciplinary studies (major equivalent in environmental studies)

**The Academic Program**

Environmental studies (EVS) is an individually designed, interdisciplinary program established in 1965 and coordinated by the Environmental Center. Students wishing to earn a BA degree with a major equivalent in environmental studies may

* Graduate Faculty
do so under the Interdisciplinary Studies Program. The program encourages a great deal of self direction to accommodate the student’s individual goals and interests.

Environmental studies students may focus their curriculum on either the social or natural/physical sciences and find employment in both the public and private sectors as environmental resource managers, environmental specialists, hazardous waste managers, or any number of related fields. Others pursue graduate studies in environmental sciences, law, chemistry, biology, public health, planning, geography, resource management, etc. A unique feature of the program is the ability to undertake an internship with a local agency or organization chosen by the student. In this internship (IS 489), students design and carry out an environmental research project complete with proposal, progress and final reports, and formal oral presentation to the internship sponsors. The EVS program has enjoyed the consistent cooperation and enthusiasm of more than 40 federal, state, and county agencies and departments and many private organizations as sponsors of EVS students.

Undergraduate Study

Bachelor’s Degree

The equivalent of an undergraduate major in environmental studies is available in the BA in interdisciplinary studies program. For information, contact the Environmental Center or Interdisciplinary Studies Program. Interested students should refer to “Interdisciplinary Studies” within the Undergraduate Education section.

Requirements

- Introductory courses:
  - BIOL 101/101L or BIOL 171/171L
  - CHEM 151/151L or 161/161L or 171/171L
  - ECON 120 or 130
- Major courses: Students must complete a minimum of 36 credit hours, including:
  - BIOL 310 or OCN/OEST/MET//ATMO 310
  - BOT 454 or ZOOL 200/200L
  - GEOG 404
  - OCN 320
  - IS 489
- 20 to 24 credit hours in courses specific to the student’s area of environmental studies specialization

Students must maintain a 2.5 GPA in the major course work.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Certificate in Environmental Studies

A Certificate in Environmental Studies signifies that a student has completed substantial environmental course work in addition to the requirements of his or her regular major. Certificate candidates are required to submit a proposal and complete 15 credit hours of course work, including two required courses and three electives from an approved list of courses. The required courses are BIOL 310 or OCN/OEST/MET//ATMO 310, and IS 489. Electives for social science or humanities majors are two courses in the natural sciences and one from the social sciences. Natural science majors must select two courses from the social sciences and one from the natural sciences.

Electives for the natural science courses include the following:

- BIOL 360, 410, 425
- BOT 450, 453, 454, 455
- GEOG 300, 305, 309, 401, 404, 405, 410
- GG 455
- OCN 320, 330, 331
- ZOOL 439/439L, 450, 485

Electives for the social science courses include the following:

- AMST 320, 420
- ANTH 415, 435
- ARCH 341
- ECON 358
- GEOG 330, 335, 380
- IS 361
- NREM 302
- PLAN 310, 399
- SOC 412

Ethnic Studies

College of Social Sciences
2560 Campus Road, George Hall 301
Honolulu, HI 96822
Tel: (808) 956-8086
Fax: (808) 956-9494
Email: esdept@hawaii.edu
Web: www.ethnicstudies.hawaii.edu

Faculty

T. Tengan, PhD (Chair)—identity, gender, indigenous theory and methodology, Hawai‘i and the Pacific
I. G. Aoudé, PhD—Hawai‘i’s political economy, Middle East politics, social movements in Hawai‘i and the South Pacific
B. Chung, PhD—Chinese diaspora, transnationalism, Chinese Americans, popular culture and music
M. Das Gupta, PhD—South Asians in America, race and gender politics, U.S. immigration policies
U. Hasager, PhD—associate specialist in civic engagement
N. Kent, PhD—political economy in Hawai‘i and the Pacific, American ethnic relations
R. Labrador, PhD—Filipino culture, history and politics in Hawai‘i and the Pacific
D. McGregor, PhD—Hawaiian history, social movements in Hawai‘i and the Pacific
J. Y. Okamura, PhD—race and ethnicity, minority access to higher education, ethnic relations in Hawai‘i, Japanese in Hawai‘i, Filipinos in Hawai‘i, Asian Americans
F. L. Uperesa, PhD—American ethnic and race relations, racism and ethnicity in Hawai‘i

Affiliate Faculty

A. Castanha, PhD—political science (indigenous cultures)
W. Nishimoto, PhD—education (oral history)
L. Petranek, PhD—political science (political economy)
L. Wang, PhD—American studies (immigration law and critical race theory, Asian American politics and public policy, feminist ethnography)

Degree and Certificate Offered: Certificate in Ethnic Studies, BA in ethnic studies

* Graduate Faculty
The Academic Program

The Department of Ethnic Studies (ES) is an interdisciplinatory program with emphasis on undergraduate education. Initiated in 1970, ethnic studies combines traditional and contemporary methodologies with new perspectives on issues of race, ethnicity, and class. The focus is Hawai‘i with its rich legacy of multiethnic histories, but the research, teaching, and service components also involve the U.S. as a whole and comparative studies of societies around the globe.

Ethnic studies provides introductory and advanced courses on theories and practices of ethnicity, race, class, and gender. The program also offers courses on the history and experiences of specific groups, including African Americans and Native Americans. Among groups in Hawai‘i, Chinese, Filipinos, Hawaiians, and Japanese are subjects of separate courses. There are also courses dealing with critical topics such as ethnic identity, land tenure, social movements, and labor history.

Students may earn a BA or the Certificate in Ethnic Studies. Graduates have gone on to successful work in public service, social service, business, law, labor organization, education, and other fields that require sensitivity to people and their backgrounds.

Undergraduate Study

Bachelor’s Degree

Requirements

Students must complete 30 credit hours, including:

- ES 101 and 380
- 12 credit hours on the history and social dynamics of ethnic groups from ES 221, 305, 306, 330, 331, 333, 338, and 339
- 12 credit hours on the history, theories, and problems of ethnic groups and ethnicity in the framework of social, economic, and political change from ES 301, 310, 318, 320, 340, 350, 360, 365, 370, 372, 373, 375, 381, 390, 392, 399, 410, 418, 420, 443, 455, 456, 460, 480, 492, 493, 495, and 496
- A 2.0 GPA in ethnic studies and the 6 credit hours of related courses must be approved by a departmental advisor

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Certificate

Requirements

- Complete 18 credit hours in ethnic studies with a 3.0 GPA
- ES 101 (301 may be substituted)
- 6 credit hours on the history and dynamics of ethnic groups from ES 221, 305, 306, 330, 331, 333, 338, and 339
- 9 credit-hours on the history, theory, and problems of ethnic groups and ethnicity in the framework of social, economic, and political change from ES 301, 310, 318, 320, 340, 350, 360, 365, 370, 372, 373, 375, 380, 381, 390, 392, 399, 410, 418, 420, 440, 443, 455, 456, 460, 480, 492, 493, 495, and 496

Geography

College of Social Sciences
Saunders Hall 445
2424 Maile Way
Honolulu, HI 96822
Tel: (808) 956-8465
Fax: (808) 956-3512
Email: uhmgeog@hawaii.edu
Web: www.geography.hawaii.edu

Faculty

*H. Jiang, PhD (Chair)—cultural geography, environment, perception of nature, China
*D. Beilman, PhD—biogeography, long-term ecology, terrestrial carbon accumulation, paleoenvironmental change
*Q. Chen, PhD—remote sensing, geographic information systems, geostatistics, spatially-explicit modeling
*T. W. Giambelluca, PhD—climatology, hydrology
*R. Jones, PhD—political geography, globalization, borders, sovereign state system, nationalism, South Asia
*M. G. McDonald, PhD—agricultural change, social theory, political geography, Japan
*M. McGranaghan, PhD—computer cartography, geographic information systems
*C. Mora, PhD—interlinks between biodiversity patterns, processes, threats and human welfare
*M. Mostafanezhad, PhD—cultural politics of tourism, politics of consumption, Thailand
*A. Rieser, JD, LL.M.—marine environmental governance; marine science and policy; political geography of the oceans; ocean policy and climate change
*K. Suryanata, PhD—political ecology, agricultural geography, natural resource management, Third World
*R. A. Sutherland, PhD (Associate Dean)—geomorphology, soil erosion, water quality
*B. Szuster, PhD—coastal resource management, environmental impacts assessment, marine recreation, Thailand
*E. A. Wingert, PhD—cartography, remote sensing

Cooperating Graduate Faculty

M. D. Merlin, PhD—biogeography, natural history of Hawai‘i

Affiliate Graduate Faculty

M. Finucane, PhD—environmental perception
J. Fox, PhD—social forestry
N. Lewis, PhD—medical geography
J. Maragos, PhD—coastal and marine resources
T. A. Siddiqi, PhD—energy technology, environmental policy

Degrees Offered: BA (including minor) in geography, MA in geography, PhD in geography

The Academic Program

Geography (GEOG) provides a broad and flexible academic program that explores the human and environmental systems that shape the surface of the Earth. The discipline investigates the interaction of culture, society, ecology and physical environments that characterize particular places and studies how these relationships vary across space. The undergraduate program at UH Mānoa focuses on three interlocking subdisciplines: human geography, environmental geography, and geographic technologies. Human geography investigates the cultural, economic, and
political processes that shape human experiences on the Earth; the relationship between the environment, society, and culture; and the nature of place in the Asia-Pacific region. Environmental geography engages in a systematic study of the Earth’s physical environment (atmosphere, biosphere, hydrosphere, and lithosphere) and considers the challenges associated with natural resource management and global environmental change. Geographic technologies include the study of cartography, geographic information systems (GIS), and remote sensing science.

Students who study geography obtain a holistic understanding of the world and a set of methodological tools that can be applied to a wide range of domestic and international career opportunities. Geographers are involved in environmental planning, natural resource management and social policy development with all levels of government, private firms, non-profit organizations, educational institutions, and international agencies. Hawai‘i’s unique historical, socio-cultural and environmental context also provides a fascinating setting for geographical investigations into the wider Asia-Pacific region.

Undergraduate Study

Bachelor's Degree

Requirements

Students must complete 16 core credit hours including:
- GEOG 101/101L, 104, 151, 380, and 493

In addition to the core requirements, each student must elect one of three of the following streams and complete at least 21 credit hours in the upper division courses specific to each stream.

Environmental stream:
- two environmental geography courses
  - GEOG 300, 302, 303, or 309
  - GEOG 370, 376, 387, or 388
- one human geography course
  - GEOG 322, 325, 330, or 335
- three upper division human geography courses (two from the list below)
  - GEOG 400, 401, 402, 403, 404, 405, 408, 409, 410, 411, 412, or 413

Geotechnical stream:
- two geotechnical courses
  - GEOG 370, 376, 387, or 388
- one environmental geography course
  - GEOG 300, 302, 303, or 309
- one human geography course
  - GEOG 322, 325, 330, or 335
- one intern or research topic course
  - GEOG 468 or 492
- two upper division courses from the list below
  - GEOG 470, 472, 476, or 489

Human stream:
- two human geography courses
  - GEOG 322, 325, 330, or 335
- one environmental geography course
  - GEOG 300, 302, 303, or 309
- one geotechnical course
  - GEOG 370, 376, 387, or 388

three upper division human geography courses (two from the list below)
- GEOG 421, 422, 423, 424, 425, 426, 435, or 436

Individual programs are designed in consultation with the undergraduate advisor.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Minor

Requirements

The minor in geography requires 15 credits of upper division course work in geography, which should include at least one course in each of the three areas: human geography, environmental geography, and geotechnology.

Graduate Study

The department offers programs of graduate study and research leading to the MA and PhD degrees. Faculty interests and supporting strengths of UH Mānoa provide advantages for study of the following general topics: (a) environmental studies and policies; (b) resource management and systems; (c) conservation, urbanization, and regional development; (d) cartography, remote sensing, and geographic information systems; and (e) Pacific and Asian regional problems.

Applicants are expected to have a broad-based undergraduate education encompassing basic courses in the physical sciences, social sciences, and humanities. They should have a firm grasp of the fundamentals of environmental and human geography and of basic cartographic and quantitative techniques. Intended candidates for the MA or PhD need not have an undergraduate major in geography; students from related fields are welcome, but any subject-area weakness must be remedied by course work.

Holders of graduate degrees in geography are employed in research and administrative positions in county, state, federal, and international agencies; research positions in private business, especially consulting firms; and teaching positions in secondary schools, community colleges, colleges, and universities.

Master’s Degree

Applicants for admission to the MA program in geography must provide two transcripts, GRE scores (General Test only), completed application forms (available from the department, Graduate Education, and the Web), and three letters of reference.

Requirements

The department offers a Plan A (thesis) program. In consultation with an advisory committee, the candidate plans a coherent program of study drawn from departmental offerings and pertinent courses from other UH Mānoa departments and programs. Each MA student must complete a minimum 31-credit program, including:
- 7 credit hours of core classes (GEOG 692, 695, 696)
- 15 credit hours in the chosen field of specialization
- 3 credit hours in advanced research skills
- 6 credit hours in GEOG 700 Thesis Research

Doctoral Degree

The PhD program is highly selective, and admission is based upon demonstrated competence in previous work and promise of research ability. In addition to the materials required for MA
admission, PhD applicants must submit representative samples of research writing and a comprehensive statement of professional goals and objectives. Students who have completed MA degrees in fields other than geography may be considered for admission to the PhD program. If admitted, however, they must undertake any remedial course work recommended by the department.

**Requirements**

The PhD program consists of advanced courses and research seminars in the department, independent reading and research, and work in related disciplines. Each candidate will be expected to have taken the core program required for MA candidates or its equivalent. In addition, the following are common elements of all geography PhD programs:

1. **Attendance and participation**, while in residence, in the geography colloquium;
2. **Familiarity with the general development of geographic thought** (GEOG 695);
3. **Minimum of 15 credit hours** in graduate courses in a departmental field of specialization (course work taken at the MA/MS level may be used in partial fulfillment of this requirement);
4. **Minimum of 6 credit hours** in research methods or techniques (statistics, cartography, remote sensing, GIS, quantitative or qualitative methods, computer applications, field methods, experimental methods, laboratory techniques or bibliographic techniques);
5. **Passing of written and oral comprehensive examinations**; and
6. **Submission and defense of a satisfactory dissertation.**

**History**

College of Arts and Humanities
Sakamaki A-203
2530 Dole Street
Honolulu, HI 96822
Tel: (808) 956-8486, 956-8358
Fax: (808) 956-9600
Web: manoa.hawaii.edu/history

**Faculty**

*D. J. Cohen, PhD—modern Europe, political and legal history*

*H. F. Ziegler, PhD—modern Europe, Germany, Holocaust, world history*

*S. J. Reiss, PhD—U.S. foreign relations, Latin America and Caribbean, African*

*M. P. Romaniello, PhD—early modern Europe, Russia, Soviet Union, gender*

*J. P. Rosa, PhD—Hawaiian Islands, 20th century Hawai’i, U.S. social and cultural*

*S. Schwartz, PhD—ancient Europe, classical history, gender, law*

*Y. Totani, PhD—modern Japan, Pacific*

*W. Wang, PhD—classical China, Ming/Qing China, politics and culture*

*T. J. Yoo, PhD—modern Korea, colonialism, gender and cultural studies*

*H. F. Ziegler, PhD—modern Europe, Germany, Holocaust, world history*

**Cooperating Graduate Faculty**

B. Andaya, PhD—Southeast Asia

D. J. Cohen, PhD—modern Europe, political and legal history

**Degrees Offered:** Undergraduate Certificate in Islamic Studies, BA (including minor) in history, MA in history, PhD in history

**The Academic Program**

History (HIST) is the study of change and continuity in human society over time. Drawing upon concepts and methods of many disciplines, history provides perspective on the human condition, past and present. The discipline of history develops skills in evaluating evidence, organizing information, clarifying and structuring concepts, and writing narratives and expositions. History is a core around which liberal education can be structured. The study of history lays a foundation upon which one can develop a cultural, social, and intellectual life that enriches an understanding of the wider world.

Majoring in history is an excellent way to move into specialized study in such areas as teaching, library and information science, foreign service, medicine, law, and business. Those who plan to pursue a career as professional historians will want to continue their education and obtain the MA and PhD degrees. The Department of History of UH Mānoa offers a full range of courses in American, Asian, European, Pacific, and world history.

**Undergraduate Study**

**Bachelor’s Degree**

**Requirements**

Students must complete eleven courses (33 credit hours) in history with a grade of C (not C-) or better, distributed as follows:

- Minimum of five courses (15 credit hours) in one of the following four fields (U.S., Europe, Asia/Pacific, Europe, or Comparative/World)
- One upper division course (3 credit hours) in each of the other three fields
Courses for the graduate programs are to be selected from among the history courses listed in back of the Catalog and from graduate offerings in related disciplines as directed by the student’s supervisory committee. The consent of the instructor is required for admission to all courses numbered 600 and above. Courses numbered over 600, except HIST 602 and 790, may be repeated once for credit.

Master’s Degree

Intended candidates for the MA degree must present a minimum undergraduate preparation of 18 upper division credit hours in history or some closely allied field such as Asian studies or American studies. Students who lack this preparation or who wish to undertake study in an area of history other than that of their undergraduate preparation must make up deficiencies either before or during graduate study. In the latter case, the student will be admitted only conditionally, pending removal of the deficiencies.

The prospective MA candidate may select either Plan A (thesis) or Plan B (non-thesis). Both plans require the intended candidate to give evidence of competence in a foreign language appropriate to the field of major interest. In addition, students in the U.S. or East Asia history areas in either Plan A or Plan B must also meet seminar distribution requirements, which raise the minimum required 600-level work to 18 credit hours.

Plan A (Thesis) Requirements

Plan A requires a minimum of 24 credit hours of graduate work, at least 15 of which must be in courses numbered 600 and above (including HIST 602), plus 6 credit hours of HIST 700 Thesis Research, a written thesis, and a final oral examination, which is a defense of the thesis.

Plan B (Non-thesis) Requirements

Plan B requires a minimum of 30 credit hours of graduate work, at least 18 of which must be in courses numbered 600 and above (including HIST 602), comprehensive examinations in two fields of history (a major and a minor), a final oral examination covering those two fields of history, and submission of two major research papers from graduate seminars, one in the major field and the other in the minor field.

Doctoral Degree

Intended candidates for the PhD degree are expected to possess the MA degree in history or its equivalent. The PhD candidate must demonstrate the capability of pursuing a successful career as a professional historian by showing initiative in historical research and by giving evidence of the ability to present findings both orally and in writing.

Requirements

The candidate must prove competence by the acquisition of a broad background in general history, passing four comprehensive examinations in two broad geographic areas of history and completing an original dissertation and a final oral examination. The candidate must also demonstrate a knowledge of at least two foreign languages related to the dissertation topic; for students of American or Hawaiian history an alternative requirement may, at the discretion of the doctoral committee, be substituted for one of the languages.
Indo-Pacific Languages and Literatures

College of Languages, Linguistics and Literature
Spalding 255
2540 Maile Way
Honolulu, HI 96822
Tel: (808) 956-8672
(808) 956-7452
Fax: (808) 956-5978
Email: hip@hawaii.edu
Web: www.manoa.hawaii.edu/pll/

Faculty
J. F. Mayer, PhD (Chair)—language learning and teaching, language in society, Samoan
A. S. Agcaoili, PhD—Philippine literature and culture, creative writing, poetry, fiction, drama, Ilokano language and literature, philosophy of language, literary relations, literatures of exile and diaspora
P. C. Arboleda, PhD—Philippine literature, creative writing, Ifalilig orature and Philippine folklore, gender studies, literary theory, and Southeast Asian traditional culture
*S. Bhatawadekar, PhD—Hindi, Urdu language, foreign and heritage language teaching, pedagogy, curriculum and material development and program building; South Asian cinema and culture; film adaptation of literature, Hindi and Buddhist religious philosophies and their reception in the West; German-Indian comparative philosophy
S. T. Chailloux, MA—linguistic anthropology, the power’s dimension of the Tahitian language in the political and religious area; anthropology of Christianity, syncretism and contextual theology in the Tahitian Protestant Church; contemporary history of Tahiti; Tahitian oratory art (traditional speech)
I. Gasmen, MA—Filipino (Tagalog) language learning and teaching; language and multimedia; educational communication, distance education
L. Hamedani, PhD—linguistics, Persian language syntax, testing, translation, Persian culture, and modern and classical Persian literature as well as pedagogy and second language acquisition
Y. Hoonchamlong, PhD—Thai linguistics, language learning and teaching, information technology in language research and language learning
J. R. Knutson, PhD—Assistant Professor of Sanskrit and Bengali, Sanskrit literature and literary theory, ancient and early medieval history and literary history of South Asia, Early Middle Bengali poetry, comparative premorden poetry and poetics
U. Kozok, PhD—Indonesian language and literature, prehistory and paleography of Island Southeast Asia, Sumatran philology
F. Lesa, PhD—language learning and teaching, Samoan
S. D. O’Harrow, Doceo—Vietnamese language, philology and civilization, Sino-Vietnamese
L. C. Pagkalinawan, PhD—Filipino (Tagalog) language learning and teaching, Filipino linguistics, Philippine literature, creative writing, sociolinguistics
C. Sak-Humphry, PhD—Khmer language, linguistics and literature; development of Khmer language teaching materials, linguistics research on Old Khmer inscriptions (Pre-Angkor to Angkor period)
L. Q. Santiago, PhD—Philippine literature, Filipino and Ilokano languages and literatures, poetry, fiction, creative writing and critical writing, comparative literature, women and feminist literatures, and translation studies
M. F. Simanu-Klutz, PhD—Samoan language learning and teaching, pedagogy, traditional literature and forms of entertainment, intersections of oral traditions and cultural history, creative writing
J. Soria, PhD—Ilokano language, second/foreign, and heritage language teaching and learning, curriculum development and evaluation, media literacy and electronic portfolio

Degrees and Certificates Offered:
Undergraduate Certificate in Indo-Pacific languages (Filipino, Hindi, Ilokano, Indonesian, Khmer, Samoan, Sanskrit, Tahitian, Thai, or Vietnamese); BA in Philippine Language and Literature; BA in interdisciplinary studies (concentration in Hindi, Indonesian, Samoan, Sanskrit, Thai, or Vietnamese); minor in Filipino and Ilokano Language and Culture

The Academic Program
Indo-Pacific Languages and Literatures (IPLL) provides instruction in the languages of the Indo-Pacific area to a broad spectrum of students at UH Mānoa. The department’s coverage of these languages is unique in the U.S.: This department is the only one to offer programs of study in four Polynesian languages, most of the national languages of Southeast Asia, as well as classical and modern Indian languages as well as Arabic, Urdu, and Persian. Beyond language, the department offers courses in the literatures and cultures of the area, including literature in translation of South and Southeast Asia, Polynesia, and the Philippines. Opportunities are available for study abroad in certain areas. The department at UH Mānoa provides an opportunity without parallel elsewhere in the country for students to acquire an in-depth knowledge of the languages and cultures of that part of the world that encompasses more than 25 percent of the Earth’s population and an unusual diversity of peoples.

All the department’s elementary- and intermediate-level language courses may be used to fulfill the Hawaiian or second language requirement for all bachelor’s degrees at UH Mānoa. Students of Indo-Pacific languages and cultures can also enhance their opportunities to find a career in international relations; provide service to the community in such fields as social work, public health, nursing, medicine, and law; perform research on Asia and the Pacific; and develop cross-cultural awareness and understanding in Hawai’i’s multicultural environment.

Language offerings include Arabic, Cambodian (Khmer), Chamorro, Filipino, Hindi, Ilokano, Indonesian, Maori, Marshallese, Persian, Samoan, Sanskrit, Tahitian, Thai, Tongan, Urdu, and Vietnamese. For additional languages and topics, see Indo-Pacific languages (IP) courses listed at the back of the Catalog.

Undergraduate Study

Certificates
On recommendation of the Department of Indo-Pacific Languages and Literatures, UH Mānoa confers certification of achievement in Filipino, Hindi, Ilokano, Indonesian, Khmer, Samoan, Sanskrit, Tahitian, Thai, and Vietnamese.

Requirements
15 credit hours beyond the intermediate level in the language of choice, including:
- 6 credit hours in continuing language study
- 9 credit hours in language, literature, or structure courses selected to complement the major field of study

A 3.0 GPA in courses leading to the certificate is required.

* Graduate Faculty
BA in Philippine Language and Literature (with concentration in Filipino or Ilokano)

The program has the following objectives: prepare students for future careers in community service and education; prepare students for advanced research and/or graduate studies in various fields in the humanities and social sciences; and ultimately, serve students of Filipino ancestry by providing them with a better understanding of Philippine culture and proficiency in a Philippine language.

To view the Bachelor Degree Program Sheets with Filipino and Ilokano concentrations, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Requirements

A minimum of 36 credit hours, made up of 24 credits in required language and literature courses in Filipino or Ilokano

- 12 credits language skill courses: 301–402
- 12 credits literature and culture courses
- and 12 credits upper division and outside electives

Minor in Filipino

- Students completing the program would have both oral and written competence in Filipino as well as cultural content sufficient for use in professional careers, graduate work or research, and field work.

Requirements

A minimum of 15 credit hours from five non-introductory courses in Filipino and Philippine culture is required.

- at least 9 credits culture and literature courses
- 6 credits language skill courses

Minor in Ilokano

- Students completing the program would have both oral and written competence in Ilokano as well as cultural content sufficient for use in professional careers, graduate work or research, and field work.

Requirements

A minimum of 15 credit hours from five non-introductory courses in Ilokano language and culture is required.

- at least 9 credits culture and literature courses
- 6 credits language skill courses

Honors and Awards

Samuel H. Elbert Graduate Scholarship

Offered to encourage graduate-level research and study for students specializing in Pacific Island language and related fields, this scholarship provides an award of up to $5,000 per semester to students registered in graduate programs at UH Mānoa.

Amos P. and Edna Lee Leib Scholarship for Graduate Study of Literature of the Pacific

Offered to support graduate students pursuing the study of literature of the Pacific.

Ilokano BA Scholarship

The scholarship provides academic recognition to an undergraduate student in the College of Arts and Sciences pursuing a Bachelor of Arts in Philippine Language and Literature with Concentration in Ilokano.

Roshan Institute Graduate Fellowship for Persian Linguistics, Language Acquisition and Applied Linguistics

Offered to support graduate students pursuing the study of Persian, Roshan Cultural Heritage Institute provides two renewable Graduate Fellowships for outstanding PhD students in Persian Linguistics, Language Acquisition, and Applied Linguistics.

Roshan Institute Graduate Student Fellowship for Persian

Offered to support graduate students pursuing the study of Persian, Roshan Cultural Heritage Institute provides two annual non-renewable fellowships of $5,000 for graduate students.

Jack Haven Ward Graduate Scholarship

Promoting the study of Tahitian (first priority) and any other language of French Polynesia or Balinese.

Information and Computer Sciences
The Academic Program

Information and computer sciences (ICS) is the study of the description and representation of information and the theory, design, analysis, implementation, and application of algorithmic processes that transform information. Students majoring in ICS will learn to use computer systems, a valuable skill which can be applied in all fields of study. Students will also learn the scientific principles and technology required to develop new computer systems and applications. The curriculum covers all major areas of computer science with special emphasis on software engineering, computer networks, artificial intelligence, human-computer interaction and bioinformatics, and areas uniquely suited to Hawai‘i’s role as a multicultural and geo-graphical center of the Pacific.

Undergraduate Study

Bachelor’s Degree

To be admitted into the program, first-year students entering UH Mānoa directly from high school must first be admitted into the Colleges of Arts and Sciences. For continuing students, a cumulative GPA of at least 2.0 is required for admission.

BA in Information and Computer Sciences

Requirements

Students pursuing this degree are required to submit a short proposal listing the courses they intend to take to complete their ICS major. An ICS faculty advisor must approve this proposal in writing. Samples of course proposals are available at the ICS department office. Students must complete the following courses (51 credits):
- ICS 111, 141, 211, 212 or 215, 241, 311, 312 or 331, 313 or 361, 314, 321, and 332
- At least five ICS or other approved courses at the 400 level or above

Substitutions are permitted with the written approval of an ICS faculty advisor.

Waiver of certain requirements, such as by Advanced Placement CS Exam, must be approved by the ICS faculty advisor.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Minor

A cumulative GPA of at least 2.0 and a grade of B (not B-) or higher in ICS 111 in computer science are required for admission.

Requirements

Students must complete ICS 211 with a grade of B (not B-) or higher, 212, and 241 and their prerequisites, 111 and 141, and three ICS courses at the 300 level and above with a grade of C (not C-) or better.

Graduate Study

The department offers the MS degree in computer science, the MLISc degree in library and information science (see the “Library and Information Science” section within the Colleges of Arts and Sciences for more information), and the PhD degree in computer science. The department is one of four academic programs that cooperate in an interdisciplinary doctoral program in communication and information sciences (see the “Communication and Information Sciences” section within the Colleges of Arts and Sciences for more information).

Applicants for the MS and the PhD in computer science are required to take the GRE General Test. Applicants from foreign countries must be academically qualified, proficient in English (TOEFL or IELTS with scores above the minimum required by Graduate Education, with the additional requirement that TOEFL scores be 580/237/92 or above for admission to the MS program, and 600/250/100 or above for admission to the PhD program, where scores are listed as paper/computer/internet), and sufficiently financially supported.

The department offers three forms of financial aid: teaching assistantships, research assistantships, and tuition waivers. The department offers a limited number of assistantships each semester, most of which are teaching assistantships. Teaching and research assistants work approximately 20 hours per week under the supervision of a faculty member and receive a stipend as well as a tuition waiver. Teaching assistants support instruction and research assistants support extramurally funded research projects. Teaching assistantships are awarded to those applicants who can best support the instructional program. Similarly, research assistantships are awarded to those applicants who can best assist faculty with their research projects. Applicants accepted for admission may be eligible for partial financial aid in the form of a tuition waiver from Graduate Education and foreign applicants from Pacific or Asian countries may be eligible for Pacific-Asian Scholarships. Prior to submitting a
tuition waiver application form, foreign applicants must submit TOEFL/IELTS scores and documentation of financial support for expenses other than tuition to the Graduate Student Services Office. To apply for any of these forms of support, students should submit the ICS Graduate Assistantship Application along with three letters of recommendation using the Graduate Assistantship Evaluation Form. Because we can offer assistance to only a small fraction of applicants, we highly encourage students to also seek other forms of support, such as the East-West Center or computer-assisted databases.

Master’s Degree

The master’s program is intended for students planning to specialize in computer science or to apply computer science to another field. Applicants who do not possess an undergraduate degree in computer science from an accredited institution will need to complete equivalent coursework.

Requirements

Plan A (thesis) and Plan B (non-thesis) are available. A minimum of 31 credit hours is required under both plans. A minimum B average must be maintained in all courses.

Plan A (Thesis) Requirements

1. At least six ICS graduate courses, i.e. courses with numbers between ICS 600 and ICS 692, with the exception of ICS 690. At least one course must be taken from each of four areas of concentration in the program to ensure breadth of knowledge. 3 credits of ICS 700 may be substituted for one of these six courses;
2. Two additional elective 600-level courses must be taken either from the ICS department or some related discipline (such as LIS, EE, MIS, etc.) on a topic related to computer science. Elective courses must have prior approval from the ICS graduate chair as to the suitability prior to enrollment in the courses;
3. Up to two of the graduate courses may be replaced by regular ICS 400-level courses (not ICS 499), taken after enrolling in the ICS graduate program. ICS 400-level courses do not count towards the area requirement.
4. Thesis research taken as 6 credits of ICS 700 is required for the degree. These credits are typically taken close to or during the final semester in the program consist of six credits of ICS 700; and
5. ICS 690 (taken for CR/NC) for one semester.

Plan B (Non-thesis) Requirements

1. At least six ICS graduate courses, i.e. courses with numbers between ICS 600 and ICS 691, with the exception of ICS 690. At least one course must be taken from each of four areas of concentration in the program to ensure breadth of knowledge;
2. Two additional elective 600-level courses must be taken either from the ICS department or some related discipline (such as LIS, EE, MIS, etc.) on a topic related to computer science. Elective courses must have prior approval from the ICS graduate chair as to the suitability prior to enrollment in the courses;
3. Up to two of the graduate courses may be replaced by regular ICS 400-level courses (not ICS 499), taken after enrolling in the ICS graduate program. ICS 400-level courses do not count towards the area requirement.
4. A final project taken as ICS 699 (a maximum of six credits is counted toward the degree) under the supervision of a faculty member with a written report of the final project is required at the end of the student’s program of study; and
5. ICS 690 (taken for CR/NC) for one semester.

The administrative procedures for the program include the following rules:

1. The student must meet with the graduate program chair during the first semester;
2. Upon completion of a least 12 credit hours of courses applicable to the degree, students are encouraged to propose a degree plan by selecting Plan A (Thesis) or Plan B (Non-Thesis) options;
3. Plan A students are encouraged to choose a thesis topic and committee upon completion of 18 credit hours of applicable courses; and
4. All requests for changes in degree plan must be submitted in writing by the student and approved by the graduate program chair before the diploma application is filed.

PhD in Computer Science

The department offers a PhD in computer science that prepares students for creative research, teaching, and service. There are two programs leading to the PhD degree, one designed for the applicant entering with bachelor’s degrees, and the other for those who already have master’s degrees. Students may begin their program either in the fall or spring semesters.

Applicants with bachelor’s degrees must first satisfy the admission and degree requirements of the master’s degree in computer science. Advantages to this route are (1) students are admitted at an early stage to the PhD program; (2) they will, in practice, usually take a year LESS to obtain their PhD since the MS portion of the program will prepare them for their qualifying examination; and (3) students who have completed the MS requirements will have the option of obtaining a master’s degree even if they do not continue with the PhD program.

Applicants with master’s degrees in areas other than computer science may be admitted to the program, but will be required to fulfill their program deficiencies with additional coursework.

Requirements for students to complete the PhD program are:

1. Passing a qualifying examination demonstrating core competency in computer science no later than the end of the first year of their PhD studies;
2. Preparing a portfolio showing research readiness by the end of the second year of their PhD studies;
3. Up to two of the graduate courses may be replaced by regular ICS 400-level courses (not ICS 499), taken after enrolling in the ICS graduate program. ICS 400-level courses do not count towards the area requirement.
4. Defend their PhD proposal;
5. Final defense of PhD dissertation.

In addition, students must continue to pass a seminar course(s), ICS 690, during the “PhD portion” of their program. After passing the oral examination covering their general preparation for the research involved, students must write a dissertation that must be approved by the doctoral committee.

Interdisciplinary Doctoral Degree Program

The ICS department participates in an interdisciplinary program in Communications and Information Sciences (CIS) that integrates computer science, library science, communica-
tion and management information systems. Due to the broad knowledge base required to support the program, it draws on a variety of majors such as behavioral science, economics, engineering, and political science. The computer science program is one of four academic programs (COM, ICS, ITM, and LIS) that support this degree. See the “Interdisciplinary Program” section for more information on this program.

Journalism
School of Communications
College of Social Sciences
Crawford 320
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Tel: (808) 956-8881
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Email: jour@hawaii.edu
Web: www.communications.hawaii.edu

Faculty
A. Auman, PhD—multimedia reporting, editing, media ethics, publication design, race, ethnicity, gender and media
G. Y. Kato, MA—broadcast news, law, reporting
B. Oppegaard, PhD—multimedia journalism

Degree Offered: BA in journalism

The Academic Program
Journalism (JOUR) education develops students’ critical thinking skills and ability to gather, analyze, and organize information and to communicate it clearly, effectively, and responsibly using multiple media platforms such as print, broadcast, online, and other new media. Journalism education embraces the social, cultural, and historic contexts of reporting on public and social institutions as well as on individuals and groups. It stresses the importance of a free, vigorous, and responsible press to the maintenance of an informed citizenry in order to exercise the rights of self-governance in a democracy.

The journalism degree program is professional in its orientation. Admission to the major requires sophomore standing and at least a 2.5 GPA after completion of JOUR 250. All students must take either ICS 101 or 110 or 111 or equivalent before taking 400-level courses. Students are encouraged to work for campus media such as Ka Leo O Hawai‘i or KTUH-FM news and to participate in an extensive program of professional internships and the UH Mānoa chapter of the Society of Professional Journalists (SPJ).

Advising
Advising is mandatory for all journalism majors.

Undergraduate Study

Bachelor’s Degree

Requirements
- Admission to the major is restricted to students with sophomore standing and at least a 2.5 GPA after completion of JOUR 250 with a B or better.
- Students are required to take ICS 101 or 110 or equivalent before taking 400-level courses.
- 33 credit hours minimum in journalism courses.
- All students enrolled in journalism classes requiring off-campus assignments must sign a UH Waiver Form—Assumption of Risk and Release.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Required Courses
- JOUR 250, 300, 320, 330, 365, 460, each 3 credits
- JOUR 401 and 402, each 6 credits
- 3 credits of electives or internship

Languages and Literatures of Europe and the Americas
College of Languages, Linguistics and Literature
Moore 483
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Email: llea464@hawaii.edu
Web: manoa.hawaii.edu/lea

Faculty

*P. M. Chandler, PhD (Chair)—second language acquisition, applied Spanish linguistics, Portuguese language
*L. V. Aranda, PhD—U.S. Latino literature, translation
*A. Ascunce, PhD—19th, 20th, and 21st-century Spanish literature and cultural studies
*C. D. Beaule, PhD—Latin American (Andean) anthropology, household archaeology
*V. H. Bennett, PhD—Russian language and literature, 19th-century Russian literature, Russian symbolism, modernism and literature of the 1920s
*L. Bousquet, PhD—20th and 21st century French literature and culture, French Oceania, history of the novel
J. M. Debrah, MA—French language instruction
K. A. Galante, MA—Spanish language instruction
*M-C. Garneau, PhD—19th- and 20th-century French literature, oral genres, Italian
*C. R. Gerhardt, PhD—20th-century German literature, culture, and film
*M. González-Lloret, PhD—second language acquisition, technology and language instruction, Spanish linguistics, pragmatics
L. N. Hamasaki, MA—classical language instruction
*D. Harris-McCoy, PhD—Greek and Latin literature, intellectual history, magic and divination
A. B. Hawajska-Waters, MA—German language instruction
*K. A. Hoffmann, PhD—17th-century French literature, critical theory, theatre, interdisciplinary studies
J. M. Huss, MA—French language instruction
*A. Kostetskaya, PhD—Russian fin-de-siècle literature and culture, conceptual integration and blending theories, Russian and German war film
L. E. Kou, MA—Spanish language instruction
*R. J. Littman, PhD—Greek literature, ancient history, ancient medicine, Biblical studies, Egyptian archaeology

* Graduate Faculty
The Department of Languages and Literatures of Europe and the Americas (LLEA) is divided into five divisions: Classics (ancient Greek and Latin), French/Italian, German, Russian, and Spanish/Portuguese/Latin American and Iberian Studies. Language instruction at the beginning and intermediate levels is offered in French, German, Greek, Italian, Latin, Portuguese, Russian, and Spanish. Advanced courses in composition, conversation, and linguistics are offered in French, German, Russian, and Spanish. Courses in the literatures of France, the Francophone world, German-speaking countries, Italy, Latin America, Russia, Spain, and Wales are offered in the original language, as are courses in the literatures of ancient Greece and Rome. Cultural studies courses that use a strong interdisciplinary approach and critical interpretive perspectives to consider the politics of representation, culture, and identity include Hispanic Cultural Studies, U.S. Latino Culture and Literature, Indigenous Peoples of Latin America, Latin American Cultural Perspectives, Spanish Cultural Perspectives, Freaks and Monsters, the Ethics of Otherness, French Civilizations, French Culture for Americans, French and Italian Literature as Film. Courses designed to acquaint students from other fields with the traditions and cultures of Europe and the Americas are also available, both in English and in the target language and in advanced courses in specialized topics: Europeans in the Pacific, French and German Civilization, and Russian Arts and Culture.

LLEA believes that the study of film allows for an array of interdisciplinary considerations ranging from the aesthetics and politics of representation to the socioeconomics of production and distribution. It enriches students’ literacy concerning visual arts, narrative, sound, movement and space, at the same time that it provokes their questioning of ethical, critical, social, and moral assumptions. LLEA offers a wide range of courses focusing on the aesthetic and historical development of film in Europe and Latin America: History of World Film, Inter-
**Graduate Study**

**Master’s Degree**

LLEA has designed MA programs that combine the study of language and literature with other forms of expressive culture in their permutations in the specific geographic regions of Europe, the U.S., Latin America, the Pacific Basin, and Africa. Graduate students are offered the following opportunities: an MA degree in French or Spanish; graduate teaching assistantships on a competitive basis; preparation for a PhD program and a career in teaching. Former students have found careers in government and foreign service; editing, publishing, and translation; law, business, and international banking; fashion, the arts, and travel industry.

**Admission Requirements**

In addition to meeting the requirements of Graduate Education, applicants must have the following:

1. A major or its equivalent in French or Spanish with a minimum GPA of 3.0 (B); applicants in French should also have taken a course in French phonetics;
2. For Spanish, the competence equivalent to two years of study at the college level in a second foreign language; applicants in French who plan to go on to a doctoral program are strongly encouraged to develop reading competence in an additional language;
3. For French and Spanish, an acceptable accent and fluency.

Applicants with minor deficiencies may be accepted provisionally, but course work taken to make up deficiencies may not be counted toward satisfaction of the degree requirements. Applicants accepted provisionally are expected to complete any deficiencies by the end of the first year of study.

**Additional Requirements**

All students are required to satisfy the remaining specific requirements and to pass the comprehensive examinations in their area of concentration.

Students who select Plan A (thesis) in their area of concentration must present a thesis proposal, including justification of the topic and a bibliography, for approval by the thesis director and two members of the thesis committee before the end of the second semester of work. The completed thesis must be presented to the thesis committee at least four weeks before the Graduate Education deadline. The Graduate Education requires all theses to be written in English.

**French Requirements**

Candidates in French may select Plan A (thesis) or Plan B (non-thesis). Candidates in both plans are required to take 30 credit hours. A minimum of 18 credits must be earned in courses numbered 600 and above, including 15 credits in French and at least one graduate seminar. All candidates must take either FR 409 or FR 661. Up to 6 credit hours of LLEA 600-level courses may also be included, in which candidates in French are expected, whenever possible, to read French language texts in the original. Candidates selecting Plan A (thesis) must complete 6 credit hours of LLEA 700 (Thesis Research). All candidates must pass a final comprehensive examination, covering the major periods and genres of French literature and including the history of the language.

**Spanish Requirements**

Candidates in Spanish may select Plan A (thesis) or Plan B (non-thesis). Candidates in both plans are required to take...
Library and Information Science

College of Natural Sciences
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Web: www.hawaii.edu/lis/

Faculty
*A. Wertheimer, PhD (Chair)—history of libraries, print culture and professional education
*N. Asato, PhD—Japanese librarianship, research methods
D. Bair-Mundy, PhD—information systems
*R. Gazan, PhD—social aspects of information technology
*P. Jacsó, PhD—online technology, computer system analysis, databases
*R. Knuth, PhD—history of libraries, international librarianship
*R-A. Montague, PhD—school librarianship and community informatics
*D. Nahl, PhD—information services, human-system interaction
*L. Quiroga, PhD—information retrieval, databases, library systems

Adjunct Faculty
L. Bell, CASIT, MLS—lecturer, San Jose State University
J. Campbell-Meier, PhD—assistant professor, University of Alabama
M. Chopey, MLS—cataloging, Hamilton Library
S. Dawes, MLIS—librarian, Hamilton Library
D. Dunn, MLIS—preservation educational specialist, Conservation, Hamilton Library
N. Fujii-Babb, MLS—librarian, Salt Lake/Moanalua Public Library, retired
G. Geary, MLS—Interim University Librarian, Hamilton Library
J. Hori, MLS—curator, Hawaiian Collection, Hamilton Library
J. Kamiya, MLISc—young adult librarian, Mānoa Public Library
C. Kellett, MLIS—systems librarian, Library Information Technology, Hamilton Library
E. Kleiber, MLIS, MAS—librarian, Hamilton Library
M. Kowalsky, EdD—librarian, Rowan University
D. Minatodani, MLIS—librarian, Hawaiian Collection, Hamilton Library
S. N. Nalau, MLIS—librarian, Kamehameha Elementary Division
A. Olden, PhD—senior lecturer, University of West London
R. Pagell, MBA, MS(LIS), MAT—former University Librarian, Singapore Management University
R. Paseng, MA, MLIS—Southeast Asia specialist, Hamilton Library
J. Quiante, MLISc—Head Archivist, ‘Ulu ‘Ulu, Henry Ku’uloha Giugni Moving Image Archive of Hawai’i
B. Richardson, PhD—Dean of Academic Affairs, Windward Community College
L. Roy, PhD, MLS—Professor, University of Texas
G. Sinclair, MLIS—librarian, Government Documents, Hamilton Library
D. Skeem, MSc, CA—archivist, Hamilton Library
M. Trafford, MLS—Medical Library, Tripler Army Medical Center

The Academic Program

Founded in 1965, the Library and Information Science (LIS) Program prepares professionals for work in libraries, archives, and other types of information-handling agencies. It currently offers a master’s in library and information science (MLISc) and a Certificate in Advanced Library and Information Science and participates in an interdisciplinary doctoral program in Communication and Information Sciences. The LIS program is aware of the opportunities and the responsibilities inherent in its Pacific setting and the unique cultural amalgam of Hawai’i. Its major goals are:

1. To furnish students with the knowledge, skills, and attitudes that are basic to professional competence and career-long professional growth in the field of library and information services;
2. To expand the knowledge base of the profession through research; and
3. To share its resources by extending services to the UH and its academic units and to the people of Hawai’i and beyond.

Graduate Study

Master’s Degree

The MLISc degree program was first accredited by the American Library Association in 1967 and was reaccredited in 1964, 1980, 1990, 1996, 2000, and 2009. The curriculum is subject to continuous review and modification, and every effort is made in academic advising to ensure that students plan programs of study suited to their individual goals. Entering students are expected to be computer literate. Graduate standing is the normal prerequisite for all courses.

Degree Requirements

Students are required to take the following courses:

- LIS 601 Introduction to Reference & Information Services
- LIS 605 Metadata Creation for Information Organization
- LIS 610 Foundations of the Information Professions
- LIS 615 Collection Management
- LIS 663 Database Searching

In addition, they must take one of the following:

- LIS 650 Management of Libraries & Information Centers
- LIS 684 Administration of School Library Media Centers

In addition, the student’s LIS faculty advisor must approve one course selected to meet the ICT requirement.
Plan A (Thesis)

The normal requirement for the MLISc degree under the thesis option is a minimum of 39 credit hours of approved graduate study. At least 27 credits must be taken in LIS courses or a combination of LIS and approved information and computer sciences courses. The student must also take 6 credit hours in LIS 700 Thesis Research and 3 credit hours in a research methods course.

To advance to candidacy and become eligible to enroll in LIS 700 Thesis Research, students must complete at least 15 credits of course work, and defend a thesis proposal in a private meeting with their thesis committee. While it is strongly suggested that all committee members physically attend the thesis proposal defense meeting, remote participation is permitted. Upon approval of the committee, students advance to candidacy, conduct their research, and present their results at a public defense.

Plan B (Non-thesis)

The normal requirement for the MLISc degree under the non-thesis option is a minimum of 39 credit hours of approved graduate study. At least 30 credits must be taken in LIS courses or in a combination of LIS and approved ICS courses. Up to 9 credits may be taken in other schools or colleges when the courses are relevant to the individual student’s specialization and approved by the LIS program chair and Graduate Education.

The maximum course load is 15 credit hours per term. Therefore, 39 credit hours would require at least two terms and a summer. A full load is a minimum of 8 credit hours per term. The program may be undertaken on a part-time basis but must be completed within five years (a two-year extension is allowed by Graduate Education for a total of seven years).

Students who were in MLISc-degree programs from other ALA-accredited library programs may, in special circumstances, transfer up to 21 credit hours toward their MLISc degree at UH Mānoa, provided the work to be credited has been completed within the time limit previously cited. Such requests must be included in the application.

Comprehensive Examination

All Plan B students are required to take an oral comprehensive examination as a requirement for the MLISc degree. The examination is taken during the semester the student expects to graduate.

Distance Education

The MLISc program uses different formats for course delivery. It offers a few courses each year online. Students at remote sites may also request the use of Adobe Connect (Halawai) to participate synchronously in courses being taught at UH Mānoa. In addition, several courses are offered asynchronously throughout the year.

Dual Master’s Degree Programs

Students may pursue the MLISc degree and a second master’s concurrently, cooperating with the following departments and fields of study: information and computer sciences (MS), history (MA), Pacific Islands studies (MA), American studies (MA), Asian studies (MA), educational technology (MEd), Hawaiian Language (MA), Hawaiian Studies (MA), and Law (JD). For more information on these programs, contact the LIS program chair or the other respective departments.

Doctoral Degree

Interdisciplinary Doctoral Degree Program

LIS participates in an interdisciplinary PhD program in Communication and Information Sciences (CIS) integrating computer science, communication, library science, and management information systems. Because of the broad knowledge base required to support the interdisciplinary approach, the program also draws on political science, economics, engineering, operations research, and behavioral sciences. This unique program is sponsored by four academic faculties: communication, information technology management, information and computer sciences, and library and information science.

For information on admission and requirements, refer to the “Communication and Information Sciences” in the Interdisciplinary Programs section.

School Library Media Specialist Licensure

The LIS program recommends graduates to the Hawai‘i Department of Education for certification as school library media specialists. To be eligible, graduates must meet the MLISc degree program requirements and the course requirements approved for certification by the Hawai‘i Department of Education. The National Council for Accreditation of Teacher Education (NCATE) is used in conducting periodic reviews of the program.

A student who enters the LIS program to earn this certification must also complete a state-approved teacher education program. For more specific and current information on prerequisites and required as well as recommended LIS courses, contact the LIS program chair.

Certificate Program

The Certificate in Advanced Library and Information Science (CALIS) offers two options. Option A is available for those who complete a successful, coherent program of specialized study and research beyond the MLISc degree. The program allows for specialization in 1) applying computer and information technologies to information environments; and 2) extending information management skills in information system design, evaluation, and the development of user services.

Option B focuses on school librarianship. It allows for specialization in 1) applying computer and information science technologies in elementary and secondary school libraries, and 2) extending curriculum planning skills in information literacy and general literacy instruction.

For both options, students must complete a research paper that meets the approval of the CALIS committee and give an oral presentation of their research to students and faculty. Students are expected to remain enrolled each semester until the requirements are completed. If it is necessary to withdraw temporarily, students must reapply for admission within application deadlines before returning. Credits more than five years old cannot be applied to the certificate requirements; thus, the program must be completed in five years. For more specific information on prerequisite and elective courses, contact the LIS program chair.
Linguistics
College of Languages, Linguistics and Literature
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Fax: (808) 956-9165
Email: linguist@hawaii.edu
Web: www.ling.hawaii.edu

Faculty
*P. J. Donegan, PhD (Chair)—phonology and phonetics; vowel systems; acquisition; variation and change; typology; Austronesian languages
*K. Deen, PhD (Graduate Chair)—language acquisition (emphasis on experimental approaches); experimental morphosyntax; acquisition of understudied languages, particularly Bantu languages and languages of South East Asia; bilingualism; second language acquisition
*V. B. Anderson, PhD—phonetics; prosody; experimental linguistics; phonetic and phonological universals; endangered and underdocumented languages; animal communication; speech technology
*A. L. Berez, PhD—language documentation; language archiving; Arahbascan languages; Papuan languages; geography and languages; discourse; intonation; functional approaches to grammar
*R. A. Blust, PhD—historical linguistics; Austronesian linguistics and culture history; field methods; lexicography; endangered and underdocumented languages
*L. R. Campbell, PhD—language documentation, historical linguistics, endangered languages and language revitalization, typology, field methods, American Indian languages
*K. K. Drager, PhD—sociolinguistics; phonetics; experimental linguistics; language variation and change; language and identity
*W. D. O’Grady, PhD—syntactic theory and description; experimental syntax; language acquisition; Korean and Jejueo; heritage languages; language revitalization
*Y. Otsuka, DPhil—syntax; Minimalist Program; Tongan and other Polynesian languages; Austronesian languages; endangered and underdocumented languages of Polynesia; language planning in Polynesia
*A. J. Schafer, PhD—psycholinguistics; experimental linguistics; sentence comprehension and production (including Korean, Japanese, Austronesian languages, underdocumented languages, and in language learners/bilinguals); sentence prosody; information structure; psycholinguistic approaches to language documentation and conservation
J. Tertell, MA—language documentation; case and voice systems; tones; typology; sociolinguistics; language planning and policy; economics; North Korea; Southeast Asia

Emeritus Faculty In Residence
B. W. Bender, PhD—general linguistics, morphology, Micronesian linguistics
D. Bickerton, PhD—language variation, pidgins and creoles, language and literature
M. L. Forman, PhD—general linguistics, ethnographic linguistics, Philippine studies
G. W. Grace, PhD—historical linguistics, Austronesian
A. V. Lyovin, PhD—typology, Sino-Tibetan, historical linguistics
A. M. Peters, PhD—language acquisition; prosody, emergence of grammatical morphemes, crosslinguistic issues
A. J. Schütz, PhD—descriptive linguistics, field methods, lexicography, Fijian and other Melanesian languages; history of linguistics in the Pacific
D. L. Stampe, PhD—computational linguistics, phonology and prosody, holistic typology and drift, Munda languages

Cooperating Graduate Faculty
*R. Bley-Vroman, PhD—applied linguistics; syntax; second language acquisition theory; computational linguistics; natural language processing; corpus linguistics, and machine translation
J. D. Brown, PhD—language learning and teaching, language testing
*H. M. Cook, PhD—Japanese linguistics, sociolinguistics, discourse analysis and pragmatics
E. Drechsel, PhD—ethnolinguistics; American Indian languages
S. Fukuda, PhD—syntax, lexical semantics: their interface phenomena in Japanese; understudied Asian languages (Vietnamese, Burmese)
C. Higgins, PhD—macro- and micro-sociolinguistics, qualitative research methods, conversational analysis, code-switching
Y. Hoonchamlong, PhD—Thai linguistics (syntax, discourse, semantics), Tai/Thai dialectology, language learning and teaching, internet technology in language research and language instruction, translation
G. Kasper, PhD—second language curriculum, discourse analysis, interlanguage, pragmatics
C. Sak-Humphry, PhD—Khmer language, linguistics and literature
*B. Schwartz, PhD—linguistics theory and second-language acquisition and analysis, Universal Grammar, child second-language acquisition
N. Silva, PhD—Hawaiian politics, indigenous politics
*H. M. Sohn, PhD—Korean linguistics; grammaticalization
S. Warner, PhD—Hawaiian language, Hawaiian language immersion education, curriculum development and second language acquisition, educational psychology

Degrees Offered: BA in interdisciplinary studies (linguistics), MA in linguistics, PhD in linguistics

The Academic Program
Linguistics (LING), also called linguistic science or the science of language, is the study of how language works—how it is acquired, how it is used, how it is represented in the brain, how it changes over time, and so on. Major subfields are phonetics, phonology, morphology, syntax, semantics, discourse analysis, pragmatics, historical linguistics, sociolinguistics, psycholinguistics (including developmental psycholinguistics), neurolinguistics, mathematical and computational linguistics, and ethnographic linguistics.

Linguistics is relevant to many endeavors, including cognitive science, language planning, language teaching, speech synthesis and recognition, treatment of language disorders, repair of communication breakdowns, and information technology. Our program presents unique opportunities for the study of Austronesian (Malayo-Polynesian) and Asian languages. It also has special strengths in language acquisition, psycholinguistics, sociolinguistics, and language documentation and conservation.

Our program is recognized as being among the top twenty-five in the U.S.

Advising
All faculty in the department participate in the advising of students majoring in linguistics. Undergraduates majoring in linguistics under the Interdisciplinary Studies program are

* Graduate Faculty
advised initially by the undergraduate advisor. Graduate majors are advised by the chair of the graduate field of study or by one of the language documentation faculty. Students are later assigned to specific faculty members for advising according to their special interests.

Undergraduate Study

Bachelor’s Degree

Students may obtain a BA degree with a linguistics major at UH Mānoa through the Interdisciplinary Studies program. See manoa.hawaii.edu/undergrad/is/. In this program, with the guidance of a faculty advisor, students create for themselves a major that may combine the study of linguistics with related disciplines, such as anthropology, second language studies, or psychology, or with the study of one or more foreign languages. Students majoring in linguistics in this way may include some or all of the MA core of courses in their BA program, and are thus able to do more advanced work, should they continue with an MA.

Graduate Study

The faculty represents a variety of theoretical viewpoints. The various faculty members are especially well qualified to direct research on languages of the Pacific and parts of Asia. Fields of special competence include descriptive and comparative linguistics, general linguistic theory, language contact and variation, ethnolinguistics, language development, experimental phonetics, psycholinguistics, sociolinguistics, and cognitive linguistics.

Students admitted to graduate programs in linguistics normally have a background in at least one foreign language. Some background in mathematics or one of the sciences may also be useful. Students entering without a course equivalent to LING 320 are required to take this course to make up for this deficiency in their preparation for graduate work.

The GRE General Test is required of all applicants. Both the Graduate Record Examination (GRE) and the Graduate Record Examination in Subject Test: Linguistics are recommended. Students entering without a course equivalent to LING 320 are required to take this course to make up for this deficiency in their preparation for graduate work.

Requirements

The department offers MA Plan A and Plan B programs. In addition to the university-wide residence requirements of a minimum of two semesters of full-time work, the programs require that students demonstrate competence in one language other than their native language.

Plan A requires a thesis (9 credit hours) and a minimum of 12 credit hours of course work. A final oral examination covering the thesis and related areas is also required.

Plan B requires a minimum of 30 credit hours plus a final project near the end of course work.

The required 30 hours of course work must be taken for a letter grade (not CR/NCR or Audit), of which 18 hours must be at the 600-level or above, including 3 hours of a 700-level seminar. Students may choose between three “streams”: Linguistic Analysis, Experimental Linguistics, and Language Documentation and Conservation. For all streams there is a core list from which different numbers of courses are to be selected. For details, see our MA manual, via ling.hawaii.edu/wp-content/uploads/MA-Manual-FINAL-September-2014.pdf.

Doctoral Degree

Requirements

All students in the PhD program are required to complete a minimum of 33 credit hours of course and seminar work at UH Mānoa (exclusive of LING 800) beyond those counted toward the MA degree. Courses in Phonology (LING 621), grammar (LING 622), and a Methods course are required of all PhD students. Methods courses include LING 630 Field Methods; LING 632 Laboratory Research; LING 750Q Phonology and Phonetics; LING 750Q Language Acquisition; and LING 750Q Psycholinguistics. Students interested in experimental research are strongly advised to take one or more courses in statistical analysis as well (e.g., EDEP 429, SLS 490 or SLS 671.)

All PhD candidates must demonstrate competence in one language other than their native language. Students may demonstrate their language knowledge either by taking a reading/translation test involving a linguistics-related passage or by having satisfactorily taken courses in the language through the 202 level. Foreign students may use English if it is not their native tongue; certification by the English Language Institute that they are exempt from ELI courses suffices to establish their competence in English.

PhD students must present two professionally written papers, pass a comprehensive examination, and pass a final oral examination in defense of the dissertation.


Marine Biology

See the “Interdisciplinary Programs” section of the Catalog for more information.
Mathematics
College of Natural Sciences
Keller 401-A
2565 McCarthy Mall
Honolulu, HI 96822
Tel: (808) 956-4680
Fax: (808) 956-9139
Web: www.math.hawaii.edu

Faculty
*E. Guentner, PhD (Chair)—geometrical functional analysis
*C. Allday, PhD—algebraic topology, transformation groups
*M. Chyba, PhD—control theory
*K. Douvermann, PhD—algebraic topology
*R. Freese, PhD—lattice theory, general algebra
*P. Guerzhoy, PhD—number theory
A. Hadari, PhD—geometric group theory
*T. Hangelbroek, PhD—approximation theory
R. Harron, PhD—algebraic number theory
*H. Hilden, PhD—geometric topology
*M. Jovovic, PhD—operator theory, function theory
*B. Kjos-Hanssen, PhD—computability, logic, probability
*M. Manes, PhD—number theory
*Y. Mileyko, PhD—applied topology, mathematical biology
*D. Myers, PhD—mathematical logic
*S. Post, PhD—mathematical physics, integrable systems
*L. Thomas Ramsey, PhD—harmonic analysis
*D. Ross, PhD—logic, probability
*W. Smith, PhD—analysis, function theory
*D. Takagi, PhD—applied math, fluid dynamics
*G. Wilkens, PhD—differential geometry, control theory
*R. Willett, PhD—noncommutative and coarse geometry
*L. Wilson, PhD—singularity theory

Degrees Offered: Undergraduate Certificate in Mathematical Biology, BA (including minor) in mathematics, BS in mathematics, MA in mathematics, PhD in mathematics

The Academic Program
The mathematics (MATH) program offers preparation in the full spectrum of mathematical sciences, including algebra, geometry, differential equations, real and complex analysis, topology, logic, number theory, and probability and statistics, as well as various topics in applied mathematics. Mathematics majors begin with the study of calculus and linear algebra. After completion of these fundamental courses, students may choose to specialize. The department advises each prospective major on requirements and course options to meet his or her needs and interests. Departmental advisors are also available every day to all students.

Depending upon individual interest, students of mathematics may pursue careers in a variety of fields such as teaching, computer science, operations research, statistics, business, and economics. In addition, students who continue on to the graduate program may choose to become professors and/or research mathematicians. The faculty has the competence and resources required to provide the basic mathematical preparation required for any of these professions.

A goal of all non-survey mathematics courses is the development of precision of thought and expression. This receives special emphasis in the many writing-intensive courses the department offers.

Undergraduate Study

BA Degree
Requirements
Students must complete 21 credit hours in mathematics courses numbered above 300, including:
- MATH 321
- MATH 331
- MATH 480
- 3 credit hours in a writing-intensive mathematics course
- 6 credit hours in courses numbered above 400
- Only courses in which a student earns a grade of C (not C-) or better will be counted toward fulfillment of major requirements
- A cumulative 2.0 GPA in all completed upper division mathematics courses is required
- All mathematics majors are required to see a mathematics advisor each spring semester prior to fall registration

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

BS Degree
Requirements
Students must complete 24 credit hours in mathematics courses numbered above 300 and 15 credit hours in additional upper division mathematics courses or appropriate non-introductory courses in related fields including:
- MATH 321
- MATH 331
- MATH 480
- 6 credit hours in writing-intensive mathematics courses
- 6 credit hours in courses numbered above 400
- Only courses in which a student earns a grade of C (not C-) or better will be counted toward fulfillment of major requirements
- A cumulative 2.0 GPA in all completed upper division mathematics courses is required
- All mathematics majors are required to see a mathematics advisor each spring semester prior to fall registration

Students must demonstrate an understanding of algorithms and logic, as well as precision of thinking.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Minor
Requirements
Students must complete MATH 243 or 253A plus 12 credit hours in mathematics courses numbered above 300, including:
- 3 credit hours in a writing-intensive mathematics course
- 6 credit hours in courses numbered above 400

Undergraduate Certificate in Mathematical Biology
The purpose of the certificate is to induce students to pursue the interdisciplinary study of biology and mathematics together with research. The course work will be similar to, but less than,

* Graduate Faculty
that required to receive a minor in mathematics or biology. However, the students will also have to do a substantial amount of research in addition to the course work. The emphasis in the certificate is different, however, in that the majority of the work is interdisciplinary.

Students will be considered accepted into the Mathematical Biology Certificate Program upon formal request for acceptance and completion of either MATH 304 or 305 with a grade of C or better. To receive the certificate, students must complete 15 credits of approved course work with no grade below a C and attain a GPA of 2.5 in the collection of courses used to satisfy the certificate requirements. Due to the interdisciplinary nature of the certificate, 6 credits of required electives will differ depending on a student’s major. Courses used towards the certificate can only be double-dipped with focus requirements.

Prerequisites to the Certificate
- BIOL 171 (lab not required)
- CHEM 161 or 171 (lab not required)
- year of calculus (MATH 215/216, MATH 241/242, MATH 251A/252A)
- electives may have additional prerequisites

Requirements for the Certificate (15 credits)
- required courses (9 credits): MATH 304, 305, MATH/BIOL 490 (capstone)
- math majors (6 credits): BIOL 172, and 265 or 275 (lab not required)
- life science majors (6 credits): two courses selected from MATH 243/253A, 301, 302, 303, 307, 311, 371, 373, 402, 403, 407, 414, 416, 471, 472
- other majors: completion of above required courses, and at least 6 credits of electives approved by the Committee

Participation in an interdisciplinary Mathematical Biology research project is required. These projects must be substantial, requiring at least the effort of a 5 credit 400-level course; examples include a senior honors research project, summer Research Experiences for Undergraduate programs, and the Undergraduate Biology and Mathematics Research Program; students are advised to discuss their projects with an advisor from the Mathematical Biology Certificate Coordinating Committee before commencing. A research paper based on this research project must be submitted to and approved by the committee. Students are expected to present their research to an approved symposium or conference.

Graduate Study

Prospective graduate students are expected to have adequate undergraduate preparation in linear algebra, advanced calculus, and abstract algebra. Applicants must submit to the department their scores for the GRE General Test; applicants for the graduate assistant positions are strongly encouraged to submit scores for the subject test in mathematics as well. The department requires a score of at least 650 on the quantitative section of the GRE General Test for admittance as a regular student. The department requires a general examination of all incoming graduate students for course placement purposes. This diagnostic examination consists of two parts, algebra and analysis, and is designed to evaluate the student’s command of undergraduate mathematics in the areas of linear algebra, advanced calculus, and abstract algebra.

Master’s Degree

Requirements
Most MA students will select Plan B, which requires 30 credit hours of course work, including 611, 612, 631, and 644. Masters candidates must form a two member committee. The student is required to write and defend a paper on a research topic approved by the student’s master’s committee and the graduate chair. The defense will consist of a one hour public presentation on the chosen topic, followed by an oral exam. The department does not have a thesis option (Plan A), and only an exceptional student may be admitted to Plan C at the discretion of the graduate chair.

Doctoral Degree

Requirements
For the PhD degree, the department requires that the student show proficiency in one of the following languages: French, German, or Russian. Teaching experience is required of all PhD students. To be admitted to PhD candidacy, the student must satisfy the language requirements and pass three written examinations: (a) linear algebra and abstract algebra; (b) real analysis and the basic facts of complex analysis and general topology; and (c) a third field chosen by the student with the approval of the graduate chair. All new students in the PhD program shall complete a minimum of five mathematics department courses numbered between 600 and 690, other than 611, 612, 631, 632, 644, 649. These five courses may be taken under the CR/NC option. Exceptions: Up to two 3-credit 649 (alpha) seminars (meeting three hours/week) may be substituted for (up to) two of these required five courses, with the written approval of the graduate chair. Also, with the written approval of the graduate chair, credit may be given for equivalent courses taken in another mathematics department or for graduate-level courses taken in another department that are recommended by the student’s thesis advisor and directly related to the dissertation topic; such credit for graduate courses taken in another department is limited to a total of no more than two courses. The most important requirement for a PhD degree is the successful defense of a doctoral dissertation involving original mathematical research.
Microbiology
College of Natural Sciences
Snyder 207
2538 McCarthy Mall
Honolulu, HI 96822
Tel: (808) 956-8553
Fax: (808) 956-5339
Web: www.hawaii.edu/microbiology/

Faculty
*S. P. Donachie, PhD (Chair)—marine microbiology, coral microbiology, microbial diversity, and taxonomy
*S. M. Callahan, PhD—genetics, cellular differentiation, and coral microbiology
*J. T. Douglas, PhD—medical microbiology and infectious diseases
*T. T. Hoang, PhD—bacterial genetics, physiology, and molecular pathogenesis
*S. Prisic, PhD—molecular pathogenesis of *Mycobacterium tuberculosis*, alternative ribosomal proteins, protein phosphorylation
B. J. Smagghe—cancer therapeutics, stem cell reagents, protein engineering

Cooperating Graduate Faculty
M. Bankowski
S. N. Bennett
D. Borthakur
S. P. Chang
Y. Lu
F. D. Miller
V. R. Nerurkar
M. S. Rappe
S. E. Seifried
B. A. Yoza

Affiliate Graduate Faculty
H. Turner
C. Whelen

Degrees Offered: BA (including minor) in microbiology, BS in microbiology, BS in molecular cell biology, MS in microbiology, PhD in microbiology

The Academic Program
Microbiology (MICR) deals with microscopic forms of life and their activities. Bacteria, algae, fungi, protozoa, and viruses are included in this discipline. The field is diverse and concerns the nature of microorganisms, as well as their interactions—both advantageous and adverse—with other organisms and with the environment. Entire academic disciplines and commercial enterprises are based on what microorganisms do. For example, the very forms that may cause infectious diseases and epidemics may also support industries that produce vaccines or antimicrobial agents. Microorganisms play an essential role in the cycling of the limited supply of nutrients available on Earth’s surface by decomposing plant and animal remains, and by being primary producers of food in the oceans. Many microorganisms or their products may be eaten, drunk, or disposed of as undesirable. They may be used to clean up the environment or controlled only with great effort to prevent corrosive, obnoxious, or destructive activities that they may bring about. Microbiology also deals with the physiology, biochemistry, genetics, and molecular biology of microorganisms. Many of the advances in DNA technology are mediated through bacteria, yeasts, and viruses; much of what we know about metabolism in general comes from their study.

Advising
Majors should visit manoa.hawaii.edu/biology/advising or contact bioadvis@hawaii.edu to meet with an advisor.

Undergraduate Study
Students must earn a grade of C (not C-) or higher in each course applied to the major, including required courses in CHEM, BIOL, PHYS, and MATH.

BA in Microbiology
Requirements
Students must complete the following:
- 18 credit hours in microbiology, including required courses:
  - MICR 351/351L
  - Three courses from MICR 361, 401, 431, 461, 463, 470, 475, 485, and 490, plus 4 credits of associated laboratories
- The following required related courses:
  - BIOL 171, 172, 275 plus labs
  - CHEM 161/161L and 162/162L; or 181A/181L
  - CHEM 272/272L and 273
  - MATH 215 or 241
  - PHYS 151/151L or 170/170L, and 152/152L or 272/272L
- 9 credits of approved major electives

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

BS in Microbiology
Requirements
Students must complete the following:
- 23 credit hours in microbiology, including required courses:
  - MICR 351/351L, 431, 461, 475; and one course from MICR 361, 401, 463, 470, 485, or 490, plus 6 credits of 400-level MICR lab courses
- The following required related courses:
  - BIOL 171, 172, 275 plus labs
  - CHEM 161/161L and 162/162L or 181A/181L
  - CHEM 272/272L and 273
  - MATH 215 and 216 or 241 and 242
  - PHYS 151/151L or 170/170L, and 152/152L or 272/272L
- 6 credit hours of approved major electives

BS in Molecular Cell Biology
The BS degree in Molecular Cell Biology (MCB) is designed to prepare students for careers in fields that require advanced knowledge of molecular biology, in particular those that relate to human health and welfare. Examples of such fields include, but are not limited to, medicine, pharmacology, pathology, genetic testing and counseling, biotechnology, nanotechnology, teaching, and basic research.

* Graduate Faculty
Requirements

Students must complete the following:

- 23 credits hours including required courses:
  - BIOL 375/375L, 407, 408/408L
  - MBBE 402 or BIOC 441
  - MCB 314, 461, 472
- The following required related courses:
  - BIOL 171/171L, 172/172L, 275/275L
  - CHEM 161/161L and 162/162L or 181A/181L
  - CHEM 272/272L and 273
  - PHYS 151/151L and 152/152L, or 170/170L and 272/272L
  - MATH 215 and 216 or 241 and 242
- 10 credits of approved major electives, a minimum of 1 credit of an approved elective laboratory

Major electives should be chosen with the assistance and approval of an advisor in Edmondson Hall 216, and in the department, to provide a well integrated and coherent program. Prospective majors should consult the microbiology/molecular cell biology advisors promptly, so as to design a curriculum that satisfies the major requirements.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Minor in Microbiology

Requirements

Students must complete 15 credits of 300- and 400-level MICR courses, of which five credits must be MICR 351/351L.

All prerequisites for these courses must be met. Persons wishing to complete the minor and graduate in four years should have completed CHEM 272, if possible, before the middle of the junior year.

Graduate Study

The department offers programs leading to the MS and PhD in microbiology with areas of specialization in microbial ecology, biochemistry, physiology, genetics, and ultrastructure; metabolic regulation and the regulation of gene expression; marine microbiology; medical microbiology; animal and environmental virology and viral pathobiology; and immunology, immunogenetics, and immunochemistry. In addition, an option is offered in cell biology that leads to the MS and PhD in microbiology. Research programs in interdisciplinary fields are possible. Graduate students in microbiology may join two interdisciplinary graduate specializations: the Ecology, Evolution, and Conservation Biology (EECB) Program, and the Marine Biology (MB) Program.

Applicants for advanced degree programs in the department must supplement the forms and transcripts required by the Graduate Education with three letters of recommendation and the official scores from the GRE General Test. These supplementary items should be sent directly to the department.

Complete details on the graduate program in microbiology and the availability of financial aid to prospective students are outlined in a departmental brochure available on request from the department, Snyder 207, 2538 McCarthy Mall.

Courses for the graduate programs are to be selected from the list below and from other graduate offerings in related disciplines as directed by the student’s advisor or advising committee. The following courses may be repeated: MICR 625, 632, 652, 671, 680, 681, 690, 699, 700, 795, and 800. However, repeated courses other than MICR 699, 700, 795, and 800 may only be used for credit once per degree. MICR 690 is a required course. Course deficiencies shall be made up before admission to candidacy.

Both the MS and the PhD are research degrees requiring a research project, a thesis or dissertation, and an oral defense. Prospective graduate students are encouraged to contact faculty or cooperating graduate faculty to determine whether there might be a laboratory that is conducting research of interest and to determine which laboratories are taking new students (see the department website at www.hawaii.edu/microbiology to find areas of research and faculty contact information).

Master’s Degree

Intended candidates for the MS degree should present a minimum undergraduate preparation in biological and physical sciences including biology, genetics, microbiology, organic chemistry, physics, and calculus. Deficiencies in some of these areas do not preclude admission. Qualified students with undergraduate majors in fields other than microbiology are welcome.

Requirements

Plan A Minimum Requirements - 30 credit hours

- 2 units of directed research (MICR 699);
- 1 credit of seminar (MICR 690);
- 6 credit hours of thesis (MICR 700);
- additional 12 credit hours of course work at the 600 level or higher; plus
- 9 credit hours at the 400 level or higher

Note: 3 credit maximum of MICR 695 may be applied towards the MS Plan A degree.

Doctoral Degree

The doctoral degree (PhD) is offered in microbiology in the various areas of interest represented by research programs of the department’s graduate faculty.

Course work requirements for a PhD are the same as those for the MS degree (with MICR 800 replacing MICR 700). However, consideration will be given to those who already possess an MS in Microbiology or closely related field.

Requirements

The PhD candidate must demonstrate the ability to do original experimental research and to produce an acceptable dissertation. A comprehensive examination, written and oral, is required, and the dissertation must be successfully defended before the faculty. Experience in teaching in a laboratory course is considered a desirable part of the training of the PhD candidate. The specific requirements for each of the joint degree programs are modified somewhat from those given above.
Music

College of Arts and Humanities
Music 3
2411 Dole Street
Honolulu, HI 96822
Tel: (808) 956-7756
Fax: (808) 956-9657
Email: uhmmusic@hawaii.edu
Web: manoa.hawaii.edu/music/

Faculty
*L. Paxton, MM (Chair)—voice performance
*T. Bingham, MA—music education
D. Blon, MM—music education
*J. Boeckman, DMA—music education
*M. Felipe, DMA—choral music
*M. Hoover, DMA—voice performance
*T. Itoh, DMA—composition/theory
*J. Korth, DMA—piano performance
*F. Lau, DMA—ethnomusicology
*B. W. Lee, PhD—ethnomusicology
*I. B. Lin, DM—strings performance
*C. Loong, PhD—music education
*B. P. McLain, PhD—music education
*K. McQuiston, PhD—musicology
*J. Moulin, PhD—ethnomusicology
*J. Mount, MM—voice performance
*T. Osborne, DMA—composition/theory
A. Sala, MA—ethnomusicology
*D. Womack, DMA—composition/theory
*L. Wright, PhD—musicology
*T. Yee, DMA—piano performance

Degrees Offered: BA (including minor) in music, BEd in elementary education (music), BEd in secondary education (music), BMus in music, MMus, PhD in music

The Academic Program

The music (MUS) department offers the bachelor of arts in music, bachelor of music, master of arts in music, master of music, and doctor of philosophy in music. In conjunction with the College of Education, the department offers the bachelor of education in elementary education (music) and the bachelor of education in secondary education (music). Information about each of these programs may be found on the Music Department website: manoa.hawaii.edu/music/.

The department is housed in a complex of buildings, including studios, practice and rehearsal facilities, and the Mae Zenke Orvis Auditorium, noted for its fine acoustics. In addition to many offerings in Western classical, vocal, and instrumental music, the department specializes in non-Western music, notably the musics of Asia and the Pacific.

Accreditation

The bachelor’s, master’s, and PhD programs are fully accredited by the National Association of Schools of Music (NASM).

Advising

Students interested in majoring in music, minorning in music, or participating in various ensembles may obtain information at the department office and arrange to see a music advisor. Advising is mandatory for music majors and minors.

New Students

An orientation session for new students is held each semester during the week before classes begin. At that time, incoming students take theory, history, and piano placement tests and receive advising and approval for music courses.

Undergraduate Study

Bachelor degree concentrations include performance, composition, music education, and general music studies.

Specific course requirements are available on the Music Department website: manoa.hawaii.edu/music/. New and transfer students must attend orientation and consult the undergraduate chair when entering UH Mānoa.

Admission Requirements

In addition to the UH System Application form, prospective music majors must submit a Music Department Undergraduate Admission Application, recommendation form, and perform an audition. Forms and instructions are available from the department office and the department website at www.manoa.hawaii.edu/music/apply/ugrad.

BA Degree

Requirements

Major requirements include 40 credit hours in various music courses. Bachelor of Arts majors work with an advisor to emphasize general music, Hawaiian music, or musical theater.

For information on the BA degree, go to manoa.hawaii.edu/music/about-us/degrees-programs/BA/. For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

BMus Degree

Requirements

BMus candidates must complete 80 credit hours in music and major in composition or performance (piano, voice, and selected orchestral instruments).

For information on the BMUS degree, go to manoa.hawaii.edu/music/about-us/degrees-programs/bm/. For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

BEd Degree

Prospective music education majors should see the chair of the music education committee in the Department of Music for information and requirements. This K-12 degree program is offered in conjunction with the College of Education.

For information on the BEd degree, go to manoa.hawaii.edu/music/about-us/degrees-programs/bed/. For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

The major music requirements posted here are effective Fall 2012. Students who declared their major before this date may have different requirements. Students are advised to meet with a major advisor regarding the specific requirements that apply to them.

Minor

Requirements

Students can pursue a minor in music while continuing their chosen major. The minor program requires a minimum of 15 credit hours. For further information, contact the music depart-
Graduate Study

Entrance exams for incoming students consist of the Diagnostic Exam to test for any deficiencies and insure that students remedy them as soon as possible in their degree programs. The General Exam (master’s level)/Qualifying Exam (doctoral level) is completed before candidacy for a degree.

Diagnostic Exam

Prior to enrolling for the first semester of study, each classified graduate student will take a diagnostic examination in music history (part I) and music theory (part II) to determine whether or not the general exams or qualifying exams in those areas (or specified courses in lieu of the general exams) are needed to clear pre-program deficiencies. Students are also tested in their area of concentration (part III). The purpose of this examination is twofold: (a) to assess the student’s background and determine if there are deficiencies that should be remedied, and (b) to assist the advisor and the student in planning a program of study. Detailed information about the examination is available on request. Successful performance on specific parts of the diagnostic examination exempts the student from the equivalent parts I and II of the general examination or qualifying examination. Entering doctoral students who are continuing directly from a master’s degree in UH Mānoa Music are exempt from taking parts I and II of the diagnostic/general exams, since the student has fulfilled this requirement. In Ethnomusicology and Composition, the student will also be exempt from part III. Musicology and Music Education doctoral students must take part III, the qualifying exam, upon entering the doctoral program.

The diagnostic/general/qualifying examination is offered in August (before the beginning of the fall semester), in January (before the beginning of the spring semester) and in the third week of April.

Students who enter in the fall semester will take the diagnostic examination in August. If the student does not pass any portion of the diagnostic examination, he or she may re-take the examination in January and April or take the recommended course(s) between August and May and clear deficiencies in the first academic year of study by earning a grade of B or higher.

Students who enter in the spring semester will take the diagnostic examination in January. If the student does not pass any portion of the diagnostic examination, he or she may re-take the examination in August and the following January or take the recommended course(s) between January and December and clear deficiencies in the first year of study by earning a grade of B or higher.

N.B. Students who enter in the spring semester will be exempt from taking the April examination and will not need to submit a petition for approval to the graduate faculty. Dismissal from the graduate program will occur if the student does not pass any part of the diagnostic examination and then: (1) does not pass any part of the general examination or qualifying examination in two attempts; or (2) does not take the prescribed course(s) to clear deficiencies in their first year of study; or (3) does not earn a B or better in the prescribed course(s).

Students with deficiencies are strongly advised to take the recommended course(s). Students may also wish to study on their own and re-take the examination. Keep in mind that many classes recommended to rectify deficiencies are offered only once per year. The student should consult with his or her advisor to discuss the most suitable course of action.

General or Qualifying Exams

Before being admitted to candidacy for a degree, each graduate student must pass the department’s general examination/qualifying examination, which consists of three parts: music history, music theory, and the student’s area of concentration. All parts of the general examination must be passed before the student earns 18 credit hours toward the degree; course work taken in excess of this limit will not be counted if the credits are earned before all three parts of the general examination are passed.

When a student does not pass any part of the diagnostic/general/qualifying examination, there are two options:

1. Exam Option. The student may repeat the unsuccessful portion of the exam the next time the examination is offered. If a student chooses this option but does not take the next examination, a failure is recorded. Any student who does not pass the diagnostic examination and does not pass the general examination/qualifying examination twice will be dropped from the program.

2. Course Option. The student may take courses to remove the deficiency and must submit the required course option form. Courses to clear pre-program deficiencies or in lieu of general or qualifying examination must be taken for grade during the first two semesters of study and passed with a grade of B (not B-) or better. These courses do not count toward graduate degrees. All deficiencies must be cleared by the end of the first year of study. Students who do not remove their deficiencies by the end of the first year of study will be dropped from the graduate program.

Any exceptions to these procedures must receive prior approval by petition to the graduate faculty. The student petitions the graduate faculty by memo, signed and dated, explaining the reason for the deferral request, no less than five weeks before the exam retest date.

Master’s Degree

The department offers programs leading to the MA in music with concentrations in ethnomusicology, music education, and musicology, and to the MMus with concentrations in composition and performance (voice, piano, and selected instruments). The MA in music education is available either on-campus or online.

Admission Requirements

Applicants for admission to the master’s degree program must have a bachelor’s degree with a major in music or a bachelor’s degree and evidence of musical background equivalent to a music major; three confidential letters of recommendation (not more than two years old) on forms provided by the music department; and, for non-native speakers of English, a TOEFL score of 500 (paper) 61 (iBT) minimum for performance or 540 (paper) 76 (iBT) for other concentrations and 600 (paper) 100 (iBT) with scores of 25 in listening and speaking for teaching assistants. Application forms are available at the music department and its website, or Graduate Education and its website. The completed forms should be submitted with two copies.
of all transcripts by January 15 for the fall semester, and by August 1 for the spring semester. (Those who decide to enroll must submit official copies of all post secondary transcripts.) In the following concentrations, students must meet additional admission requirements:

  a. Composition—Three original scores representative of various forms and media.
  b. Ethnomusicology—A personal statement of 800 words minimum (3 pages) including the purpose of study. Background in cultural anthropology is desirable and, depending on the thesis research, may be required.
  c. Music Education—BEd (music education) or equivalent, minimum of one year of full-time music teaching experience in a public or private school, a 20–30 minute videotape/DVD demonstrating current teaching expertise, and a lesson or rehearsal plan.
  d. Musicology—Sample of academic writing proficiency (a 10-page term paper in English from an upper division music history course is preferred).
  e. Performance—An audition of works representative of various musical styles. An applicant not residing in Hawai‘i must submit an unedited tape recording or CD comparable in scope and length to an in-person audition and, if admitted, will audition before the department admissions faculty before registering for the first semester of residency to ascertain appropriate placement in the curriculum sequence. A recent UH Mānoa graduate may be admitted without a hearing if the BMus senior recital is considered to be of high enough quality by the majority of the department admissions faculty.

  An applicant must declare a specific concentration within the MA or MMus; admission, if granted, is for that concentration only. If a student later wishes to change to another concentration, he or she must petition the graduate faculty in music for approval.

  More detailed information and links to relevant forms for all degree programs are posted on the department’s website: manoa.hawaii.edu/music/.

  Some concentrations require language competence:
  1. Ethnomusicology—A reading or speaking knowledge of a foreign language relevant to the thesis research (or equivalent competence in linguistics).
  2. Musicology—A reading knowledge of French or German.

**Degree Requirements**

  Plan A requires a minimum of 30 credit hours, 22 in course work and 8 of thesis. Candidates concentrating in ethnomusicology and musicology follow this plan. An ethnomusicology thesis is usually based on fieldwork.

  Under Plan A, the student arranges the oral final examination in consultation with the thesis committee, usually during the semester in which all course work has been completed and after the student has completed the thesis document. Copies of the document must be presented to the committee at least two weeks prior to the examination. At the examination, the thesis committee examines the student’s knowledge and understanding of the field of concentration, with emphasis on the content of the thesis.

  Plan B also requires a minimum of 30 credit hours but does not include a thesis. Candidates in performance, music education, and composition follow this plan. Plan B students in performance must fulfill the following requirements:

  1. Give a public, hour-long recital.

  2. Additionally, in the recital semester the student will meet with the recital committee for a one-hour oral examination to discuss historical and analytical aspects of the works performed in the graduate recital.

  Plan B students in music education must fulfill the following requirements:

  1. A comprehensive three-hour examination, exhibiting strength in written expression and a grasp of the essentials of the broad field of music education; and

  2. A project or paper about some specific aspect of music education whose size and scope will be determined by the student and the faculty member directing the project.

  Plan B students in composition must fulfill the following requirements:

  1. Composition students must compose an original work in one of the larger forms, and write an essay on a topic related to their master’s studies.

  2. Candidates concentrating in composition must give a public, 30–45 minute recital of original works composed during their master’s studies at UH Mānoa.

  The master’s student must spend at least two semesters in program residency at UH Mānoa. (Full-time work or the equivalent in credit hours.)

**Doctoral Program**

  The department offers programs leading to the PhD in music with concentrations in composition, ethnomusicology, music education, and musicology.

**Admission Requirements**

  Applicants for admission to the PhD program must present a master’s degree in music (in the area of emphasis or equivalent), an excellent academic record (two copies of all college transcripts), three confidential letters of recommendation (not more than two years old) on forms provided by the music department, and a sample of academic writing proficiency such as recent term papers as specified in certain areas, and, for non-native speakers of English, a TOEFL score of 560 (paper), 83 (iBT) or better, and, for teaching assistants, 600 (paper), 100 (iBT) with scores of 25 in listening and speaking. Application forms are available at the music department and its website, or Graduate Education and its website. The completed forms should be submitted with two copies of all transcripts by January 15 for entrance in the following fall semester and by August 1 for entrance in the following spring semester. (Those who decide to enroll must submit official copies of all post secondary transcripts.)

  In the following concentrations, students must meet additional admission requirements:

  1. Composition—A master’s degree in composition or the equivalent in terms of course work and original composition; a score of one large-scale work; scores of two shorter works; and a recording of at least one of the above.

  2. Ethnomusicology—A master’s degree in ethnomusicology or the equivalent in terms of course work and fieldwork. A major research paper in ethnomusicology as evidence of extensive background in musical traditions other than Western art music.

  3. Musicology—A master’s degree in musicology or a minimum of four graduate seminars in musicology, and a 7,500-word research paper in English on a subject in historical musicology.
4. Music Education—A master’s degree in music education is preferred, but an equivalent background is acceptable. A minimum of two years full-time music teaching in a public or private school; three confidential letters of recommendation on the applicant’s teaching ability, at least two of which must be written by the applicant’s job supervisors (principal or other supervisor); and one of the following: (a) a 20-30 minute videotape or DVD demonstrating current teaching expertise, or (b) an in-person teaching demonstration; and a lesson or rehearsal plan relevant to the teaching demonstration.

An applicant must declare a concentration in one of the four areas previously listed. Admission, if granted, is for that concentration only. If a student later wishes to change to another concentration, he or she must petition the graduate faculty in music for approval. Each student will have a principal advisor who must be a member of the music department’s graduate faculty. An application will be denied if it is determined that no principal advisor in the applicant’s area of interest is available on the music department’s graduate faculty.

**Degree Requirements**

This degree requires an emphasis in ethnomusicology (11 credits of specified course work) for students who are not concentrating in ethnomusicology. This emphasis ensures that all PhD graduates will be able to teach introductory courses in world music. Requirements for music PhD students also include MUS 659 Seminar in College Music Teaching, and/or supervised college teaching experiences.

The PhD student must spend at least three semesters in program residence (full-time work or the equivalent in credit hours) at UH Mānoa and must complete the degree within seven years.

Other Requirements. Before advancing to candidacy, reading proficiency must be satisfactorily demonstrated as follows:
1. Ethnomusicology—One dissertation research language and one library research language.
2. Music Education—Language appropriate to the areas of research or research statistics.
3. Musicology—Two European languages: German and one other language, preferably French.
4. Composition—Language appropriate to areas of research. Presentation of a full (50-60 minute) recital of works composed during the doctoral residency.

**Comprehensive Exam and Advancing to Candidacy.**

This exam measures the student’s readiness to begin significant research in the selected major area of research. It is given only after successful completion of course work, fulfillment of residency requirements, successful completion of all language requirements, and notice from the advisory committee that the student is sufficiently prepared for this examination. This two-part exam consists of a written portion and a two-hour oral portion. A student failing this exam may retake it once, but must do so within one year. Passing this exam enables the student to begin the dissertation process and receive an ABD certificate from UH Mānoa, indicating that all requirements of the doctorate except for the dissertation have been completed. Following the formation of a five-member doctoral committee, the comprehensive exam, and submission and approval of a dissertation proposal by the doctoral committee, the student is advanced to candidacy.

After this occurs, all that remains is fieldwork (for ethnomusicology majors only), research for and writing of the dissertation, and the oral defense of the dissertation.

**Final Oral Examination.** Basically a defense of the dissertation, this exam is conducted by the five-member doctoral committee, consisting of graduate faculty members appointed by the music graduate chair and approved by the Graduate Education dean. The chair of the student’s advisory committee normally serves as the chair of the student’s doctoral committee. At least one member must be from outside the music department, but music department members make up the majority. The committee chair and outside member must be physically present at the exam, which is subject to other regulations described at the Graduate Education website: manoa.hawaii.edu/graduate/content/final-defense.

The student arranges the date of the final oral exam in consultation with the doctoral committee; it usually takes place during the semester the student has completed the dissertation document. Copies of the document must be presented to the committee at least two weeks prior to the examination. At the examinations, the committee scrutinizes and judges the student’s knowledge and understanding of the field of concentration, with emphasis on the content of the dissertation.

**Peace Studies**

College of Social Sciences/Spark M. Matsunaga Institute for Peace and Conflict Resolution
Saunders Hall 523 and 723
2424 Maile Way
Honolulu, HI 96822
Tel: (808) 956-6433
MIPCR Fax: (808) 956-9121
Email: uhip@hawaii.edu
Web: www.peaceinstitute.hawaii.edu

**Faculty**

* C. Petersen, JD (Director, Matsunaga Institute for Peace and Conflict Resolution)—international human rights, equality and non-discrimination, women and the law
* B. Barnes, JD, LLM (Chair, Graduate Certificate in Conflict Resolution)—conflict resolution
* B. Hallett, PhD—peace studies
* M. Soetero-Ng, PhD—teacher education, peace studies

**Cooperating Faculty**

* I. Aoude, PhD—ethnic studies
* J. Barkai, JD—law
* J. Campos, PhD—political science, terrorism studies
* R. Chadwick, PhD—political science
* D. Chandler, PhD—sociology, conflict resolution
* S. Chandler, PhD—public policy/child welfare
* M. Coffman, PhD—environmental economics, planning
* D. Foley, PhD—deliberative dialogs, conflict resolution
* A. Hubbard, PhD—conflict and relational management
* M. Jones, PhD—physics
* K. Lowry, PhD—ADR, coastal management, community planning
* L. Minerbi, PhD—urban and regional planning
* A. Rieser, LLM—geography, law, marine conservation
* R. Robinson, PhD—management
* W. Sharkey, PhD—conflict and relational management

* Graduate Faculty
Degree and Certificates Offered: Certificate in Peace Studies, BA in interdisciplinary studies (peace and conflict studies), Graduate Certificate in Conflict Resolution

The Academic Program

The Matsunaga Institute for Peace and Conflict Resolution is a multi-disciplinary community of scholars, students, and practitioners who through academic programs and outreach promote cross-cultural understanding and collaborative problem-solving. Residing within the Public Policy Center (PPC), the institute emphasizes critical thinking and collaboration to groom future leaders to address contemporary and complex issues in Hawaii, the Asia-Pacific region, and the world.

Peace Studies broadens students’ perspectives and strengthens critical thinking on issues of war and peace, justice and human rights, and governance. Conflict resolution processes such as facilitation, mediation, and negotiation are necessary in organizational, community, and civic relations, and build important interpersonal skills that are vital to good leadership. Students develop a theoretical foundation to advance scholarship in peace studies, including human rights and advocacy, leadership and governance, policy analysis, and communications, while they learn and hone practical conflict management skills to develop as professionals in their chosen field.

Students may enroll in Peace and Conflict Education (PACE) courses, either as an intellectual endeavor or to enhance personal and professional skills. Students who understand the causes of conflict and the methods for resolving conflicts will be better equipped for a wide range of careers in the fields of education, law, human resource management, industrial relations, government, foreign service, security, urban and regional planning, sociology, and social work, to name a few.

For students who wish to obtain an academic qualification in peace and conflict resolution, the institute offers three programs:

1. The Peace and Conflict Resolution major for undergraduates (a flexible inter-disciplinary program offered in cooperation with the Interdisciplinary Studies BA program);
2. The Certificate in Peace Studies (open to undergraduate students and equivalent to a “minor”); and
3. The Graduate Certificate in Conflict Resolution (open to graduate students seeking the certificate only or concurrently with another graduate-level degree program).

Inherently interdisciplinary and international in perspectives; the institute is committed to building on Hawaii’s cultural heritage and island values of aloha, mutual aid and respect, and sense of community. The institute is dedicated to honoring the memory of U.S. Senator Spark M. Matsunaga and implementing his hope that; “every student enrolled in Hawaii’s public university system will be exposed to peace studies.”

Undergraduate Study

Bachelor’s Degree in Peace and Conflict Resolution

In collaboration with the Interdisciplinary Studies program, the Matsunaga Institute for Peace and Conflict Resolution offers a flexible, student designed BA in Peace and Conflict Resolution (36 credit hours).

The core of the program consists of three courses that are meant to give students the basic skills and knowledge of conflict resolution and the opportunity to put these skills into practice. Students are then free to design an academic program that aligns with their interests, needs, and goals. Students work closely with faculty advisors from the Matsunaga Institute and Interdisciplinary Studies to develop a coherent, multidisciplinary course of study. This gives students the flexibility to concentrate on a specific area of interest or to take a broader approach to peace and conflict studies.

Additional information is available at www.peaceinstitute.hawaii.edu and from Interdisciplinary Studies in the Office of Undergraduate Education.

Requirements

- PACE 310 Survey Peace and Conflict Studies (3)
- Either PACE 429 Negotiation (3) or PACE 447 Mediation Skills: UH Basic (3)
- PACE 495 Practicum and Internship (or a faculty approved substitute) (3)

The remaining credit hours, to meet the major’s minimum requirement of 36 credit hours, can be drawn from courses offered by the Matsunaga Institute (designated as PACE courses) as well as courses offered by other departments. Although a list of suggested electives is set forth below, students may also propose other courses, provided that they can achieve a coherent program of study that meets the requirements of the Interdisciplinary Studies program. An overall GPA of 2.5, with no grade below a C, is required in the major course work.

Certificate in Peace Studies

The Certificate in Peace Studies (15 credit hours) is equivalent to a minor. The certificate exposes students to the fundamentals of peace and conflict resolution while they learn methods to remedy social injustice and manage and resolve conflict. These skills are highly valued by employers in a wide range of professional fields, making the certificate a valuable complement to many popular majors. Students enrolled in a degree-granting program may obtain the Certificate in Peace Studies. Some students may wish to focus primarily on peace studies as a personal, intellectual endeavor. Others may seek a career in an area relevant to peace studies and will use the certificate to enhance their credentials and expertise.

To receive a Certificate in Peace Studies, students are required to take PACE 310, 429 or 447, and 495 (or a faculty approved substitute) and six additional credit hours selected in consultation with the student’s certificate advisor. A GPA of 2.5, with no grade below a C, is required in certificate courses.

Suggested optional courses for the major in Peace and Conflict Resolution and for the Certificate in Peace Studies include:

- PACE 247 Survey of Conflict Management
- PACE 315 Personal Peace: Stories of Hope
- PACE 345/ANTH 345 Aggression, War, and Peace
- PACE 373/POLS 396 Nonviolent Political Alternatives
- PACE 399 Directed Reading
- PACE 410 History of Peace Movements
- PACE 412 Gandhi, King, and Nonviolence
- PACE 413 Terrorism
- PACE 420 Introduction to Human Rights
- PACE 430 Leadership for Social Change
- PACE 477 Culture and Conflict Resolution
- PACE 478 International Law and Disputes
- PACE 485* Topics in Peace and Conflict Resolution
- PACE 489 Hiroshima and Peace (summer only)
ANTH 423 Social and Cultural Change
BIOL 310 Environmental Issues
COM 340 Intercultural Communication
COMG 455 Conflict Management
ECON 414 Global Economic Crisis and Recovery
FAMR 350 Leadership and Group Process
GEOG 435 Political Geography of Oceans
GEOG 436 Geography of Peace and War
POL 201 Problems of War and Peace
POL 319 International Organization
POL 375 Constitutional Law I: Institutional Power
POL 394 Democracy in Organizations
SOC 433 Analysis in Law and Social Change
SOC 446/WS 446 Gender Violence Over the Lifecycle
WS 304 Women, War, and the Military

*There may be more than one section of this course offered, each focusing on different specialized topics in the field. Examples include Protest Under Occupation, Indigenous Peacemaking, and Advocating for Children: Rights and Welfare. The course is repeatable one time.

**Graduate Study**

**Certificate in Conflict Resolution**

The Graduate Certificate in Conflict Resolution (GCCR) allows students pursuing a master’s or doctoral degree in another area to become acquainted with conflict resolution theory, practice, and activities. Students learn the fundamentals of conflict resolution including conflict dynamics, dispute resolution systems, deliberative dialogue, and culturally appropriate dispute resolution processes. The program offers basic and advanced courses to develop and practice foundational skills such as negotiation, facilitation, and mediation.

Students are encouraged to use the certificate program to increase their competence in conflict resolution as it relates to their major area of study. It is a compliment to many degrees and can be earned concurrently with a JD, MA, MPA, MS, PhD, MEd, MBA, or MSW. It is also available to students seeking the certificate only. Unclassified students, as well as degree students, are considered for admission.

The certificate attracts students enrolled in public administration, education, law, urban and regional planning, political science, sociology, anthropology, geography, health, social work, human resource management, environmental science, and psychology, along with working professionals in the community.

Students are required to complete fifteen (15) credits from the approved course list, which is divided into core skills and elective courses. Students must complete at least two skills courses from the list of core and three from the list of electives.

The program is multi-disciplinary in nature. The following list provides examples and is not a comprehensive list of courses that are approved in the certificate program.

- PACE 629 Advanced Negotiation
- PACE 647 Mediation: Theory and Practice
- PACE 650 Dispute Resolution System Design
- PACE 652 Conflict Management for Educators
- PACE 660 Family Mediation
- PACE 668 Facilitation: Facilitating Community and Organizational Change
- PACE 695 Conflict Resolution Practicum (variable hours)
- PLAN 627 Negotiation & Mediation in Planning
- PLAN 661 Collaboration Between Sectors
- EDCS 640K Peace Education for the Humanities
- LAW 508 Negotiation and Alternative Dispute Resolution
- LAW 529 Peacemaking
- LAW 547/WS 647 Gender and Law
- LAW 590 Mediation Clinic
- MGT 660 Negotiation
- POLS 633 International Conflict Resolution
- POLS 635 (B) International Relations and War
- POLS 635(E) International Organization
- SOC 730 Conflict Analysis/Resolution

Up to two classes at the 400-level may also be counted toward the certificate, subject to advisor approval. See the website at www.peaceinstitute.hawaii.edu or contact the program office for a complete list of courses.

The Matsunaga Institute also highly encourages, but does not require, a practicum to deepen the students’ understanding of conflict management and to develop their skills in a real world setting. A practicum, PACE 695, is offered as an elective with variable credits and is repeatable once up to 3 credits. The precise form is to be determined in consultation with the advisor. Practicum guidelines are available in the office or can be obtained from an advisor. Specific information about the required and elective courses, including the graduate certificate brochure, can be found on our website.

Each student will be assigned a temporary advisor upon acceptance into the program and may choose an alternate advisor during the first semester of coursework based on the student’s interests and the advisor’s area of expertise. Prior to completing the program, and under the supervision of their advisor, students will complete a capstone paper that integrates both academic and practical experiences in the certificate.

Upon completion of the core courses, students are expected to demonstrate their skills in facilitation, negotiation, mediation, or process design. The demonstration may be either an actual intervention or a simulated mediation or other problem-solving process organized by the student with the help of their advisor. Students are assessed on their ability to develop and maintain a collaborative atmosphere and approach; their ability to use communication skills such as appropriate questions and active listening; their ability to clarify, analyze, frame, track, and link appropriate issues; their ability to use interest-based negotiation principles effectively and to develop and test dispute resolution options using interests and criteria. Successful completion of the program leads to a Graduate Certificate in Conflict Resolution.

Consideration for admission to the certificate program requires filing of an application form available from the department and the Office of Graduate Education, and a supplemental program application that can be found online at www.peaceinstitute.hawaii.edu. International students must have a 600 (paper), 250 (computer), and 100 (internet) TOEFL score to be admitted.
Philosophy
College of Arts and Humanities
Sakamaki D-301
2530 Dole Street
Honolulu, HI 96822
Tel: (808) 956-9049
Fax: (808) 956-9228
Email: philo@hawaii.edu
Web: www.hawaii.edu/ph

Faculty
*R. Bontekoe, PhD (Chair)—hermeneutics, epistemology, philosophy of law
*T. Albertini, DPhil—Renaissance and early modern philosophy, Islamic philosophy, feminist issues in philosophy
*R. T. Ames, PhD—Daoist philosophy, Confucian philosophy, American philosophy, philosophy of culture, comparative philosophy
*A. Chakrabarri, DPhil—Indian philosophy, philosophy of language, philosophy of mind
*C. Y. Cheng, PhD—philosophy of language and logic, American philosophy, classical Chinese philosophy, Neo-Confucian philosophy
*V. Dalmiya, PhD—epistemology, feminist philosophy
*M. Ishida, PhD—classical American philosophy, Japanese philosophy, process philosophy, history and philosophy of mathematical logic
T. Jackson, PhD—specialist, director of philosophy in the schools; logic, comparative philosophy, philosophy for children
*K. Kipnis, PhD—philosophy of law, social and political philosophy, ethics
*S. Odin, PhD—Japanese philosophy, comparative philosophy, American philosophy
*R. Raghunathan, PhD—Indian and Buddhist philosophy, philosophy of religion, ancient Greek philosophy, epistemology
*J. Tanke, PhD—continental philosophy, aesthetics, historical ontology, social and political philosophy
*G. Tsai, PhD—ethics, social and political philosophy

Degrees Offered: Undergraduate Certificate in Islamic Studies, BA (including minor) in philosophy, MA in philosophy, PhD in philosophy

The Academic Program
Philosophy (PHIL) is an open inquiry that involves the disciplined examination of our most comprehensive goals, standards, and criteria. For example: how should we conduct ourselves in our relations with one another? (ethics); what standards should we use to assess our institutions? (social and political theory); how may we achieve knowledge and understanding of the world around us? (epistemology, philosophy of science); what are the most general structures of thought and reality? (philosophy of logic and language, metaphysics); and what place does art have, or what place should it have, in human life? (aesthetics). In pursuing these questions, philosophy is often led to confront issues about the ultimate nature of reality and value or to consider possible limitations on our ability to answer or even to ask such questions. Philosophy proceeds with its task in part through contributing to ongoing discussions and debates within disciplines and traditions and also by cross-disciplinary and cross-cultural comparisons.

Students majoring in philosophy work to develop for themselves a comprehensive view of the aspirations and achievements of human culture and in the process are encouraged to acquire the skills of careful reading and interpretation of texts, of writing that conveys clearly their understanding of some issue, and of responding critically to ideas that other people advance. The Department of Philosophy’s faculty has expertise in an unusually diverse range of philosophic traditions. The faculty includes specialists in Chinese, Japanese, Indian, Buddhist, and Islamic thought, as well as in many of the important Western traditions. The department as a whole has long been recognized internationally for its comparative work between philosophic traditions.

Undergraduate Study
Bachelor’s Degree
Requirements
Students must complete 30 credit hours of philosophy courses, including required courses:
- Logic: PHIL 110 or 111;
- Two elective courses 200-level or above;
- Two courses in the History of Western Philosophy: PHIL 211, 212, 213, or 414 (Alpha);
- Three courses in the core philosophical fields (of ethics, aesthetics, metaphysics, political philosophy, epistemology, philosophy of science): PHIL 301, 302, 304, 306, 307, 308;
- One course in Buddhist, Chinese, Indian, islamc, or Japanese philosophy: PHIL 330 to 380, PHIL 406; and
- PHIL 449

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Minor
Requirements
Students must complete 15 credit hours of philosophy above the 100-level. A minor will have any one of the following themes: Asian philosophy; ethics and law; science and society; humanities and the arts; and history of philosophy.

For details of which courses fall under these themes, students should consult the department undergraduate advisor.

Undergraduate Certificate in Islamic Studies
The purpose of this certificate is to increase understanding of Islam as a world religion through critical analysis of primary and secondary materials, to foster knowledge about the complexity among Islamic societies and their diverse cultural expressions, and to explore the role of Islam and Muslims in present and past world affairs.

This certificate is housed within the College of Arts and Humanities. The participating departments are Art and Art History, History, Philosophy, and Religion. Minimum prerequisites for acceptance into the program for undergraduates are sophomore or higher standing with a minimum GPA of 2.5 and the completion of at least one introductory course within one of the four participating departments with a grade of B or better. For non-UH Mānoa students, the prerequisite is an AA or BA degree (or equivalent) that included some humanities component or relevant work experience. Non-UH Mānoa students who do not wish to enroll in a degree program may register for the courses through Outreach College.
Requirements

- 15 credit hours are required for completion of the certificate.
- HIST 354, PHIL 330, and REL 209. It is recommended that REL 209 be taken first.
- Two electives selected from: ART 491B, 492B, 493, HIST 301, 302, 355, 432, and REL 352. (One course in Arabic language may be used as one of the electives.)
- Students are required to undertake a final research project in association with an elective class. Advanced undergraduates with GPA of 3.5 or above may, with instructor consent, use credit from the following graduate classes: ART/ASAN 792, HIST 662, or PHIL 730.

For more information, contact the undergraduate chair.

Graduate Study

The department offers graduate training leading to the MA and PhD degrees. Students with BA degrees may apply to the MA program. Students are accepted directly into the PhD program only if they have already received the MA degree or the equivalent from an accredited institution and have met any other departmental requirements.

Specific requirements for all graduate degrees are detailed in the department’s “Graduate Student Handbook” at uhmpsa.wordpress.com/the-graduate-student-handbook/.

Although the Western philosophical tradition remains the fundamental frame of reference for the department, the opportunity provided for specialization in the area of Asian philosophy is unique in that UH Mānoa is the only institution of higher learning in the U.S. with a regular program leading to the PhD degree with areas of specialization in Islamic, Indian, Buddhist, Chinese, Japanese, and comparative philosophy. Whatever their field of specialization, graduate students intending to complete a PhD in philosophy at UH Mānoa must acquire a thorough knowledge of the history and problems of Western philosophy. On the basis of this foundation, students may further specialize in one of three areas of study: Western philosophy, Asian philosophy, or comparative philosophy.

The area of comparative philosophy is the most demanding; at the PhD level its requirements include proficiency in both the Western and Asian fields. The candidate is expected to gain a mastery of some specific topic that can be approached through the resources of two or more philosophic traditions.

All graduate students shall develop their course of study in consultation with the chair of the graduate program.

The MA and PhD in Asian philosophy are recognized Western Interstate Commission for Higher Education (WICHE) regional graduate programs. Residents of Alaska, Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, Utah, Washington, and Wyoming are eligible, on admission, to enroll at Hawai‘i-resident tuition rates.

Master’s Degree

The MA program can be completed either entirely through course work or through a combination of course work and thesis preparation.

Admission Requirements

Students seeking admission must have a BA degree, including the equivalent of 30 credit hours in philosophy. Students who lack this preparation must make up deficiencies either before or during graduate study. In the latter case, students will be admitted only conditionally, pending removal of the deficiencies. Deficiencies may also be designated in cases where a student’s background does not include a sufficient number and range of courses in Western philosophy. The GRE General Test is required of all program applicants to whom it is accessible.

Degree Requirements

To be eligible for conferral of the MA degree, a student must maintain a minimum GPA of 3.3 while completing at least 30 credit hours of course work, at least 18 of which must be in courses numbered 600 and above. In addition, students submit three papers for a culminating exam, which includes an oral component. Also required for the MA degree are four semesters (or the demonstrated equivalent) of at least one philosophically significant language other than English: typically classical Greek, Latin, French, German, Arabic, classical Chinese, Japanese, Sanskrit, or Pali.

Doctoral Degree

The doctoral program consists of two stages. The first stage is that leading to admission to candidacy; the second, to the awarding of the degree. Normally the first involves at least two years of course work beyond the MA in preparation for departmental and language examinations. The second stage involves writing a dissertation and passing an oral examination in its defense. Students must attain certification for PhD candidacy—that is, fulfill all the requirements for the PhD except for the writing and oral defense of the dissertation—within four years of admission to the PhD program.

Admission Requirements

Students seeking admission must hold an MA degree or the equivalent in philosophy and have earned a minimum GPA of 3.3 in courses taken for the MA. Students may be required to make up deficiencies upon entry into the PhD program (see requirements for MA degree above). The GRE General Test is required of all program applicants to whom it is accessible.

Degree Requirements

To be eligible for conferral of the doctor of philosophy degree, a student must maintain a minimum GPA of 3.3 while completing at least 30 credit hours of course work beyond the requirements for the MA. A minimum of 18 of these credit hours must be taken at or above the 600 level. Students are required to demonstrate competence in each of three general areas: 1) history of philosophy; 2) metaphysics, epistemology, logic, and philosophy of science; and 3) ethics, aesthetics, social and political philosophy, and philosophy of law. Course listings made available each semester will indicate the general area or areas within which each course fits. Students are required to pass two examinations in an area related to the subject matter of their prospective dissertation, to complete an original dissertation, and to pass a final oral dissertation defense. In addition, students shall demonstrate proficiency in at least one (and where deemed necessary two) philosophically significant language(s) other than English: typically classical Greek, Latin, French, German, Arabic, classical Chinese, Japanese, Sanskrit or Pali. Language proficiency examinations will be conducted through Graduate Education and the department of UH Mānoa responsible for teaching that language.
Physics

College of Natural Sciences
Watanabe 416
2505 Correa Road
Honolulu, HI 96822
Tel: (808) 956-7087
Fax: (808) 956-7107
Email: physics@hawaii.edu
Web: www.phys.hawaii.edu/

Faculty
*P. K. Lam, PhD (Chair)—condensed matter, theory
*V. Bindi, PhD—particle astrophysics
*T. Browder, PhD—elementary particles, experiment
*W. L. Dirto, PhD—applied chaos theory
*L. Elias, PhD—free electron laser physics
*P. Gorham, PhD—elementary particles, experiment
*F. Harris, PhD—elementary particles, experiment
*M. D. Jones, PhD—elementary particles, experiment
*J. Kumar, PhD—elementary particles, theory
*J. G. Learned, PhD—particle astrophysics
*M. J. Madey, PhD—free electron laser physics
*D. Marfatia, PhD—elementary particle (theory)
*J. Maricic, PhD—particle astrophysics
*S. Matsuno, PhD—particle astrophysics
*R. Milincic, PhD—elementary particles, experiment
M. Nassir, MS—astronomy
*K. Sattler, PhD—condensed matter, experiment
*E. B. Szarmes, PhD—free electron laser physics
*X. R. Tata, PhD—elementary particles, theory
*S. Vahsen, PhD—elementary particles, experiment
*G. Varner, PhD—elementary particles, experiment
*C. Vause III, PhD—condensed matter, theory
*P. von Doetinchem, PhD—particle astrophysics

Affiliate Graduate Faculty
A. Barger, PhD—cosmology, observational
T. Dombeck, PhD—elementary particles, experiment
S. Dye, PhD—particle astrophysics
A. McDonald, PhD—particle astrophysics
R. Morse, PhD—particle astrophysics
R. Mussa, PhD—elementary particles, experiment
W. Simmons, PhD—elementary particles, theory
J. Yepez, PhD—quantum information dynamics studies in quantum computation

Cooperating Graduate Faculty
K. Bennett, PhD—high-field magnetic resonance imaging
T. Ernst, PhD—magnetic resonance imaging
V. A. Stenger, PhD—neuroscience, magnetic resonance research
S. Still, PhD—theoretical biophysics, physics of information processing; nonequilibrium thermodynamics; information theory; econophysics

Degrees Offered: BA (including minor) in physics, BS in physics, BS in astrophysics, MS in physics, PhD in physics

The Academic Program
Physics (PHYS) is the study of matter and energy and how they interact at the most basic levels. Areas include mechanics, optics and lasers, thermodynamics, electricity, magnetism, quantum theory, atomic and nuclear phenomena, condensed matter, and elementary particles. Physics is widely regarded as the most fundamental of all the sciences. UH Mānoa offers both the Bachelor of Arts and Bachelor of Science degrees in physics. Faculty members who teach physics courses are at the forefront of research in physics both in experiment and in theory. In the field of elementary particles, faculty members currently perform experiments in Hawai’i, the mainland U.S., France, Japan, and Antarctica to study neutrinos and high-energy gamma rays coming from the stars. Others are involved in experiments at the BEPC II accelerator in China and at the KEKB accelerator in Japan, studying particle production and decay and the violation of particle/anti-particle symmetry. Faculty members are also involved in the space-based AMS experiment and on the development of techniques for dark matter searches. The particle theory group is involved in the identification of new physics that addresses new questions in particle physics and cosmology that are beyond the scope of the Standard Model, and the development of strategies that distinguish this new physics from the Standard Model phenomena. In condensed-matter physics, they investigate nano-materials and use a scanning tunneling microscope to take pictures of individual atoms. A free electron laser is operating in the physics building. This device allows scientists to carry out forefront research in fundamental and applied physics. Often, undergraduate physics majors work on these projects along with graduate students and the faculty.

Advising
Academic advising is mandatory for all undergraduate physics majors. Contact the department office for assignment to an advisor. Note that in order to complete the program in 4 years, a physics student must begin the study of calculus in either the first or the second semester of the freshman year.

Undergraduate Study

BA in Physics

The BA Physics degree is designed specifically for those students who wish to supplement the core study of physics with courses in interdisciplinary fields. As a fundamental science with applications in many fields, physics strengthens the background of students who have wider interests that lie outside of physics, in fields such as biology, health sciences, environmental studies, oceanography, geology, computer sciences, and social sciences.

Requirements
Students must complete the following courses with grades of C (not C-) or better:
- PHYS 170/170L, 272/272L, 274/274L, 310, 350, 400, 480
- One course in advanced laboratory or applied techniques: PHYS 305 or MATH 407, or PHYS 475 or EE 211, or PHYS 480L
- CHEM 161/161L or 171/171L or 181A/181L
- MATH 241, 242, 243, and 244; or MATH 251A, 252A, and 253A
- MATH 307 or 311
- Minimum of 15 credits of an approved Interdisciplinary Concentration (IC) course program:
  - Courses must be chosen to form a coherent theme
  - Minimum of 12 credits must be non-introductory courses at the 200-level or above
- Proposed IC courses (and any modifications) must be approved by physics department chair
- Approval shall be granted only after the student has passed (or is currently enrolled in) PHYS 274, 274L, and MATH 243 or 253A

For more details, including examples of previously approved Interdisciplinary Concentration course programs, see the website: www.phys.hawaii.edu.

Upon approval of a physics department advisor, MATH 215 and 216 may be substituted for MATH 241 and 242, and PHYS 170 through 272L may be satisfied by PHYS 151 through 152L.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaia/programsheets/.

BS in Physics

Requirements
- Students must complete 46 credit hours in physics courses, including:
  - PHYS 170/170L, 272/272L, 274/274L, 310, 311, 350, 400, 430, 450, 480, 480L, and 481
  - One course from PHYS 440, 460, or 490
  - Two courses from PHYS 305, 475, or 481L
  - CHEM 161/161L and 162/162L or 171/171L or 181A/181L
  - MATH 241, 242, 243, 244, and 311 or 307 (MATH 251A, 252A, 253A, may be substituted for MATH 241, 242, 243, 244. PHYS 215, 216, may be substituted for MATH 241, 242, with consent from physics advisor.)
  - Grade of C (not C-) or better in above courses

Upon approval of a physics department advisor and chair, the PHYS 170 through 272L requirements may be satisfied by PHYS 151 through 152L; and requirements for PHYS 305 (or 475 or 481L), 440 (or 460 or 490), 450, 480, and 480L, may be modified to accommodate a special emphasis or interdisciplinary program that is appropriate for the major in physics.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaia/programsheets/.

Minor in Physics

Requirements
- PHYS 151/151L and 152/152L or PHYS 170/170L and 272/272L.
- PHYS 274 (lab not necessary)
- 15 additional upper division credit hours, including PHYS 310, 350, and 480
- Grade of C (not C-) or better in the above courses

Upon recommendation of a physics department advisor and chair, requirements for PHYS 310, 350, and 480 may be modified if an equivalent course is taken in another department.

BA (and Minor) in Astronomy

For more information on the BA degree and Minor in Astronomy, see ASTR program on page 103.

BS (and Minor) in Astrophysics

For more information on the BA degree and Minor in Astrophysics, see ASTR program on page 103.

Graduate Study

This program offers opportunities for study and research leading to the MS and PhD degrees in physics. The staff and facilities are especially aimed toward experimental and theoretical work in elementary particle physics, nanophysics, and free electron laser physics.

Intended candidates for the MS or PhD in physics must present a minimum of 35 undergraduate credit hours in physics, including atomic and nuclear physics, electromagnetism, mechanics, quantum mechanics, and thermodynamics. Courses in general chemistry and differential equations are also required. Official scores of the GRE General Test and the subject test in physics must be submitted prior to admission.

At least one year of experience as a teaching assistant is required of all MS or PhD candidates. All graduate students are required to attend the weekly colloquium.

Master’s Degree

Students wishing to terminate their formal education with the MS degree generally select Plan A (thesis) so as to gain some research experience, as well as formal class work. These students are prepared to enter teaching positions at the community college level or industrial and civil service positions at the junior scientist and engineer level.

Students planning advanced graduate work generally complete the Plan B (non-thesis) or Plan C (examination) requirements for the MS degree. At this point most of their formal class work has been completed and further work consists mainly of seminars, directed research, and the dissertation.

Requirements
- For the MS Plan A, students must complete 30 credit hours of course work, including (a) a minimum of 18 credit hours of physics courses numbered 600 to 798, including PHYS 610, 650, 670, and 690; (b) minimum of 6 credit hours of thesis; and (c) approved electives, which may be selected from PHYS 699 for a maximum of 2 credit hours and courses in mathematics, chemistry, meteorology, engineering, and philosophy. Other courses can be included on a case-by-case basis at the discretion of the department chair. A final oral examination covers the thesis and related areas and completes the Plan A requirements.

- For the MS Plan B, students must complete 30 credit hours of course work, including (a) a minimum of 18 credit hours of physics courses numbered 600 to 798, including PHYS 610, 650, 670, and 690; and (b) approved electives, as in Plan A. A written qualifying examination completes the Plan B requirements.

- For the MS Plan C, there is no credit hour requirement but a minimum residency requirement must be satisfied. MS Plan C is intended for students who had completed equivalent course requirements at another institution. Admission to Plan C requires the approval of the physics graduate program advisory committee. A written qualifying examination and a final oral examination complete the requirements for Plan C.

Doctoral Degree

The PhD degree is essentially a research degree. Students complete an original and significant piece of research and are at the forefront of one area of physics. Students are expected to enter the academic world in a teaching and research capacity or industrial and government research laboratories as senior scientists.
Requirements
To be admitted to the PhD program, students must perform satisfactorily on a written qualifying examination followed by an advancement to candidacy oral examination. A student is allowed two attempts to pass the written qualifying examination within the student’s first six semesters as a regular classified graduate student. The student’s first attempt must be within the student’s first four semesters as a regular classified graduate student. Students who fail twice cannot continue in the graduate program.

In addition to the courses required for the MS degree, students are responsible for the material covered in PHYS 651 and 671. A scholarly dissertation must be written, and a final oral examination in defense of the dissertation completes the requirements for the PhD.

Political Science
College of Social Sciences
Saunders Hall 640
2424 Maile Way
Honolulu, HI 96822
Tel: (808) 956-8357
Fax: (808) 956-6917
Email: polisci@hawaii.edu
Web: www.politicalscience.hawaii.edu

Faculty
*D. Halbert, PhD (Chair)—public policy, political futures, law and politics, and politics of intellectual property
*S. Krishna, PhD (Graduate Chair)—comparative politics, international political economy, South Asian Studies, and postcolonial studies
*J. N. Goodyear-Ka’opua, PhD (Undergraduate Chair)—Hawaiian politics, Indigenous politics, politics of education and culture
*H. Aikau, PhD—contemporary native Hawaiian identity and politics, feminist theory, and critical race theory
*R. Chadwick, PhD—international relations, global modeling, methodology
*K. Ferguson, PhD—feminist theory and methods; political theory; politics of organizations; gender, globalization, militarism
*P. Flowers, PhD—Japanese politics, international law, international relations
*J. Goldberg-Hiller, PhD—law and society, law and philosophy, sexuality politics, indigenous politics
*J. Grove, PhD—critical war studies, complexity theory and system theory
*M. Henningsen, PhD—European politics, genocide/Holocaust, political philosophy, political theory
*K. Heyer, PhD—law and society, disability politics, comparative law, social movement and civil rights
*E. Kimura, PhD—comparative politics, political change, Southeast Asia
*C. Moore, PhD—American politics, public policy, politics of bureaucracy, institutional change
*L. Nitz, PhD—American government; methodology; political economy; public policy; research methods; topics in political theory
*M. J. Shapiro, PhD—American politics; interpretive methods; politics of culture; media and popular culture; political theory; public policy
*N. Silva, PhD—Hawaiian politics, indigenous politics
*N. Soguk, PhD—international relations theory, comparative politics; international organization; international migration and diasporas, human rights, Middle East
*M. Steger, PhD—global politics, globalization, political ideologies, comparative political theory (mostly East-West), nonviolence
*C. M. Stephenson, PhD—international relations; international organization; international environmental politics; international security; peace studies, conflict resolution
*M. Yang, PhD—comparative politics, political economy of development, East Asia
*K. Zhou, PhD—comparative politics; Chinese & Asian politics; women and development, and public policy

Affiliate Graduate Faculty
W. Dissanayake, PhD—Asian cinema, film theory
F. Farhi, PhD—Middle East politics, comparative politics
B. Kerkvliet, PhD—Southeast Asian politics
O. Lee, PhD—Chinese foreign policy, U.S.-China relations
J. Wilson, PhD—political philosophy, American politics

Cooperating Graduate Faculty
K. O. Kane, PhD—philosophy and theory, pedagogy, film and media studies, women’s studies
C. R. Lawrence—anti-discrimination law, educational law and policy, Constitutional law
M. MacKenzie—Native Hawaiian rights, Native Hawaiian rights clinic, advanced legal studies in Native Hawaiian law, legal research

Degrees Offered: Undergraduate Certificate in Law and Society, BA (including minor) in political science, MA in political science, PhD in political science

The Academic Program
Political science (POLS) examines politics not only in government and among nations but also in private organizations, businesses, universities, families, language, and daily life.

Various methods are used to do this, ranging from the interpretive and historical to the quantitative and statistical. Political science graduates enter numerous professions: journalism, foreign service, social services, government, law, law enforcement, teaching, civil service, business, librarianship, and research. Undergraduate majors have done all of these and more. So have the department’s graduate students, many of whom come from abroad and return to their home countries to become leaders in their fields. The Department of Political Science provides a sound undergraduate education that helps prepare people to think critically and constructively about the world and to be active, concerned citizens in whatever walk of life they choose. Its internship program permits undergraduates to earn academic credit while working in community or governmental institutions and processes.

At the graduate level, the department stands out in the fields of Asian politics, comparative politics, Asian politics, futures studies, indigenous politics, international relations, law and society, policy analysis, and political theory. The department is an open, informal place where students, staff, and faculty alike are encouraged to participate in departmental affairs and governance. For further information, call (808) 956-8357 or write to the department.

Advising
Students may write to, or make appointments to see, either the graduate chair or the undergraduate chair, who will discuss the options available and assign students, if necessary, to a faculty member who specializes in a field of study.

* Graduate Faculty
Undergraduate Study

Bachelor’s Degree

Requirements
Students must complete 30 credit hours, including:
- a prerequisite introductory course at the 100 or 200 level
- 12 credit hours from courses distributed as follows: POLS 335; either POLS 301 or 302; either POLS 305 or 315; and one of either POLS 375, 376, or 385
- POLS 390 (Political Inquiry and Analysis)
- 9 credit hours from other 300 level courses, including 3x5 courses
- 3-6 credit hours from 400 level courses

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Minor

Requirements
Students must complete 18 total credit hours. 15 credit hours from the 300 level or above, including one course from POLS 305, 315, 335, 375 or 385.

Students should choose one of the 100 or 200 level political science courses as part of their General Education Core in social sciences, since a 100 or 200 level course is prerequisite for 300 level courses.

Undergraduate Certificate in Law and Society

Requirements
15 credits will be required to be completed with a GPA of 2.5 or above.
- POLS 374/SOC 374
- 9 credits must be upper division (300-400 level)
- 6 credits from either AMST 365, AMST 436/POLS 436/WS 436, ECON 476, HWST 495, HWST 496, HIST 475, PHIL 318, POLS 375, POLS 376, SOC 231, SOC 333, SOC 432, or SOC 435/WS 435
- Students are also required to submit a portfolio containing three essays.

Graduate Study

The department has three different graduate degree programs: master’s degree Plan A, for which a master’s thesis is required; master’s degree Plan B, for which a culminating experience is required; and the doctor of philosophy (PhD) program. The department offers specializations in alternative futures, Asian and Pacific politics, comparative politics, international relations, political theory, indigenous politics, and public policy.

Further information regarding the requirements for all three programs is available at www.politicalscience.hawaii.edu.

The application deadline is December 1 for admission in the fall semester. NO SPRING semester admissions are taken.

Master’s Degree

The department offers MA Plan A (thesis) and Plan B (culminating experience) degrees that can be tailored to a student’s interests and needs. The MA program invites applicants who are prepared to think critically and constructively about political phenomena. All MA students are required to take three of the following courses regardless of program (Plan A or Plan B): POLS 610, 620, 630, 640, 650, 660, 670, and 680.

Doctoral Degree

The department’s PhD program encourages students to pursue specialized interests as well as to broaden their understanding of political phenomena. The department looks for students who are prepared to construct a successful course of study based on their individual interests, in conjunction with appropriate advising and course work. We encourage applicants who approach political questions in a critical and creative manner and who combine work from different specializations and disciplines to pursue their own particular projects.

Honors and Awards

The department has several teaching assistantships, research assistantships, and scholarships that are awarded to deserving qualified students.

Undergraduate
- Thomas Hamilton Memorial Scholarship—$600 for a student with outstanding scholarship and all-around performance who has completed at least two courses in political theory.
- Carl Knobloch Prize Fund—$500 for a student with an excellent academic record who also has an outstanding record of community and/or UH service.

Graduate
- Norman Meller Award—$1,500 for fall semester to a graduate student with an outstanding academic record.
- Harry J. Friedman Memorial Scholarship—$700 for outstanding work in comparative politics.
- Jorge Fernandes Memorial Fellowship and Award—for spring semester to aid an outstanding graduate student to support the completion of his/her dissertation.
- Glendon Schubert and James Neal Schubert Political Science Endowed Scholarship—for spring to a graduate student who specializes in public law, law and society.

Psychology

College of Social Sciences
Sakamaki C-400
2530 Dole Street
Honolulu, HI 96822
Tel: (808) 956-8414
Fax: (808) 956-4700
Email: psych@hawaii.edu
Web: www.psychology.hawaii.edu

Faculty
- A. E. Maynard, PhD (Chair)—developmental, cultural, siblings and socialization, cognitive change
- C. K. Baker, PhD—community, intervention development and evaluation, domestic violence, teen dating violence
- J. Barile, PhD—community, neighborhood environments, health equity, quality of life and well-being
- D. Cicero, PhD—clinical, experimental psychopathology, psychosis, risk for schizophrenia
- P. A. Couvillon, PhD—behavioral neuroscience, animal learning, cognition
- F. J. Floyd, PhD—clinical, family and couple relationships, developmental disabilities, sexual minority growth
- B. N. Frazier, PhD—children’s cognitive development

* Graduate Faculty
Undergraduate Study

Bachelor's Degree

Pre-major BA and BS Degree Requirements

Students must complete one course in methodology (PSY 212) and one course in statistics (PSY 225 or SOCS 225) with a minimum grade of C (not C-) and attend one major meeting. In addition, a minimum overall entry GPA of 2.5 in all PSY UH Mānoa course work (including PSY 100 and any transfer PSY courses) is required to declare psychology as a major.

BA Degree Requirements

(minimum 36 credits, 15 earned at UH Mānoa)

In addition to completion of PSY 212 and PSY 225 or SOCS 225, students must complete 30 credit hours, including:

- 15 credits at the upper division level (300 level and above)
- One course from three of these four psychology foundation areas:
  - Experimental (PSY X2X courses), e.g., PSY 220, 322, 324
  - Psychobiology (PSY X3X courses), e.g., PSY 230, 331, 333
  - Developmental (PSY X4X courses), e.g., PSY 240, 341, 342
  - Social or Personality (PSY X5X or PSY X6X courses), e.g., PSY 250, 260, 352
- 3 credit hours in the advanced topic series (PSY 4X9, many 4X9 courses are designated as Writing Intensive), excluding PSY 499

A minimum exit GPA of 2.0 in psychology must be maintained for graduation. PSY 100 is a prerequisite to all other courses except PSY 170 and may be counted toward the major and the diversification social sciences (DS) core requirement.

No more than a combined total of 15 credits of practicum (PSY 257), teaching (PSY 258), and directed research (PSY 399) may be counted toward the major; no more than 9 credit hours in PSY 499 may be counted. Only 3 credit hours in PSY 499 can be used to fulfill the requirement of 15 credit hours at the upper division level. Nevertheless, students intending to do graduate work are encouraged to enroll in PSY 499 and in PSY 408 or 478.

BS Degree Requirements

(minimum 42 credits, 21 earned at UH Mānoa)

In addition to completion of PSY 212 and PSY 225 or SOCS 225, students must complete one year of Biology* and 18 credits at the 300 and above level, including:

- one additional PSY 4X9 advanced focus (W, O, etc.) seminar (3 credits)
- two semesters of directed research PSY 499 (6 credits)
- one 3-credit course in Statistics, e.g., PSY 419, 610, or 611 is highly recommended in their senior year
- BIOL 171/171L (4 credits)
- and either BIOL 172/172L (4 credits) or PSY 331 or 333 (3 credits)

A minimum exit GPA of 2.0 in psychology must be maintained for graduation.

New majors should seek assistance from the Undergraduate Advising Office in Sakamaki D409 (psychadv@hawaii.edu) or consult with Lorey K. Takahashi, Chair of Undergraduate Studies (LKT@hawaii.edu), as soon as possible for advising. Additional information can be found at www.psychology.hawaii.edu.

The Academic Program

Psychology (PSY) can be defined as the science of mind and behavior. Some psychology majors are preparing to enter graduate school, where they will be trained to become professional psychologists and scholars. Others use psychology as a pre-professional major for other fields, such as law or medicine. The majority of psychology majors, however, are using psychology as a general interdisciplinary arts major. Psychology is qualified as a discipline for this purpose. An understanding of the spectrum of psychological knowledge, methods, and concepts facilitates and enhances productivity in virtually every area of human endeavor. This understanding also promotes interpersonal skills and sensitivities, as well as critical thinking skills. Collectively, these understandings foster a respect for others, which is a core element of the curriculum of the psychology department.

UH Mānoa is fortunate in having a psychology department composed of an unusually large number of internationally recognized figures in the field. Not only do students get to learn from these scholars in the classroom, but many receive direct training in cutting-edge research and the application of psychological knowledge. Areas of concentration include behavioral neuroscience; clinical studies (APA accredited); community and cultural psychology; developmental psychology; experimental psychopathology; social-personality; and cognition.

Affiliate Graduate Faculty

- D. Bhawuk, PhD—culture and community
- R. W. Brislin, PhD—social-personality
- P. W. Dowrick, PhD—video research
- S. Helm, PhD—community and culture psychology
- E. S. Hishinuma, PhD—health, cross-cultural
- J. K. Kaholokula, PhD—Native Hawaiian Health
- P. E. Nachtigall, PhD—marine mammal behavior
- A. Pack, PhD—human and animal cognition
- L. A. Yamauchi, PhD—educational psychology

Cooperating Graduate Faculty

- B. F. Chorpita, PhD—clinical childhood anxiety disorders
- D. Landis, PhD—psychology
- J. E. Schiffman, PhD—child clinical
- W. G. Stephan, PhD—sociology
- W. T. Tsushima, PhD—neuropsychology

Degrees and Certificate Offered: BA in psychology, BS in psychology, MA in psychology, PhD in psychology, Certificate in Clinical Psychology (Respecialization)
For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

**Graduate Study**

The graduate program in psychology is designed to provide students with a strong background in theory, research methodology, and psychological issues. Currently, there are 7 concentrations in which students can receive specialized training: behavioral neuroscience; clinical studies; community and cultural psychology; developmental psychology; experimental psychopathology; social-personality; and cognition. Specific details concerning each of the concentrations, their requirements, and faculty research interests may be obtained in one of four ways: (a) by writing to the Department of Psychology, University of Hawai‘i, 2530 Dole Street, Honolulu, HI 96822; (b) by faxing your request to (808) 956-4700; (c) by sending an email communication to the Chair of Graduate Studies (gradpsy@hawaii.edu); or (d) by accessing the department’s website at www.psychology.hawaii.edu.

Applications are considered only for the fall semester. Applicants should normally possess a bachelor’s degree, have a minimum of 24 credit hours of undergraduate work in psychology (including courses in basic psychology such as research methodology, statistics, learning, abnormal, social, developmental, personality, cognition, and physiological psychology), a cumulative grade point average of at least 3.0, strong letters of recommendation from professors, competitive general GRE scores (past applicants admitted as graduate students in the department tend to score at or above the 600 level on the various sub-domains of the GRE), and preferably one to two years of research experience.

One can apply online at apply.hawaii.edu/ or obtain materials relevant to the application process at www.manoa.hawaii.edu/graduate/. Completed applications must be received by Graduate Education no later than December 1 each year, with the exception of GRE scores (which can arrive during the month of January).

**Master’s Degree**

The master’s degree program includes a thesis and at least 30 credit hours of courses specified by the department and specific area of concentration. Detailed descriptions of specific requirements for each area of concentration are contained in the department webpage. The department does not offer a terminal master’s degree program in psychology. Only students interested in pursuing a PhD degree are considered for admission. Students with a BA degree are admitted to the master’s program and, upon successful completion, petition for entry into the doctoral program.

**Doctoral Degree**

Students must complete their master’s degree (from UH Mānoa or another accredited institution of higher learning) prior to entering the doctoral program in psychology at UH Mānoa. Specific course work and other relevant departmental and concentration specific classes are required for the doctoral degree. Students must pass comprehensive examinations before proceeding to the dissertation.

**Certificate Program in Clinical Psychology (Respecialization)**

The Clinical Studies Respecialization Program provides clinical training for individuals holding a PhD in a basic area of psychology from a regionally accredited university (or foreign equivalent). Individuals who are already licensed in psychology or who hold an applied degree (e.g., EdD, PsyD) are not appropriate for this program. Upon satisfactory completion of core clinical courses, practica, and internship, the Respecialization student receives a certificate from the Graduate Education and is competitive for clinical research and teaching positions as well as eligible to sit for licensure in most states. The Clinical Studies Program is APA-approved and follows a scientist-practitioner, broadly-behavioral, dual specialty approach to training in which it is encouraged of all graduate and respecialization students to integrate the literatures of a basic area of psychology with related clinical phenomena.

For further details of this certificate, please see www.psychology.hawaii.edu/concentrations/clinical-psychology.html.

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**Public Administration**

**College of Social Sciences**

**2424 Maile Way**

Honolulu, HI 96822

Tel: (808) 956-8260/(808) 956-3691

Fax: (808) 956-9571

Email: pubadmin@hawaii.edu

Web: www.pubag.hawaii.edu

**Faculty**

*M. Johansen, PhD (Director)—public management

J. Ady, PhD—communication studies

S. Chandler, PhD—social work

C. Grandy, PhD—economics

T. Kim, PhD—public administration

D. Nixon, PhD—political science

**Degree and Certificate Offered:** MPA, Graduate Certificate in Public Administration

**The Academic Program**

The Public Administration Program (PUBA) offers students a comprehensive foundation in public administration that is designed to build leadership in public service in Hawai‘i, the mainland U.S., and the Asia-Pacific region. Located in the College of Social Sciences, it offers a 39-credit master’s degree and a 15-credit certificate. The program’s format emphasizes interdisciplinary learning, collaborative teaching, and a learning community experience that is designed to help students gain knowledge, and learn skills and the values that are important for public service leadership. The classes create an environment in which many of the complex issues facing those with public responsibilities are addressed while also giving participants specific skills useful to their work in the public, nonprofit, and private sectors. The program emphasizes teamwork and collaboration so students can practice effectively in a multicultural and global society. PUBA also offers a certificate in public administration with a track in public leadership as well as one with a focus in nonprofit management. It offers a part-time program designed to assist students who are working full time and an 18-month accelerated program.

Financial support for the degree and the certificate is available through the Herman S. Doi Fellowship and the Pacific Island Health Administration Scholarship. For further

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* Graduate Faculty
information, contact the program office in Saunders Hall 631 or call (808) 956-8260. Applicants may also apply to the East-West Center.

**Graduate Study**

**Master’s Degree**

The master’s degree consists of 8 required courses (24 credits hours); two electives (6 credits), a 120 hour practicum experience and a capstone. The capstone must be taken as the final requirement in the program and serves as the culminating experience of the Masters degree.

Admissions are in the fall only.

The required courses are highly interdisciplinary and integrate a series of perspectives and skills important to effective work in public service. These courses include content in effective communication in the public sector, the political context of public institutions, economic processes, public ethics and leadership, budgeting, policy processes, analysis and implementation, administrative law, organizational change, public personnel management, research design and methods and the role of culture in public service.

The electives allow each student to design a program of study built around a theme of their personal and professional interests. Elective courses are selected by the student in consultation with the student’s faculty advisor.

The Plan A thesis option requires the student to take at least one additional graduate level research methods or statistics course.

The practicum is designed to place individuals in a setting where they compare organizational structures and processes; study leadership styles, sources of power, and communication strategies; differentiate between types of clients and sources of funding; discuss measures of organizational success; and develop specific skills. The location of the practicum varies according to the student’s past work experience and his or her learning goals. In some cases a practicum placement in one organization may be modified to become work on a project in another part of the organization. Students are encouraged to undertake a practicum that will stretch and extend their knowledge and skills.

The practicum must be completed before or concurrently with the final capstone seminar. The capstone requirement consists of a 3-credit capstone planning class, taken during the semester preceding that in which graduation will occur. All students must also enroll in a 3-credit capstone seminar during their final semester. The capstone is a group analysis of a public issue of importance in Hawai’i, the mainland, or the Asia-Pacific region. This is usually done in the fall and spring semesters of the student’s last year in the program but may also be completed as a summer-fall option for students in the accelerated 18-month program.

Four required courses, Introduction to Public Administration, Effective Communication in Public Administration, Research Methods, and Organizations: Theory and Change must be taken before enrolling in Capstone Planning. Three required courses, Introduction to Public Administration, Organizations: Theory and Change, and Leadership and Ethics must be taken before enrolling in the Practicum.

The program welcomes a diversity of professional and educational backgrounds and sees these as contributing to the learning environment. Classes are taught in the evenings to accommodate the schedules of students working full-time.

**Requirements**

MPA candidates must complete 24 credit hours of core requirements, 6 credit hours of electives, 3 credit hours of practicum, and 6 credit hours of capstone. The student must earn at least a grade of B in the practicum and in both capstone courses to graduate and must maintain a B average in all other classes.

**Other**

Up to nine graduate credits may be counted toward the degree with approval. Call the PUBA program office for additional information.

**The Certificate in Public Administration**

The program offers two certificate tracks: (1) public service leadership, and (2) nonprofit management. Each is 15 credits.

Courses in both tracks are compatible with working schedules. The nonprofit management track may be taken in conjunction with the Master of Public Administration (MPA) degree. The classes in both of these tracks may be counted toward the MPA degree, with some restrictions. Students wishing to move from one of the certificates into the MPA must apply for and be formally accepted into the master’s program.

**The Certificate in Public Administration**

The track in public service leadership consists of 15 credits.

Four required courses, (Introduction to Public Administration, Organizations, Effective Communication in Public Administration and Leadership and Ethics) are required courses for the MPA. Certificate students may then choose an elective course selected from any course taught in PUBA.

**The Nonprofit Management Track**

The track in nonprofit management is made up of two 3-credit required courses (Nonprofit Management, Nonprofit Practices and Tools) that provide an overview of issues in the field; 6 credits of electives; and a 3-credit practicum. Students take two electives: at least one elective must be a PUBA courses. The student in consultation with his or her advisor selects these courses.

The Public Policy Center

College of Social Sciences
Saunders Hall 723
2424 Maile Way
Honolulu, HI 96822
Tel: (808) 956-4237
Fax: (808) 956-0950
Email: dcsakai@hawaii.edu
Web: www.publicpolicycenter.hawaii.edu

**Faculty**

*S. Chandler, PhD (Director)—policy analysis, child welfare, collaborative management, public administration*

S. Moriwaki, PhD (Associate Director)—energy policy, sustainability, community development

*M. Johansen, PhD—non-profit research, public management, educational policy, public policy*

**Cooperating Graduate Faculty**

The Public Policy Center has 53 affiliate faculty representing all of the departments within the College of Social Sciences. See
our website for their names and contact information, as well as their fields of interest, research, and areas of teaching.

The Academic Program

The mission of the Public Policy Center is to enhance the quality of community life throughout Hawai‘i, the U.S., and the Asia-Pacific region. This mission is achieved through an interdisciplinary approach to teaching, research, service, and application. The center provides opportunities for students to expand their knowledge and gain experience in public policy. Its premise is that public policy analyses are critical to sound public policy decision-making and that teaching and scholarly work are intertwined and should be continually linked to the community beneficiaries. Public policy is a discipline that seeks to solve public problems through the design, analysis, and advocacy of well thought out, evidence-based research. In all levels of government and globally, public needs and limited resources require policy choices that are economically efficient, socially and technically effective, politically and administratively responsive. Such choices exist across a broad range of critical issues, including health, education, the environment, energy, economic development, social welfare policy, and community resilience. Students with experience and knowledge about public policy offer their community essential and meaningful skills and tools needed to analyze, design, and evaluate public policy choices. Students trained with these skills are attractive to employers in the public, nonprofit, and business sectors.

Bachelor’s Degree in Public Affairs and Policy Studies

The Public Policy Center (PPC) and the Matsunaga Institute for Peace and Conflict Resolution (MIPCR) offer a flexible, self-designed BA in public affairs and policy. Students may take courses that focus on such fields as leadership, health policy or the environment. Twelve (12) courses (36 credits) must be completed. They are distributed over 5 required courses and 7 electives. Courses are selected in consultation with faculty advisors.

Required foundation courses are offered in governance, Hawai‘i politics and peace studies; policy methods; leadership skills, mediation and facilitation; human rights, international law, and constitutional law. Electives may be chosen from a variety of disciplines across campus. There is a capstone project or internship requirement.

Additional information is available at www.publicpolicycenter.hawaii.edu or from Interdisciplinary Studies at manoa.hawaii.edu/undergrad/is.

Courses in Public Policy

Students can select courses from a wide range of fields in addition to those offered by the Public Policy Center, including: political science, economics, public administration, urban and regional planning, peace studies and conflict resolution.

Related Courses

- PPC 301 Governing, Politics, and Public Policy (3)
- PPC 330 Survey of Public Policy and Analysis (3)*
- PPC 695 Topics in Public Policy (3)*
  - (1) Introduction to Public Policy and Analysis*
- POLS 670 Introduction to Public Policy (3)
- PLAN 603 Economic Analysis for Urban Planning and Policy (3)

*Taught online

For more information

Please visit our website at www.publicpolicycenter.hawaii.edu or call Susan Chandler at (808) 956-4237 or email her at chandler@hawaii.edu.

Religion

College of Arts and Humanities
Sakamaki A-311
2530 Dole Street
Honolulu, HI 96822
Tel: (808) 956-8299
Fax: (808) 956-9894
Web: www.hawaii.edu/religion/

Faculty

* M. Mohr, PhD (Chair)—Japanese and Asian religions
* H. J. Baroni, PhD—Japanese and East Asian religions, Buddhism in America
* M. A. Brown, PhD—Hawaiian religion
* J. Frankel, PhD—Islam, Confucianism, comparative religion, mysticism
* R. Lamb, PhD—South Asian religions, Asian monasticism
* J. Lyon, PhD—Christianity, Hebrew Bible, New Testament, history of religion in Hawai‘i
* L. A. Siegel, PhD—Indian religions

Cooperating Graduate Faculty

G. D. Panisnick, PhD—Western religions

Degrees Offered: Undergraduate Certificate in Islamic Studies, BA (including minor) in religion, MA in religion

The Academic Program

In keeping with the goals of UH Mānoa, the Department of Religion takes advantage of the state’s strong social and cultural ties with Asia and the Pacific and seeks to enhance those ties. Within this extraordinary multicultural milieu, the Department of Religion serves as a link between the academic community and the many Asian and Pacific religious communities that flourish in Hawai‘i. Most of the major religious traditions—Buddhism, Christianity, Confucianism, Hinduism, Islam, Judaism, Shinto, Taoism, as well as Hawaiian and Polynesian religions—are represented and make Hawai‘i an ideal site and context for a study of Asian and Pacific religious communities and activities.

The Department of Religion is dedicated to the cultivation of a humanistic understanding of a wide range of religious traditions, ritual practices, philosophical speculations, ethical imperatives, and institutional histories. Its investigative approach is interdisciplinary and intercultural.

Undergraduate Study

Bachelor’s Degree

Undergraduate education in religion includes survey courses in Western, Asian, and Pacific religions. There are also thematic courses dealing with such issues as sexuality and death, politics and ethics, and the relationship between religion and other disciplines, such as anthropology, medicine, political science, and sociology.

* Graduate Faculty
Requirements

Students must complete 30 credit hours in religion, including at least 18 credit hours in 300- and 400-level courses. A minimum 2.5 GPA in religion courses must be maintained for graduation. Required course: REL 300.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Minor

Requirements

Students must complete 15 credit hours at the 300 level and above. Required course: REL 300.

Undergraduate Certificate in Islamic Studies

The purpose of this certificate is to increase understanding of Islam as a world religion through critical analysis of primary and secondary materials, to foster knowledge about the complexity among Islamic societies and their diverse cultural expressions, and to explore the role of Islam and Muslims in present and past world affairs.

This certificate is housed within the College of Arts and Humanities. The participating departments are Art and Art History, History, Philosophy, and Religion. Minimum prerequisites for acceptance into the program for undergraduates are sophomore or higher standing with a minimum GPA of 2.5 and the completion of at least one introductory course within one of the four participating departments with a grade of B or better.

A more complete description and the requirements are described under the Department of Philosophy.

Graduate Study

Master’s Degree

The department has developed two graduate program plans leading to the MA degree: a thesis-based MA program (Plan A) and a non-thesis track (Plan B). Both Plans A and B are two-year programs.

Admission Requirements

Applicants to the MA program in religion must hold a bachelor’s degree from an accredited U.S. college, university, or its equivalent from a recognized foreign institution of higher learning. Applicants should include in the Statement of Objectives an explanation of how their academic background has prepared them for study in the religion MA program.

Plan A

The thesis program provides students with an opportunity for graduate study in Asian or Polynesian religions. 30 credits are required.

Advancement to Candidacy: Candidacy may be granted after the first semester after completing 9 graduate credits plus REL 600 with a GPA of 3.0 or better (total 12 credits) and the language requirement.

Required courses (9 credits)

- REL 600 History and Theory of the Study of Religion (3)
- REL 700 Thesis Research (3, 3)

Area requirements (9 credits minimum)

Students must take at least three 600-level courses in their area of specialization (Asian or Polynesian).

Electives

Electives consist of any Religion course (400 level and above, excluding 499), other than those that fulfill program and area requirements. Two complementary graduate courses (3 credits each) from other disciplines may be accepted at the discretion of the thesis advisor and graduate chair. No more than two 400-level courses may be used to satisfy this requirement.

Language

To achieve a mastery of language at the second-year level, students are required to complete two years of a language appropriate to their field of specialization (e.g., Chinese, Hawaiian, Hindi, Japanese, Sanskrit, Samoan, Tahitian, or another Asian or Polynesian language approved by the area advisor) with a minimum B-minus grade in the fourth semester of class.

This language requirement will be waived for students demonstrating language proficiency by an equivalency exam. These exams will be set by the student’s advisor and assessed by two faculty readers (one from the Department of Religion and one from the department in which the language is taught).

Language courses will not count towards the 30 credits required for an MA in religion.

Thesis (REL 700)

A maximum of 3 credits per semester for a total of 6 credits of REL 700, usually taken over two semesters is required. Students must be admitted to candidacy and must complete 12 credits before they can register for REL 700.

Completion of an original thesis, demonstrating a mastery of advanced research, analytic, and discursive skills, is required of all students in Plan A.

Each candidate must form a committee of three members of the graduate faculty, one of whom is from outside the department. Faculty reserve the right not to serve on a thesis committee.

After submission of a completed thesis to the committee for its consideration, the candidate must be present for the final oral examination on the subject of the thesis.

After all revisions as determined by the thesis committee have been incorporated and the thesis is in final form, the majority of the committee, including the chairperson, passes the student for the master’s degree. A candidate who fails may be re-examined once, provided it is done within one calendar year of the initial examination.

After a candidate has taken 6 credits of 700, the candidate must register for 1 credit of 700 in subsequent semesters and in the semester of graduation.

One bound copy of the approved thesis shall go on file in the department office and must be submitted to the department office at the same time the final thesis is deposited with the Office of Graduate Education.

Plan B

The Plan B degree program provides students with a non-thesis opportunity for graduate research and study in Asian or Polynesian religions. Plan B is designed for students who wish to articulate the results of their research in innovative ways using various available technologies. In place of a thesis, the culminating requirement is a Plan B Project, an original research project as described below. 30 credits are required.

Master’s Plan B Procedures

1. Preliminary conference with the graduate chair for the purpose of determining an advisor, proposed courses to fulfill the requirements, and the foreign language for the degree.
2. Candidacy for Plan B students requires a memo from the graduate chair indicating that 12 graduate credits, including REL 600, have been taken with a GPA of 3.0 or better and that the student has prepared a preliminary proposal and secured the support of two graduate faculty members from the Department of Religion to serve on their committee. Committee members will have the responsibility of approving, supervising, and evaluating the project as completed in REL 688 (Plan B Research).

3. Completion of a research project demonstrating a critical understanding of religion in a particular area of Asia or the Pacific, by two faculty readers (one from the religion department and another Asian or Polynesian language approved by the area advisor) with a minimum B-minus grade in the fourth semester of class. This language requirement will be waived for students demonstrating language proficiency by an equivalency exam. These exams will be set by the student’s advisor and assessed by two faculty readers (one from the religion department and one from the department in which the language is taught). Language courses will not count toward the 30 credits required for an MA in religion.

Required courses (6 credits)
- REL 600 History and Theory of the Study of Religion (3)
- REL 688 Plan B Research

Area requirements (9 credits)
Students must take at least three 600 level courses in a particular region of Asian or in Polynesian religions.

Electives (15 credits)
Electives consist of any religion course (400 level and above, excluding 499), other than those that fulfill program and area requirements. Two complementary graduate courses (3 credits each) from other disciplines may be accepted at the discretion of the advisor and graduate chair. No more than two 400-level courses may be used to satisfy this requirement.

Language
To achieve mastery of a language at the second-year level, students are required to complete two years of a language appropriate to their area of specialization (e.g., Chinese, Hawaiian, Hindi, Japanese, Sanskrit, Samoan, Tahitian, or another Asian or Polynesian language approved by the area advisor) with a minimum B-minus grade in the fourth semester of class.

Second Language Studies
College of Languages, Linguistics and Literature
Moore 570
1890 East-West Road
Honolulu, HI 96822
Tel: (808) 956-9010
Fax: (808) 956-2802
Web: www.hawaii.edu/lls

Faculty
*G. Crookes, PhD (Chair)—classroom teaching, classroom-centered research, materials and syllabus design
*G. Kasper, Dr. phil. (Graduate Chair)—language and social interaction, qualitative research
*R. Bley-Vroman, PhD—English syntax, second-language analysis, formal models of language acquisition
*J. D. Brown, PhD—language testing, research methods, curriculum design
*K. Davis, PhD—qualitative research methods, language policy and planning, literacy, bilingual education
*R. Day, PhD—teacher education, teaching of reading, vocabulary, materials development, literature
*E. Gilliland, PhD—writing studies, adolescent literacy, teacher education, qualitative research methods, discourse analysis
*T. Grüter, PhD—morphosyntax and semantics, developmental psycholinguistics, language processing, bilingualism
*C. Higgins, PhD—macro- and micro-sociolinguistics, qualitative research methods, discourse analysis, code-switching
*T. Hudson, PhD—language testing, reading, methods and materials, English for specific purposes, research methods
*B. D. Schwartz, PhD—linguistic theory and second language acquisition, second language analysis, second language processing, child second language acquisition
*D. Zheng, PhD—cognition and instruction, second language technology and pedagogy, bilingual education, instructional media
*N. Ziegler, PhD—second language acquisition, interaction, corrective feedback, task-based language teaching, synchronous computer mediated communication, Maritime English (English as a lingua franca, English for specific purposes in the commercial shipping industry)

Cooperating Graduate Faculty
H. Cook, PhD—Japanese sociolinguistics, discourse analysis, language socialization and pragmatics
K. Kanno, PhD—Japanese SLA, pedagogical grammar, language analysis
K. Kondo-Brown, PhD—heritage language learning, assessment, Japanese language learning
W. O’Grady, PhD—syntactic, first and second language acquisition, Korean
K. Rehg, PhD—phonology, bilingual education, Micronesian linguistics
A. J. Schafer, PhD—sentence comprehension and production across languages (including Korean, Japanese, and Austronesian languages); sentence prosody; information structure; psycholinguistic approaches to language documentation and conservation

Affiliate Graduate Faculty
F. Bail, PhD—Human learning and development, instructional formats
J. M. Bilmes, PhD—cognitive anthropology, human communication, decision-making, conversation analysis, Southeast Asia

* Graduate Faculty
E. Hauser, PhD—conversation analysis
S. McKay, PhD—English as an international language, SL methods and materials, macro-sociolinguistics
H. T. Nguyen, PhD—interpersonal competence, classroom discourse, conversation analysis
J. Norris, PhD—language program evaluation
L. Ortega, PhD—second language acquisition
R. Schmidt, PhD—(Emeritus) second language acquisition

Degrees Offered: BA in second language studies, MA in second language studies, PhD in second language studies, Advanced Graduate Certificate in Second Language Studies

The Academic Program
The SLS department’s programs prepare students for professional and academic careers in second language and multilingual settings, including but not limited to language education. Through course work and independent research, students acquire a broad knowledge base and familiarity with a range of research approaches and an understanding of ethics and professionalism in second language studies.

Employment opportunities have expanded nationally and internationally to include various types of educational and occupational institutions. In addition to language education and administration at all levels, employment opportunities extend to such domains as publishing, test development for international agencies, and language training programs for businesses.

The department, whose MA program dates back to 1961, is regarded as one of the most prestigious second language programs worldwide. Offerings comprise a wide range of general and specialized courses. SLS faculty members are well respected nationally and internationally through their research, publications, and leadership roles at national and international levels. The department has excellent library resources. It attracts top-quality students and maintains a variety of services and activities that stimulates a high level of student satisfaction and collaboration, including post-graduation employment advice and assistance.

SLS faculty members (J. D. Brown, G. Kasper, and R. Schmidt) have served on the executive boards of the American Association for Applied Linguistics and the Teachers of English to Speakers of Other Languages International Association. Department faculty are also past and present editors of the international journals Applied Linguistics (G. Kasper) and Reading in a Foreign Language (R. Day, T. Hudson), and have been actively involved in the organizing boards of the Second Language Research Forum and the Pacific Second Language Research Forum.

Undergraduate Study

Bachelor’s Degree
The Bachelor of Arts degree program in second language studies provides students with a comprehensive understanding of a wide range of issues related to how second and foreign languages are learned, taught, and used in local and global contexts. This program, in accord with the values of SLS graduate degree programs, takes the broad view that plurilingual and pluricultural societies have greater success at communication in and across languages, which enables mutual understanding and appreciation, conflict resolution, and negotiation of values.

The program addresses theory, research, and practice, and helps prepare students to become second language specialists who understand the nature of second language learning and use in diverse circumstances, and are able to act upon related challenges that emerge in a variety of settings. The BA in SLS also serves as an excellent preparation for entry into a variety of language-related graduate programs.

Requirements
Students must complete 33 credit hours of upper division courses, including:
- 24 credit hours of required courses: SLS 302, 303, 408, 430, 441, 480(alpha), 485, and 490
- 9 credit hours of elective courses: 300-499 courses from SLS, or 300-499 courses from other departments (as approved by an SLS advisor)

For more information about the BA degree in SLS, see www.hawaii.edu/sls/ba/ and contact the department’s undergraduate coordinator. Newly declared majors should make appointments with the SLS coordinator as soon as possible.

Graduate Study
The department offers an MA degree in second language studies, an Advanced Graduate Certificate in second language studies, and a PhD degree in second language studies. The MA and PhD degree programs are recognized Western Interstate Commission for Higher Education (WICHE) regional graduate programs. Residents of Alaska, Arizona, California, Colorado, the Commonwealth of Northern Mariana Islands, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming are eligible, upon admission with a GPA of 3.50 or higher, to enroll at Hawai’i resident tuition rates. See the “Tuition, Fees, and Financial Aid” section of this Catalog for more information on WICHE programs.

Master’s Degree
The main goal of the Master of Arts degree program is to serve the needs of prospective and practicing teachers, administrators, and researchers in the area of second and foreign language studies. Attention is given to the areas of second and foreign language acquisition, applied psycholinguistics, second language use, second language research, bilingual education, curriculum development, and teacher education, among others.

The program emphasizes theory as well as practice. In addition to the courses dealing with approaches to language teaching, materials, and testing, core courses are concerned with the linguistic, psychological, and sociological aspects of language and language learning. The core courses, which are primarily theoretical, are designed to provide an essential foundation on which the more practically oriented courses can build.

The MA in SLS does not result in teaching certification. Contact the College of Education for information regarding State of Hawai’i teacher certification.

Entry into the MA program is possible in both the fall and spring semesters. The GRE is required for all MA in SLS applicants whose first language is English or who are exempt from taking the TOEFL or IELTS. Most applicants whose first language is not English are required to take the TOEFL or the IELTS.

Application materials are required for both the UH Mānoa Office of Graduate Education and for the Department of Second Language Studies. For details about how to apply, see: www.hawaii.edu/sls/graduate/ma/ma-admissions/.
Requirements

All students in the MA program, whether Plan A, Plan B, or Plan C, are expected to have experience in second or foreign language learning (two years of college study or equivalent). Students who have not had such experience before entering the program are required to take at least a semester of language study, which does not count toward the 36-credit MA.

Plan A (Thesis) Requirements
- Four core courses (12 credits): SLS 441, 600, 650, 660
- One core seminar (3 credits): SLS 730, 750, 760, or 775
- Five electives approved by the advisor (15 credits)
- SLS 700 thesis research (6 credits)

Plan B (Non-thesis) Requirements
- Four core courses (12 credits): SLS 441, 600, 650, 660
- One core seminar (3 credits): SLS 730, 750, 760, or 775
- Seven electives approved by the advisor (21 credits)
- Submission of an acceptable scholarly paper

Plan C Requirements
Plan C is an individually planned program for established language scholars who wish to pursue an additional degree. For admission requirements, contact the Graduate Chair.

Specialization

As an option, the 36-credit MA program allows students to concentrate in a particular area of specialization. Each specialization requires a distinct selection of four courses from among various electives, as well as a related core seminar. Five areas of specialization are available:
- Critical second language studies
- Language assessment, measurement, and program evaluation
- Language and social interaction
- Language education ("English" can be designated)
- Second language acquisition

For further information about these specializations and the MA program, see: www.hawaii.edu/cls/graduate/ma/.

Advanced Graduate Certificate

The Advanced Graduate Certificate program in second language studies provides advanced training to those who already have a graduate degree (master’s or doctorate) in applied linguistics, foreign languages, ESL, or related fields. The program is specifically aimed at those who wish to re-specialize or to update their training to include recent developments in the field. Applicants must have completed an MA or PhD degree in an appropriate field, or they must be a continuing student in an MA or PhD program in an appropriate field at UH Mānoa before entering the certificate program. Graduate students enrolled in other programs at UH Mānoa are permitted to apply for the certificate while they concurrently complete another graduate degree. For specific information and guidelines on the AGC application process, see: www.hawaii.edu/cls/graduate/agc/.

The course of study typically lasts about two semesters and includes 15 credits (five courses) and a research paper (scholarly paper) to be produced during the program. Transfer credits are not applicable toward graduate certificate requirements. However, up to six UH Mānoa PBU credits may be applied. Students who complete the graduate certificate in SLS will obtain knowledge and skills in second language studies with possibilities including second language analysis, learning, pedagogy, and use, in utilization of research findings, and application of research methods.

As a culminating activity in the program, students are required to submit a paper that demonstrates the student’s ability to conduct independent, high-quality scholarly research. This paper must be new research (i.e., different from prior graduate work) conducted under the supervision of the program’s faculty.

Doctoral Degree

The PhD program in second language studies at UH Mānoa was established in 1988. The graduate faculty of the PhD program comprises all members of the SLS faculty, as well as faculty members of the Departments of Anthropology, East Asian Languages and Literatures, and Linguistics.

The courses in the program are organized into four areas of specialization:
1. Second language analysis—Structural analysis of learners’ language development; comparison of native and nonnative languages; second language varieties; differences arising from social and geographical contexts; phonological, grammatical, and discourse properties; typological factors; putative universals.

2. Second language learning—Studies of the biological, psychological, social, and cultural factors in the language learning process; the role of universals; interlanguage; processes of comprehension and production.

3. Second language use—Studies of social functions of second and foreign languages; pidgins, creoles, and dialect variation; roles of social and geographical contexts; pragmatics; discourse analysis; cross-cultural and interethnic communication; sociopolitical factors; language policy and planning.

4. Second language pedagogy—Research into learners’ language needs (including immigrant needs); formulation of needs-based curriculum objectives and syllabi; task-based and content-based language teaching; computer-aided instruction; program administration; evaluation and language assessment; critical pedagogy.

The basic requirement for admission into the PhD program is the completion of an MA in second language studies, applied linguistics, or second or foreign language education. Applicants with graduate degrees in related disciplines such as anthropology, education, modern languages, linguistics, and psychology are also welcome.

Entry into the PhD program is possible in both the fall and spring semesters. The GRE is required for all PhD program applicants. Most applicants whose first language is not English are required to take the TOEFL or the IELTS. Additionally, those required to take the TOEFL or IELTS have the following minimum scores to work as a teaching graduate assistant (GA): 600 TOEFL PBT; 250 TOEFL CBT; 100 TOEFL iBT, with subtest scores 25 listening and 25 speaking; 7.0 IELTS.

Prospective PhD students are automatically considered for a graduate assistantship at the time of application. Each year, four graduate assistantships at the time of application. Each year, four graduate assistantships are offered to the four most qualified applicants to the PhD in SLS program, pending availability of funds

Application materials are required for both the UH Mānoa Office of Graduate Education and for the Department of Second Language Studies. For details about how to apply, go to: www.hawaii.edu/cls/graduate/phd/phd-admissions/.
Requirements

Students work closely with their advisors and doctoral committees in defining their individualized programs. In order to establish a common core of expertise among students, specific courses are designated according to the background of each student. The basic preparation expected as part of PhD students’ MA training is at least one graduate-level course in each of the four areas of specialization. Beyond basic preparation, each doctoral student’s program must include a minimum of two graduate-level courses in three of the four areas of specialization and a minimum of two graduate-level courses in research methods. At least two seminars (700-level) are required.

Doctoral candidates must pass a comprehensive examination before the dissertation, and a final oral examination defending the dissertation.

Students must also document and reflect on substantial, diverse learning experiences in two languages other than their first language. This requirement is fulfilled by submitting a 3- to 5-page reflective essay during the first two years of study and before advancement to candidacy. Examples of substantial and diverse language learning experience include the following:

- Attaining L2 competence for functioning successfully in an L2 academic context
- Completing a primary, secondary, or higher education degree in a language other than the first language
- Growing up with two or more languages
- Teaching a language (or in a language) other than the first language
- Engaging in research that involves the analysis of data in another language

For further information about the PhD program, see: www.hawaii.edu/sls/graduate/phd/.

English Language Institute
College of Languages, Linguistics and Literature
Moore 570
1890 East-West Road
Honolulu, HI 96822
Tel: (808) 956-8479
Fax: (808) 956-2802
Email: uhmelil@hawaii.edu
Web: www.hawaii.edu/eli

The English Language Institute (ELI) is located in the Department of Second Language Studies. The ELI’s primary purpose is to provide English instruction for international and immigrant students or others, whose native language is not English, to facilitate their academic studies at UH Mānoa. The ELI program is only for students who have been admitted to UH Mānoa.

All potential ELI students admitted to UH Mānoa are referred to ELI to determine if they must take the ELI placement test before registering for UH Mānoa courses. If a student does not fulfill this obligation, ELI will place a hold on the student’s registration. The ELI placement test is generally offered two or three times at the beginning of each semester. Information about the testing dates and times can be found on the ELI website or the UH Mānoa registration homepage. Students can sign up for ELI placement tests online or in person at Moore 570 prior to the testing date.

ELI Exemptions

Students are exempt from taking the ELI placement test if they meet any of the following conditions: (a) the student is a native speaker of English; (b) the student has received a score of 100 or better on the internet-based TOEFL, a score of 250 or better on the computer-based TOEFL, or a score of 600 or better on the paper-based TOEFL (taken within the last 2 years); (c) the student has received a score of 7.0 or better on the IELTS (taken within the last 2 years); (d) the student has received a score of 460 or better on the verbal section of the GRE; (e) the student has received a score of 540 or better on the verbal section of the SAT if taken before March 2005, or a score of 540 or better on the critical reading section if taken in March 2005 or thereafter; (f) the student has received a combined score of 48 on the reading and English sections of the ACT and neither subscore (reading or English sections) is lower than 21; (g) graduate students who have received within the last five years a bachelor’s degree or an advanced degree from an accredited/recognized college in the U.S., United Kingdom, Canada (except Quebec), New Zealand, Singapore, Australia, or Ireland; (h) the student has an Associate of Arts degree from a community college within the UH System; (i) the student has obtained the equivalent of 60 transferable semester credits with a GPA of 2.0 or better, all earned in classroom settings at regionally accredited colleges or universities in the U.S., from colleges or universities whose academic standing is recognized by UH Mānoa and where English is the primary language of instruction; or (j) the student has completed six years of full-time schooling with English as the medium of instruction at a middle school, high school, college, or university in Australia, Canada (except Quebec), Ireland, New Zealand, the United Kingdom, or the U.S. Documentation of all six years is required.

These exemption criteria apply at the time students are admitted to UH Mānoa. An exemption on the basis of one of these criteria may be automatically granted by UH Mānoa, or it may be granted by the ELI office if the student can provide the appropriate documentation, including official transcripts or test results.

Assignment to ELI Courses

All other potential ELI students who have been admitted to UH Mānoa must take the ELI placement test before they can register for courses. Placement into ELI courses or exemption from ELI courses will be based on the test results. Students pursuing online degrees should contact the ELI director for further information. All ELI courses must be completed within the first year of study at UH Mānoa. Students who do not complete ELI course work as planned may not be allowed to graduate.

Relationship to Other Course Work

ELI courses are equivalent to 3-credit courses when considering a student’s course load. Students placed into ELI courses need to reduce the number of additional credit courses they can take and should expect to make slower progress in their regular UH Mānoa studies. This is an especially important factor in some graduate programs and should be considered carefully by students whose time or financial support is limited.
Hawai‘i English Language Program

College of Languages, Linguistics and Literature
Makai Campus 13-1
1395 Lower Campus Road
Honolulu, HI 96822
Tel: (808) 956-6636
Fax: (808) 956-5100
Email: eslhelp@hawaii.edu
Web: manoa.hawaii.edu/eslhelp

The Hawai‘i English Language Program (HELP), located in the Department of SLS, is a noncredit, intensive academic English skills program for students who wish to improve their English language proficiency for academic, business, or professional pursuits. HELP offers a pathway into the UH System for students who need to sharpen their academic English skills before starting credit course work at UH Mānoa or in another American college or university. HELP students who complete two terms at the highest level may receive conditional admission to UH Mānoa without a TOEFL score, after which they may take the ELL placement exam to see if further English preparation is needed. HELP has four levels to meet the needs of students from beginning to advanced.

HELP is also an ESL teacher training center and offers customized teacher training workshops to groups, as well as the globally recognized Certificate in English Language Teaching to Adults (CELTA) certification course.

Admission to HELP is open to individuals 17 or older who have completed high school or its equivalent. There are four 8-week sessions each year beginning in January, March, August, and October. HELP also offers 6-week summer programs in May and July.

See manoa.hawaii.edu/eslhelp/ for more information.

Sociology

College of Social Sciences
Saunders Hall 247
2424 Maile Way
Honolulu, HI 96822
Tel: (808) 956-7693
Fax: (808) 956-3707
Email: socdept@hawaii.edu
Web: www.sociology.hawaii.edu

Faculty
*D. W. Wood, PhD (Chair)—medical sociology, evaluation research, quantitative methodology, substance abuse prevention and treatment
*K. Mossakowski, PhD (Graduate Chair)—medical sociology, stress and mental health, life course and aging, social psychology, social epidemiology, race/ethnicity
*S. K. Chai, PhD—social theory, economic development, comparative sociology (Asia)
*K. Irwin, PhD—criminology, deviance and social control, qualitative methodology
*D. T. Johnson, PhD—criminal justice, comparative sociology (Japan), law and society
B. Joyce, PhD—undergraduate advisor
*V. K. Kanaua, PhD—multicultural issues, gender violence, native Hawaiian health, HIV

*H. Koo, PhD—comparative sociology (Korea), social stratification, development
*Y. J. Lee, PhD—quantitative methodology, demography, gender stratification, aging and health
*N. Sharma, PhD—race/ethnic/minority relations, theory/migration and immigration
*P. G. Steinhoff, PhD—collective behavior/social movements, comparative sociology (Japan), political sociology
*L. Uperesa, PhD—race and race relations, global anthropology, sociology and ethnic studies
*W. Zhang, PhD—medical sociology, social epidemiology, research methods

Cooperating Graduate Faculty
M. Brown—UH Hilo criminology, gender and women’s issues
M. Chesney-Lind, PhD—criminology, gender and women’s issues
J. Chinen, PhD—women and work, race, class and gender, race and ethnic relations
M. Delucchi, PhD—sociology of education
A. Kimura, PhD—women’s studies

Affiliate Graduate Faculty
D. Chandler, PhD—sociology; conflict resolution
S. Kanaiaupuni, PhD—demography, education, Native Hawaiians
A. Pobutsky, PhD—medical sociology, epidemiology
A. B. Robillard, PhD—ethnomethodology, medical sociology, comparative disability (Pacific Islands)

Adjunct Faculty
P. Adler, PhD—conflict management, community studies
J. Dannenberg, JD—law and society
J. Manis, PhD—social psychology, social problems

Degrees Offered: BA (including minor) in sociology; MA in sociology; PhD in sociology

The Academic Program

Sociology (SOC) is the study of how society organizes itself and how various groups interact with each other and the consequences of these processes. Sociology’s subject matter includes marriage and family patterns, race and ethnic relations, demography, social change, class structure, formal organizations including bureaucracies, value systems, conflict, deviant behavior, medical sociology and aging, criminology, and the people and institutions of other societies.

Sociology uses a range of research techniques for studying social phenomena that can be applied to many areas, whether one is interested in the incidence of crime, client satisfaction, policy evaluations, or demographic trends. In addition to preparing people as professional sociologists in academic settings, sociology is an excellent background for careers in law, social work, public health, urban planning, public administration, and other fields. The graduate program provides students with a foundation in basic theory and methods of research. In addition, faculty and advanced graduate students are involved in several broad areas of sociological interest: the comparative sociology of Asia; the study of crime, law, deviance, and human services in the U.S.; aging and medical sociology; and race and ethnic relations.
Undergraduate Study

Bachelor’s Degree

Requirements
Students must complete a prerequisite introductory sociology course and 30 credit hours of upper division courses, including:
- three 400-level courses
- SOC 300 and 321
- one course from SOC 475, 476, 478, or SOCS 225 (Note: SOCS 225 is a lower division course and cannot be counted toward required upper division credit hours)

Consult the department for graduate and career opportunities.
For further information on the Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Minor

Requirements
Students must complete a prerequisite introductory-level sociology course and 15 credit hours, including:
- SOC 300
- One 400-level course
- Three other upper division sociology courses
- SOC 100 or any 200-level course is a prerequisite for all 300-level courses; SOC 300 is a prerequisite for all 400-level courses
- To fulfill major or minor requirements, courses must be passed with a grade of C (not C-) or better

Graduate Study

Two programs of graduate study in sociology are offered: a PhD program, intended to provide a professional basis for research and university teaching, and an MA program, designed to offer a general sociology curriculum and specialized areas of study relevant to career lines other than university scholarship. The following are brief descriptions and do not list all aspects of procedures and requirements; the department provides a complete statement of its graduate degree program on its website at www.sociology.hawaii.edu. All requirements specified by the Graduate Education and general university regulations also apply.

Applicants for graduate study in the department must specify whether they wish to enter the MA or PhD program. University transcripts, a Statement of Objectives, letters of recommendation, and GRE General Test scores are required of all applicants. The TOEFL or IELTS test is required for applicants who are not native speakers of English. A sample of written work is also required of applicants to the PhD program and recommended for applicants to the MA program. An undergraduate major in sociology is not required for admission, but makeup course work may be required in some cases. Applications will be accepted for either fall term or spring term admission. The application deadline for admission are January 15 (international students) and February 1 (domestic students) for the fall semester and August 1 (international) and September 1 (domestic) for the spring semester. Please see the department website for more information and links to appropriate graduate education pages.

Master’s Degree

The department offers an MA Plan A (thesis) program.

Plan A (Thesis) Requirements
The MA curriculum in sociology (Plan A) should prepare the student for positions involving expertise in social research. In addition, preparatory training is provided to those who are thinking of aspiring to a doctoral degree, but feel they need more preparation. However, an MA candidate cannot assume that satisfactory completion of this curriculum will lead to placement in the department’s PhD program.

The Plan A program aims to provide the student with a firm foundation in sociological theory, methods and statistics, as well as their application to the study of various substantive aspects of society.

A minimum of 30 credit hours of sociology-related course work is required for this program, as well as the successful completion of an MA thesis. All candidates are required to take at least one course each in the core areas of sociological theory, research methodology, and social statistics at the 400 level or higher, as well as five substantive courses, of which four must be at the 600 level or higher. In addition, students must take 6 credits of Research (SOC 700). The thesis is a substantial research project that shows a student’s ability to produce original substantive and intellectual work. All courses credited toward the 30 credit hour minimum required for the MA degree must be passed with a grade of B or better.

The first semester’s work is planned in consultation with the graduate chair and a temporary advisor appointed by the graduate chair. During the first semester, under the guidance of the temporary advisor, the student prepares a statement outlining a study plan that reflects his or her special interests and meets the credit requirements of the program. By the end of the second semester, the student should form a thesis committee of three or more faculty members, generally drawn primarily from the department.

The thesis committee assists the student in deciding upon a thesis topic. The student then writes a thesis proposal, which must be approved by the committee. Under the supervision of the committee, the student carries out the proposed research and writes the MA thesis. When the committee feels the student is ready, the student submits the final draft of the thesis, and the committee conducts a final oral examination. Both the oral examination and the written paper must meet the committee’s approval for an MA to be awarded.

Plan B (Non-thesis) Requirements
A Plan B (non-thesis) MA is also offered only in special circumstances. Students are only admitted to the Plan A MA program.

Doctoral Degree
This is an academically-oriented program. It is designed to provide the student with a firm foundation in sociological theory, methods, and research so the student is prepared to engage in professional research and university teaching.

The PhD program is designed to give the student systematic exposure to sociological theories, methods, and statistics, as well as their application to a number of substantive areas of society. It also provides the opportunity to develop special, high-level competence within an area of research, and the training to publish and present this research in professional settings.
The first phase of the PhD program provides basic training in theory, methods, and research. The course requirement in this phase is to complete five required courses in theory, methods, and statistics, as well as 15 additional course credits consisting of substantive courses and up to three credits of SOC 699. All courses that count towards PhD requirements must be at the 600 level or higher and passed with a grade of B or above. The minimum total number of course credits necessary for graduation is 33, but most PhD students take more than the minimum in order to gain adequate knowledge. Completing non-course requirements (QR, comprehensive, dissertation) generally takes more time than course requirements. Please consult the department website for more specifics regarding each of the stages in the PhD degree.

By the third semester, the student should form a guidance committee consisting of at least three faculty members, typically drawn primarily from within the department. By approximately the fourth semester, the student submits two of their best course papers for their qualifying review. The papers are judged by a specially constituted qualifying review panel. The qualifying review must be passed before proceeding onto Phase II of the PhD program.

The second phase provides advanced training in areas of concentration and dissertation research. The course requirement in this phase is to take three additional credits of substantive courses at the 600 level or above. In addition, the student is required to take a written and oral comprehensive examination on two selected areas of concentration, write a dissertation proposal, perform the approved dissertation research, finish writing and orally defend a dissertation.

Early in the second phase, the student must organize a dissertation committee consisting of at least five members of graduate faculty, including the official university representative from the Graduate Education’s list of eligible university representatives for sociology, in accordance with the Graduate Education policies.

Preferably by the fifth semester, all PhD students must take a comprehensive examination from the dissertation committee. The written examination covers two broadly defined research areas, as determined by the student and the dissertation committee. The student develops a bibliography for each area, and the dissertation committee makes up questions from each. After the student has taken the written examination, the dissertation committee evaluates the results and proceeds to hold a closed oral examination to determine whether or not the student is prepared to undertake dissertation research.

Following successful completion of the comprehensive examination, the student prepares a dissertation proposal. This proposal describes the theoretical basis and the research strategy to be employed in the study of the dissertation problem. When it has been successfully defended before the doctoral committee, the student proceeds to the research and writing phase of the dissertation. The dissertation should represent a major original scholarly contribution to the field of sociology suitable for publication in the form of a monograph book. A PhD is given only after completion of the dissertation text and oral defense to the satisfaction of the dissertation committee.

Theatre and Dance
College of Arts and Humanities
Kennedy Theatre 115
1770 East-West Road
Honolulu, HI 96822
Tel: (808) 956-7677
Fax: (808) 956-4234
Web: www.hawaii.edu/theatre

Faculty
* P. Mitri, MFA (Chair)—acting, voice, movement
* G. Lizenbery, BFA (Associate Chair, Director of Dance)—modern dance, kinesiology, movement analysis
* E. Wichmann-Walczak, PhD (Associate Chair, Director of Theatre)—Asian theatre
* P. Gaither Adams, MFA—modern dance, choreography
* T. H. Baker, MFA—Hawaiian theatre, playwriting
* M. Branner, MFA—theatre for young audiences
* E. Fisher, DAD—modern techniques, dance history, choreography
* J. Iezzi, PhD—Asian theatre
* K. Miller, PhD—dance ethnography, visual media for dance, research
* L. O'Malley, PhD—theatre history, dramatic literature
* K. Pauka, PhD—Asian theatre
* A. Schiﬀner, MFA—creative dance and drama, pedagogy; dance/theatre teaching internships, research, theory
* B. Shevelenko, MFA—lighting, sound, special effects, projections
* C. Vasek, MFA—costume design
* M. Wessendorf, PhD—dramatic literature, theory

Affiliate Graduate Faculty
M. Cristofori, MA, MBA—theory and dance history
H. Glass, MA—improvisation, choreography
P. Leong, MA—Asian theatre, movement
M. Wong, MA—modern dance, choreography

Degrees Offered: BA (including minor) in dance, BA (including minor) in theatre, BFA in dance, MA in dance, MA in theatre, MFA in dance, MFA in theatre, PhD in theatre

The Academic Program
The Department of Theatre (THEA) and Dance (DNCE) is comprised of two separate but related disciplines. Theatre includes the study of dramatic literature and theory; acting and directing; stage, costume, and lighting design; stagecraft; playwriting; Asian theatre, Hawaiian theatre, and TYA (Theatre for Young Audiences), and performance studies. Imaginative and creative individuals interested in the disciplined, practical application of classroom theory are suitable candidates as theatre majors. Teaching and professional stage, film, and television work are typical professions of theatre majors, but the analytical and practical skills, discipline and self-confidence, creativity, problem solving, and ability to work toward common production goals are applicable to a wide variety of industries and professions. Other ﬁelds known to actively recruit employees with a theatre degree include: advertising, animation, architecture, arts administration, business administration, design for public spaces, fashion, graphic design, human-computer interface design (HCI), landscaping, multimedia marketing, non-proﬁt management, public relations, themed entertainment, urban design and planning, and video game design and performance. The theatre major will beneﬁt

* Graduate Faculty
from a comprehensive curriculum that includes the world’s most noted Asian theatre program, a nationally respected TYA program, and our Hawaiian theatre offerings.

Dance is the art of human motion. It encompasses the study of human movement as it relates to the physical sciences, music, theatre performance and production, history, cultural context, education, visual design, and human expression. Dance majors find careers in the areas of performance, choreography, teaching, arts administration, production, history and criticism, and research. UH Mānoa’s dance program offers comprehensive theory courses and a wide variety of dance techniques and styles. The program is considered unique with its offerings in dance culture and performance studies and Asian and Pacific dance.

Affiliations
The department belongs to the Hawai‘i State Theatre Council, is an institutional member of the U.S. Institute for Theatre Technology, and participates in the Kennedy Center American College Theatre Festival. The Asian theatre program is affiliated with the Association for Asian Performance.

The dance program is affiliated with the American College Dance Festival Association and the Council of Dance Administrators.

Advising
After being admitted as majors in the theatre program, undergraduates must consult each semester with the theatre undergraduate advisor. Each theatre major also chooses a faculty mentor to supervise their progress and help in preparation of graduation portfolio. Newly admitted theatre graduate students should consult for the first one or two semesters with the director of graduate studies in theatre for initial advising, after which each graduate student is expected to select from the graduate faculty a permanent advisor well-versed in the area of the student’s concentration.

In dance, undergraduate majors must consult with the dance undergraduate advisor every semester. Graduate students must consult with the director of graduate studies in dance each semester.

Undergraduate Study

BA in Theatre
This degree is designed for students with a broad interest in theatre and allows maximum flexibility to satisfy requirements in the greatest areas of interest. Incoming students may declare a BA major in Theatre on their university application.

Students must complete 42 credit hours, determined in consultation with an advisor and based on the student’s desired focus within dance, such as teaching, choreography, dance culture and performance studies, or technical theatre production.

Course Requirements
- DNCE 151, 255, 260, 360 or 361, 370 or 490, 452, or 453
- THEA 200C, 200D, or 200E
- 12 credits of dance technique at the 200 level or above, including:
  - 3 credits in ballet
  - 3 credits in modern dance
  - 3 credits from two different Asian/Pacific dance forms and at least one of these in Asian dance
- 11 credits of focus electives to be selected from:

Other Requirements
BA Dance students are required to participate in at least one (1) UH dance production per year (e.g., student dance concerts, main stage dance concerts, as performers or crew members). BA majors are required to attend the annual end-of-year assessment class. BA majors are required to register for and attend at least one technique class per semester.

Graduation requirements include the submission of a portfolio of student work, assessment essay, exit interview, and completion of a survey.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

BFA in Dance
This program is designed for students who wish to pursue professional careers as dancers, teachers, and/or choreographers. Admission to the program is by audition held annually, usually in April. Incoming students may declare a BA major in Dance on their university application, then audition for the BFA degree during spring semester of their first year at UH Mānoa, if interested in the BFA degree program.

Course Requirements
Students must complete 62 credit hours, including:
- DNCE 151, 250, 360, 361, 362, 370, 371, 372, 452, 453, 495
- 1 credit hour of DNCE 495
For the MA Plan A, the candidate writes a thesis in Asian or Western theatre (history, theory, or dramatic literature), or in Performance Studies. For the MA Plan B, a generalist degree, the candidate takes additional advanced course work in lieu of writing a thesis. The MFA Plan B emphasizes creative or performance work in seven concentrations: acting, directing, design, and playwriting (each of these four may include Western, Asian, Hawaiian, and TYA), Asian performance, Hawaiian Theatre, and TYA.

Applicants must present an adequate undergraduate background and submit three letters of recommendation. The department expects that all incoming graduate students will have taken at least two courses in dramatic literature or theatre history, and one course in each of the following three areas: acting, directing, and design or technical theatre. If such courses have not been taken, they will be made up as undergraduate deficiencies while in residence for the master’s program and will not count toward the credit accumulation for the master’s degree. The TOEFL minimum score for foreign students is 500/61 (paper/internet) or IELTS overall band test result of 6.00 (600/100 for TOEFL and 7.0 for IELTS for Graduate Assistantship applicants). Applicants for the MA Plan A degree are also expected to submit a major paper; those seeking the MFA degree should present appropriate supplementary materials such as portfolios, video of acting audition material or material directed, or play scripts.

Application deadline for the fall semester is August 15. Spring semester application deadline is January 15. Upon the successful completion of 12 graduate credit hours within the department, the elimination of any undergraduate deficiencies, and (for MFA students) the presentation of an acceptable qualifying creative project, the student may be admitted to candidacy.

Students pursuing an MA in theatre develop, with an advisor, a program appropriate for their interests (minimum of 39 credit hours). The program must include 3 credit hours in each of the following areas: research methods (THEA 600); practicum in teaching (THEA 692); Asian theatre theory/history; Western theatre theory/history; and graduate theatre workshop (THEA 690), in which students receive 1 or 2 credit hours (depending upon extent of involvement) for working on a single Kennedy Theatre production. MA (Thesis) students take an additional 6 credit hours in theatre history or theory; 3 credit hours in a creative area; and must complete 6 credit hours of THEA 700 Thesis Research. MA (Non-Thesis) students take 3 credit hours each of TYA, creative drama, creative movement, or Western puppetry; Asian or Western acting or directing; design/technical theatre. A minimum of 18 credit hours must be in courses numbered 600 to 798; a minimum of 6 credit hours must be in Asian theatre (excluding 690); credit for 699 may not exceed 9 credit hours. Students pursuing an MA (Thesis) in Performance Studies develop, with an advisor, a program appropriate for their interests (minimum of 39 credit hours). The program must include 3 credit hours in each of the following areas: research methods (THEA 600 or DNCE 651); performance theory (THEA 615); seminar in performance studies (THEA/DNCE 617); theory (DNCE 653 or THEA 611); practicum in teaching (THEA 692); and a 3-credit course in a creative area. For all MA degrees, students will take a four-hour written comprehensive examination followed by an oral examination. MA (Thesis) students will have an additional oral comprehensive on the written thesis.
MFA students in all concentrations will take a minimum of 60 credit hours comprised of foundation courses (3 credits in research, 6-9 practicum in teaching); 39 credit hours of concentration courses, including enrollment in THEA 690 Graduate Theatre Workshop, in which students receive 1 or 2 credit hours (depending upon extent of involvement) for working on a single Kennedy Theatre production, and a single or a series of culminating projects, depending on concentration, for which the student will enroll in a total of 6 credit hours of THEA 695 Creative Project; and 6-9 credit hours of electives (total number depending on concentration). Of the total 60 credit hours, 30 must be at the 600 level or above. There is no written comprehensive examination for the MFA degree. However, the culminating project will include a written component that goes beyond the descriptive record of the project; the thesis committee, in conjunction with the candidate, will decide the nature, extent, and scope of the written component in each case. Additionally, each student will be given an oral examination on the culminating project.

To receive a list of specific recommended courses for meeting MA and MFA requirements, contact the departmental director of graduate studies. Students will select their elective courses in consultation with their advisors to reflect their special interests. Students with sufficient undergraduate preparation may take approved related graduate courses in other departments for credit toward their degree.

In consultation with an advisor, each MFA student develops a program appropriate for his or her interests within the specific requirements of one of the following concentrations:

Acting
For the concentration in acting, students must complete 3 credits in research; 9 credits in history and/or theory (minimum 3 credits in Asian and 3 credits in Western); 3 credits of THEA 692; 6 credits in voice; 6 credits in movement and/or dance; 12 credits in acting (minimum 3 credits in Asian and 3 credits in Western); 3 credits in additional creative/performance courses in above areas or in directing, design/technical theatre, or playwriting; 6 credits of THEA 690 Graduate Theatre Workshop (a minimum of 4 credits in acting and 1 credit in technical theatre; 1 credit may be in design, directing, playwriting, etc.), and 6 credits of THEA 695 Creative Project.

Design
For the concentration in design, students must complete 3 credits in research; 6 credits in history and/or theory, Asian and/or Western (minimum one 3 credit seminar); 3 credits of THEA 692; minimum 6 credits in intermediate design (400 level or above) and minimum 3 credits in advanced design (600 level), excluding other requirements below; 6 credits of THEA 657 Seminar in Design; 6 credits in creative/performance courses (400 level or above) (may include acting, directing, dance, playwriting, puppetry, or others as approved); 9 credits of THEA 690 Graduate Theatre Workshop (as approved by graduate committee chair); minimum 3 credits in Asian theatre (excluding THEA 690); 6 credits of THEA 695 Creative Project (including qualifying and final projects); and minimum 3 credits THEA 699 Directed Research.

Directing
For the concentration in directing, students must complete 3 credits in research; 9 credits in history and/or theory (minimum 3 credits in Asian and 3 credits in Western, 3 credits of which must be in theory); 3 credits of THEA 692; 3 credits in script analysis; 12 credits in graduate-level directing (minimum 3 credits in Asian and 3 credits in Western); 6 credits in design/technical theatre (in two areas—theatre design, costume, lighting, or set); 6 credits in creative/performance courses (in at least two areas—acting, choreography, dance, movement, music, playwriting, puppetry, or voice); 6 credits of THEA 690 Graduate Theatre Workshop (minimum 4 credits in directing including assistant directing and dramaturgy; 2 credits may include acting, design, playwriting, stage managing, etc.; minimum 2 credits in faculty-directed and 2 credits in student-directed shows); and 6 credits of THEA 695 Creative Project.

Playwriting
For the concentration in playwriting, students must complete 3 credits in research; 9 credits in history and/or theory (including 3 credits in Asian and 3 credits in Western, both at 600 level or above); 3 credits of THEA 692; 9 credits in playwriting (excluding THEA 318); 3 credits in script analysis; 3 credits in contemporary dramatic literature or theatre history; 6 credits in design/technical theatre (including 3 credits in lighting design); 3 credits in acting or directing (Asian or Western); 3 credits in movement, dance, or music (Asian or Western); 3 credits in puppetry or youth theatre; 3 credits of THEA 690 Graduate Theatre Workshop in dramaturgy; electives may include an additional 3 credits of THEA 690 (in acting, design, directing, playwriting, stage managing, etc.); and 6 credits of THEA 695 Creative Project.

Asian Performance
For the concentration in Asian performance, students must complete 3 credits in research; 9 credits in Asian theatre history/theory; 3 credits of THEA 692; 9 credits in Asian acting; 6 credits in Asian/multicultural directing; 3 credits in Asian/Pacific music and dance (minimum 1 credit in music and 1 credit in dance); 3 credits in design/technical theatre or playwriting; 6 credits of additional creative/performance courses in above areas or courses at the graduate level in Western acting or directing; 6 credits of THEA 690 Graduate Theatre Workshop (minimum 4 credits in Asian performance—acting, directing, or puppetry; 2 credits may include other courses in acting, design, directing, playwriting, stage managing, etc.; minimum 2 credits in faculty-directed and 2 credits in student-directed shows); and 6 credits of THEA 695 Creative Project.

Theatre for Young Audiences (TYA)
For the concentration in TYA, students must complete 3 credits in research; 9 credits in Asian and/or Western history and/or theory; 3 credits of THEA 692; 3 credits in creative drama/dance; 3 credits in theatre for young audiences; 3 credits in a teaching seminar; and 3 credits in a TYA seminar. Areas of specialty in the TYA concentration include acting, curriculum, directing, playwriting, and puppetry. Candidates must take 9 credits in any one of these areas along with minimum of 4 credits of Graduate Theatre Workshop (THEA 690) and 6 credits of Creative Project (THEA 695). An additional 12 credit hours of electives are available, although a minimum of 3 credits in Asian theatre (excluding THEA 690) are required.

Hawaiian Theatre
For the concentration in Hawaiian theatre, students must complete 3 credits in research; 3 credits in Hawaiian theatre history/theory; 3 credits in Pacific theatre history/theory; 3 additional credits in Western/Asian history/theory; 3 credits of
THEA 692; 3 credits in Hawaiian acting; 3 credits in Hawaiian puppetry/hula kiʻi; 3 credits in Hawaiian dance/hula; 3 credits in Hawaiian music/papa mele; 3 credits in design/technical theatre or playwriting; 3 credits in directing; 3 credits in youth theatre/puppetry; 3 credits of additional creative/performance courses in above areas or courses at the graduate level; 6 credits of THEA 690 Graduate Theatre Workshop; and 6 credits of THEA 695 Creative Project.

Master’s Degrees in Dance

The department’s graduate offerings in dance include the MA Plan A, MA Plan B, and the MFA. For admission to the master’s in dance program the GRE is not required; for foreign students the minimum TOEFL score is 600. The MA Plan A requires a written thesis. The MA Plan B requires a capstone project. MFA Plan A and MA Plan B require written comprehensive examinations and an oral defense of the examination. MA Plan A and MFA Plan A require an oral defense of the thesis. Intended dance candidates for all degrees must present an adequate undergraduate background in dance or a related field and submit three letters of recommendation. MFA candidates in dance must also submit a DVD sample of their choreography and performance. MA and MFA candidates must submit a sample of written work, such as a major paper. Application and transcripts should be sent to Graduate Education. All other materials should be sent to the graduate chair of dance. The application deadline for the fall semester is February 1 (January 15 for foreign applicants). The spring semester application deadline is September 1 (August 1 for foreign applicants). All materials should be sent directly to Graduate Education.

Upon the successful completion of 12 graduate credit hours within the department, the elimination of any undergraduate deficiencies, and (for MFA students) the presentation of an acceptable example of creative work (the qualifying dance) the student may be admitted to candidacy.

Dance Culture and Performance

The MA Plan A (dance culture and performance emphasis) requires a minimum of 36 credit hours, including DNCE 651, 652, 654, 655, or 661 and 700 (6 credit hours); 3 credit hours in 400 level Asian or Pacific performance courses; related area electives (6 credit hours); dance electives (3 credit hours); and general electives (3 credit hours). All electives must relate to thesis research. Language courses may be required if necessary for the student’s thesis research.

Dance Education

MA Plan B (dance education emphasis) requires a minimum of 36 credit hours, including DNCE 460 or 490, 651, 652, 691, 693, and 699; 9 credit hours from DNCE 321, 331, 421, 431; 3 credit hours in 300 to 400 level Asian or Pacific dance courses; and 6 credit hours of electives (3 credits at the 600 level).

Performance and Choreography

The MFA emphasizes performance and choreography. The MFA Plan A requires a minimum of 60 credit hours, including DNCE 421 or 431 (18 credit hours); DNCE 651, 652, 660, 661, 671; DNCE 672 (4 credit hours); DNCE 679 (2 credit hours); DNCE 691; DNCE 700 (6 credit hours); 2 credit hours in two different Asian or Pacific dance forms; 3 credit hours in 600 level dance electives; 6 credit hours in non-dance electives; and 1 credit hour in a general elective. MFA candidates must participate in two dance productions a year and register and attend a technique course each semester. It is expected that MFA candidates present choreography every semester.

MFA Plan A and MA Plan B require written comprehensive examinations and an oral defense of the examination. MA Plan A and MFA Plan A require an oral defense of the thesis.

Doctoral Degree

The Doctor of Philosophy degree given for scholarship in theatre history, theory, or criticism, not creative or artistic work, is offered in four areas: (a) Western theatre, (b) Asian theatre, (c) comparative Asian-Western theatre, and (d) performance studies. The PhD degree is not conferred for the acquisition of academic credits. It is granted only to candidates who demonstrate outstanding ability to do imaginative research and who present the results in a cogent dissertation.

A candidate for the degree is required to successfully complete three semesters of full-time residence, required courses (detailed below), other courses as deemed necessary by the student’s doctoral committee, examination in at least one non-English language, a written and oral comprehensive examination, and an oral defense of the student’s dissertation. The minimum residence requirement is three semesters of full-time work or the equivalent in credits at UH Mānoa. At the end of the second semester in residence, the graduate faculty will provide the candidate with an assessment of his or her progress to date.

Required courses in the Western area are THEA 600, THEA 692, plus three other 600 to 700 level courses from a departmental list of approved courses; required courses in the Asian area are THEA 692, 464, 465, and 466, as well as THEA 660 if the candidate’s dissertation requires field research; required courses in performance studies area are DNCE 651 or THEA 600; DNCE 615; DNCE/THEA 671; DNCE 653 or THEA 611; THEA 692; and 3 credits in a creative area. The curriculum of the comparative Asian-Western theatre area is determined by the student’s doctoral committee and must include THEA 692. A high level of accomplishment in the foreign language or languages appropriate to the proposed area of research (as determined by the advisor) is required, and language competency will be determined by examination.

Proficiency in teaching, whether lecturing before large classes or teaching smaller classes and leading discussions, is considered part of the training of all PhD candidates, who should demonstrate this proficiency by giving several such lectures and by serving as teaching assistants.

Written comprehensive examinations and two and a half hours of oral comprehensive examinations are required of all candidates before admission to candidacy. These are given after a student has completed the language requirement and before embarking on the dissertation. Written comprehensive exams shall consist of nine questions. The comprehensive includes questions on both Asian and Western drama and theatre and/or performance studies; further guidelines are available from the graduate advisor. The questions on the written portion are posed by the theatre and dance graduate faculty and members of the student’s committee. The doctoral committee consists of at least five graduate faculty, of whom a majority are from the Department of Theatre and Dance and at least one from another department. There is a seven-year time limit for PhD students to complete all requirements. For unusual circumstances, one extension may be granted.

Applicants for admission to the program must submit a detailed statement of the dissertation research they propose, three
letters from those acquainted with their academic work and a sample of their research (such as a seminar paper or a master’s thesis). The application deadline for admission in the fall semester is January 15 for U.S. and foreign applicants. Spring semester application deadline is August 15 for U.S. and foreign applicants. Requirements include a broad background in the humanities, a master’s degree in theatre or its equivalent, and competence in dramatic production.

Urban and Regional Planning
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Faculty
*D. Foley, PhD (Chair)—strategies of citizen participation, collaboration, nonprofit planning and management, community building, and community-based planning
*M. Coffman, PhD—environmental economics and planning, energy and climate change policy, resource management, general equilibrium modeling
*A. Das, PhD—community participation and empowerment, slum upgrading, decentralization and local governance, role of civil society in development
*P. Das, PhD—urban development, basic environmental services and governance in South Asia, design and planning of the built environment
*P. Flachsbart, PhD—planning methods and models, environmental planning, energy, land use planning, and urban transportation planning
*K. E. Kim, PhD—planning theory, planning methods, infrastructure planning, and alternative tourism planning
*R. Kwok, PhD—urbanization in China, East Asian development, spatial planning and urban design, development and regional economics
*L. Minerbi, Dott Arch, MUP—comparative urbanism, settlement planning, environmental planning, urban design, community development, planning with indigenous people, and Pacific Island planning
*S. Shen, PhD—geographical information systems; climate change adaptation and transportation planning
*D. Spirandelli, PhD—patterns of urban development, interface between terrestrial and marine ecosystems; community planning for integrated water management and coastal ecosystem services
*K. Umemoto, PhD—community planning, planning theory, social theory, social policy, community economic development, and race in ethnic relations

Cooperating Graduate Faculty
D. L. Callies, JD—land use management and control, intergovernmental relations
L. Cox, PhD—agricultural and resource economics
B. Hallet, PhD—congressional war powers, humanitarian intervention, terrorism
A. Kaufman, PhD—fundamentals of landscape design and planting design

Affiliate Graduate Faculty
J. Fox, PhD—land use, forest resources and management, geographical information systems and spatial information technology, South and Southeast Asia
G. Marten, PhD—population dynamics, ecosystem ecology, animal behavior, statistics, mathematical modeling, population genetics, human ecology, environmental management
S. Sakseha, PhD—human exposure assessment to air pollution, health impacts of energy use, air quality policy, public perceptions of environmental risks

Degree and Certificates Offered: MURP, PhD, Certificate in Planning Studies, Professional Certificate in Urban and Regional Planning and the Certificate in Planning Studies, Graduate Certificate in Disaster Management and Humanitarian Assistance

The Academic Program
Urban and regional planning (PLAN) is a dynamic field, that is still evolving. It emerged out of the convergence of two concerns: (1) the provision of urban infrastructure and (2) the initiation of social reform. While the underlying focus on community well-being continues, urban and regional planning today has broadened to include the development, implementation, and evaluation of a wide range of policies. Specifically, urban and regional planners, in both developing and developed countries, are concerned with the following:

1. The use of land in the city, the suburbs, and in rural areas, particularly with the transition from one use to another;
2. The adverse impacts of human activities on the environment and the possible mitigation of those impacts;
3. The design of the city and the surrounding region so as to facilitate activities in which people need and want to engage;
4. The organization of settlement systems and the location of human activities in urban and regional space;
5. Identification of social needs and the design and provision of services and facilities to meet those needs;
6. The distribution of resources and of benefits and costs among people;
7. The anticipation of change and its impact on how people do and can live;
8. Participation of citizens in planning processes that affect their future; and
9. The way that choices are made, decisions implemented, and actions evaluated, and the means by which those processes can be improved in urban and regional areas.

The Department of Urban and Regional Planning takes a multidisciplinary approach to planning education, recognizing in particular the important contributions to planning that can
be made by the social and natural sciences and by the architectural, public health, social work, and civil engineering professions; emphasizes extensive community involvement; engages in research that focuses on application of planning methodologies and implementation of planning endeavors; recognizes the close relationship between urban and regional planning and politics; acknowledges the difficulty of resolving the value differences that lie at the heart of most planning problems; and appreciates both the importance and the elusiveness of critical concepts, such as “the public interest,” to urban and regional planning.

UH Mānoa Master of Urban and Regional Planning (MURP) graduates, of whom there are about 466, hold planning and related positions in a variety of public agencies, academic institutions, nonprofit organizations, and private firms in Hawai‘i, on the continental U.S., and in the Asia Pacific region.

Accreditation
The department is accredited by the Planning Accreditation Board.

Graduate Study
The department offers a multidisciplinary approach to planning education. Students are provided with an opportunity to develop an individualized but integrated course of study drawn on this department and other departments and professional schools in UH Mānoa. Faculty and students engage in both funded and non-funded research and community service. The graduate curriculum focuses on theory, methodology, and practice in the following areas: community planning and social policy, environmental planning, urban and regional planning in Asia and the Pacific, and land use and infrastructure planning. Planning in the developing countries of Asia is emphasized.

For further information regarding the master’s degree or certificate programs, students should write to the department.

Master’s Degree
Students enter the MURP program from a variety of fields, usually the social sciences, architecture, engineering, public health, social work, and, increasingly, the natural sciences, but also from such diverse fields as philosophy, human development, and history. Students coming into the program are required to have an adequate background in descriptive and inferential statistics or to acquire this background prior to enrollment in PLAN 601.

Native speakers of English are required to take the GRE General Test. Others will be expected to have achieved adequate preparation in English as evaluated by the TOEFL. Each applicant should provide two letters of reference, preferably from individuals acquainted with the applicant academically or professionally. In addition, applicants must complete a self-assessment form and an Express information form (available from the department). An interview with a member of the faculty, if feasible, is highly recommended. The deadline for application for admission is March 1 for the fall semester and September 1 for the spring semester.

Standards for a graduate with a MURP degree include the following:
1. Knowledge of the structure and the growth and transformation processes of human settlements;
2. Knowledge of planning theory, history, and ethics, including an understanding of the social and political nature of planning;
3. Knowledge of general methods and models appropriate to urban and regional planning, including methods appropriate to a chosen area of concentration;
4. Knowledge of planning information systems and computer applications in planning;
5. Ability to structure and evaluate alternative plans and strategies for resolving or mitigating planning problems;
6. Ability to communicate, especially in written and oral form; and
7. Ability to plan with, rather than for, clients.

MURP graduates hold a variety of planning and related positions in public agencies, nonprofit organizations, and private firms. In Hawai‘i, these include the state Department of Business, Economic Development and Tourism; Department of Health; Land Use Commission; Legislative auditor; Department of Hawaiian Home Lands; House Majority Research Office; Hawai‘i Community Development Authority; Housing Finance and Development Corporation; Department of Public Safety; Department of Land and Natural Resources; U.S. Department of Housing and Urban Development; Honolulu City and County Departments of Planning and Permitting, Land Utilization, Housing and Community Development, and Parks and Recreation, Office of the Managing Director, Office of Council Services; Planning Departments of the counties of Hawai‘i, Kaua‘i, and Maui; Mediation Center of the Pacific; banks and trust companies; consulting firms; development corporations; real estate firms; university research and extension organizations; and community colleges.

On the continental U.S., graduates are city and county planners, program analysts in federal agencies (e.g., Office of Ocean and Coastal Management and Office of Management and Budget), and planning consultants. Other graduates include a planner for a nonprofit housing corporation, a lawyer-planner, and a law professor. Overseas positions include planners with regional planning, housing redevelopment and environmental agencies, the United Nations, private development and consulting firms, as well as faculty in university programs. Several MURP graduates are pursuing doctoral degrees in planning, geography, political science, and economics, while others are seeking law degrees.

Requirements
The MURP degree is a two-year professional program that requires a minimum of 42 credit hours. It is designed to equip students to fill professional planning and policy analysis roles in public agencies, private firms, and community groups, particularly in Hawai‘i, Asia, and the Pacific Basin. All students complete the core sequence (planning theory, planning methods, economic analysis for urban and regional planning, a 6-credit-hour practicum, and two of the following courses: PLAN 610, 620, 630, and 640). The remainder of the academic program, including a second methodology course, is individually designed with concentration in a specialized area of the student’s own choosing (with the consent of his or her advisor), provided adequate academic resources are available in the department and at UH Mānoa. Grades of B or better are required in PLAN 600, 601, 603, and 605, and an average of B or better must be earned in all courses counted toward the MURP degree. MURP students receiving a grade lower than a B will be allowed one additional opportunity to achieve the B or better in each core course.
Both Plan A (thesis) and Plan B (non-thesis) programs are available. All students are required to pass a final, which includes a successful defense of the thesis on the selected area of concentration, and to meet the program standards for graduation.

**Doctoral Degree**

The doctoral program provides training in advanced research in urban and regional planning. Graduates are expected to pursue academic appointments at institutions of higher education and to achieve higher levels of professional practice in the public and private sectors.

**Admission Requirements**

Admission to the PhD program requires a master’s degree in planning. In exceptional circumstances candidates with either an advanced research background or exceptional professional experience, but who do not have an MA degree may be admitted. Admission may be granted with the understanding that some background courses or examinations may be required. Consideration for admission requires a GPA of at least a 3.5 in previous graduate work. Applicants are also required to submit Graduate Record Examination (GRE) scores for verbal, math, and analytic sections. Non-native speakers of English are also required to submit the TOEFL; a score of 600 is required. Applicants are also expected to submit evidence of advanced work such as a research report or sole-authored plan.

**Degree Requirements**

Each PhD degree student is required to complete at least fifteen credits in advanced courses (in addition to any remedial courses designated at the time of admission):
- Advanced Methods (3 credits)
- Advanced Seminar in Planning (3 credits)

In addition to these two courses, PhD candidates are required to take six credits in an allied field (to be selected in consultation with the student’s advisor). Students are also required to take one three-credit course in research design/proposal writing.

Prior to starting the dissertation, PhD candidates will sit for a comprehensive examination in planning theory and planning methods. Students will be required to form a PhD committee drawn primarily, although not exclusively from the department, to guide the student through the qualifying examination and the dissertation research. Under the direction of its chair, the committee will devise a qualifying examination covering both core topics in urban and regional planning and the student’s substantive area of research. Upon successful completion of the qualifying examination, students will be required to present their dissertation proposal, to a department colloquium. When the student has successfully completed the examinations and presented the dissertation proposal the student will advance to candidacy. Each student is required to conduct original research and write and present a defense of a doctoral dissertation based on the dissertation proposal. The dissertation research will be guided by the student’s committee. Upon completion, the student will defend the dissertation before the committee. If successful, the candidate will be recommended for award of the PhD in Urban and Regional Planning by UH Mānoa.

**Professional Certificate in Urban and Regional Planning**

The Professional Certificate in Urban and Regional Planning is designed for practicing planners eligible for graduate admission who are not able to attend school for the two years required to earn a MURP degree.

Professional certificate candidates specialize in one of the following four fields: community planning and social policy, environmental planning, land use and infrastructure planning, or urban and regional planning in Asia and the Pacific.

Professional certificate candidates are required to earn 18 credit hours including PLAN 600, 601, and 603, or 605. Each candidate selects a field of interest in which he or she takes two courses including PLAN 610, 620, 630, or 640. The specific courses are selected in consultation with the candidate’s faculty advisor.

Applicants for the professional certificate program should apply to the Graduate Education as special non-degree students. Two letters of reference should be sent to the department from people who are familiar with the applicant’s academic or professional record. Applicants must have earned a BA, BS, or a professional degree; have maintained a minimum GPA of 3.0 in the four semesters prior to admission; and have had at least three years of professional practice prior to admission.

**Certificate in Planning Studies**

The Certificate in Planning Studies allows students pursuing a master’s or doctoral degree in another area to become acquainted with planning skills and activities. Students enrolled in graduate programs in architecture, economics, engineering, geography, political science, public health, social work, and sociology are among those eligible. Students are encouraged to use the certificate program to increase their competence in planning as it relates to their major area of study.

Certificate students are required to take five courses offered by the department and complete the requirements for a master’s degree in their area of study. The required courses are PLAN 600, 601 or 605, and 751. The remaining two courses are to be selected from among the following courses by the certificate student in consultation with the faculty member responsible for directing the planning studies certificate program: PLAN 601 or 605 (whichever was not taken as a required method course); 602 or 603; and one of 610, 620, 630, or 640, or one elective course.

Successful completion of the program leads to a graduate degree in the student’s chosen field and a Certificate in Planning Studies. Consideration for admission to the certificate program requires filing of an application form available from the department.

**Graduate Certificate in Disaster Management and Humanitarian Assistance (DMHA)**

UH Mānoa provides a logical location for an Asia Pacific disaster risk reduction research and institutional capacity-building program. The program responds to the compelling need to improve hazard and disaster mitigation and response in the face of increasingly frequent and severe disaster events. The Asia Pacific region suffers the greatest impact of disaster events worldwide, and Hawai‘i’s shares many of these same vulnerabilities. By interacting with hazard and disaster researchers at UH Mānoa and Hawai‘i’s existing dynamic community of disaster management organizations, students learn how to help build disaster resilient communities.
Women's Studies
College of Social Sciences
722 Saunders Hall
2424 Maile Way
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Tel: (808) 956-7464
Fax: (808) 956-9616
Web: www.womenstudies.hawaii.edu

Faculty
*M. Chesney-Lind, PhD (Chair)—criminology, sociology of gender
*M. Das Gupta, PhD—feminist theory and methods, immigration, race relations in the U.S.
*K. Ferguson, PhD—feminist theory and methods, political theory
*S. Hippenstele, PhD, JD—psychology, law, civil rights, dispute resolution
*A. Kimura, PhD—feminist perspectives on science and technology, food, health and environmental issues
*M. Koikari, PhD—sociology, Asia-Pacific studies
*A. Saraswati, PhD—feminist media and new media studies, race, globalization, and cultural studies of emotion

Affiliate Faculty
H. Aikau—political science
B. Andaya—Asian Studies
B. Aquino—political science
C. Bacchilega—English
C. Browne—social work
J. Brunson—anthropology
V. Dalmiya—philosophy
L. Despain—English
P. Flowers—political science
C. Franklin—English
M. Ghosh—librarian
J. Goldberg-Hiller—political science
N. Goodyear-Ka'opua—political science
M. Hara—English
K. Heye—political science
R. Hsu—English
K. Irwin—sociology
K. Kane—Center for Teaching Excellence
V. Kanuha—sociology

B. Keever—communications
V. Lanzona—history
N. Lewis—East-West Center and geography
L. Lyons—English
N. Mokuau—social work
K. Phillips—English
S. Rai—Study Abroad Program
K. Reynolds—Japanese
M. Romaniello—history
L. Santiago—Indo-Pacific languages and literatures
M. Sharma—Asian studies
N. Silva—political science
C. Sinavaiana—English
M. Stark—anthropology
P. Steinhoff—sociology
T. K. Tengan—ethnic studies, anthropology
H. Trask—Hawaiian studies
K. Umemoto—urban and regional planning
V. Wayne—English
C. Yano—anthropology
M. Yoshihara—American studies
A. Yap—Study Abroad Program
M. Yue—Chinese literature

Degree and Certificates Offered: Undergraduate Certificate in Women's Studies, BA in women's studies, Graduate Certificate in Advanced Women's Studies

The Academic Program
The Department of Women's Studies offers an interdisciplinary transnational feminist approach to the study of women and gender issues. The purpose of the department is to provide a rigorous and integrated academic experience for students interested in feminist research and teaching, giving them a coherent program of study in contemporary scholarship with special emphasis on Asia-Pacific and Hawai‘i. With a faculty trained in a variety of fields, the program investigates gender as it intersects with race, class, sexuality, and other vectors of power in shaping the study of history, psychology, anthropology, economics, sociology, political science, philosophy, literature, language, art, drama, education, law, medicine, and biology.

Women and men from all colleges at UH Mānoa take women's studies courses because of their intellectual rigor, political insight, and interdisciplinary ties to other fields of study. Many courses are cross-listed with other departments. Women's studies is a uniquely powerful avenue of self-understanding as well as a means of connecting research on women and gender to other academic fields of inquiry. Those who understand the workings of gender in personal lives and social orders can better pursue a variety of careers and life goals. Women's studies offers a unique opportunity to study racial, economic, ethnic, sexual, regional, and global matters of interest among women in Hawai‘i and around the world, past, present, and future.

Undergraduate Study
Bachelor's Degree
Women's studies offers two tracks for majors: either a student-designed special concentration within the field of women's studies, or a general focus on the broad field of women's studies. Students work in close consultation with faculty to design and develop the academic experience that best fits their interests, goals, and needs. The aim of both tracks is to promote
a coherent program of study in contemporary interdisciplinary scholarship in feminist and gender studies. A key purpose of the major is to provide an integrated academic experience for students interested in transnational feminist scholarship and gender issues, while offering flexibility and freedom in planning the degree.

**Requirements**

Although students are strongly encouraged to seek departmental academic advising promptly when considering a major in women’s studies, a summary of undergraduate program information is also available at www.womenstudies.hawaii.edu. General and special women’s studies degree requirements are as follows:

**General Women’s Studies Degree Focus**

Students must complete thirty (30) credit hours of total course work, with a grade of C (not C-) or better, including:

1. Feminist Theory (WS 439/POLS 339);
2. Feminist Methods and Research (WS 440);
3. At least 3 courses from among the WS courses focusing on gender, race and ethnicity in transnational perspective;
4. A minimum of 9 total credit hours from 300 level WS courses (any 300 level course taken in #3 counts toward this total);
5. A minimum of 9 credit hours from 400 level WS courses (WS 439, 440, and any 400 level courses from #3 count toward this total);
6. Additional course work as necessary to complete 30 total hours of course work.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

**Special Women’s Studies Degree Focus**

Students must complete 30 credit hours of total course work, including:

1. Feminist Theory (WS 439/POLS 339);
2. Feminist Methods and Research (WS 440);
3. At least 3 courses from among the WS courses focusing on gender, race and ethnicity in transnational perspective;
4. A minimum of 6 total credit hours from 300 level WS courses (any 300 level course taken in #3 counts toward this total);
5. Up to 15 outside credits at 300 and 400 level, subject to approval by women’s studies’ advisor;
6. Additional course work as necessary to complete 30 total hours of course work.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

**Advising**

Students who plan to pursue a women’s studies major should meet with the women’s studies undergraduate program advisor (currently Dr. Kathy Ferguson) for help in choosing classes, defining their area of interest, creating and developing proposals, and finding the faculty advisor most suited to their areas of interest.

**The Undergraduate Certificate**

The Certificate in Women’s Studies is designed to encourage all undergraduates to acquire a more thorough background in contemporary interdisciplinary scholarship in feminist and gender studies, and to incorporate feminist perspectives and issues into their major fields of specialization. Through this interdisciplinary option, students from various majors can study the specific achievements of women, examine the many factors that determine the status of women across cultures and through time, and analyze theories and assumptions about women that particularly relate to their majors.

The certificate’s practical value includes the enhancement of knowledge that develops students’ abilities to think critically and constructively about their world and their lives. Further, it offers a credential that is applicable to a wide range of careers including medicine, law, business, education, counseling, and social work. The certificate can also provide the groundwork for advanced study of gender and feminism and the graduate level application of feminist theories.

All registered students in good academic standing who are working towards a baccalaureate degree other than Women’s Studies at UH Mānoa may apply for a Women’s Studies Certificate.

**Requirements**

- Students must complete 15 credits in Women’s Studies with a grade of C (not C-) or better.
- The 15 credits must include the following two requirements: a course in Feminist Theory (WS 439/POLS 339), and at least one course in gender, race, and ethnicity in transnational perspectives (list of courses available from the program).
- At least 9 credits must be at the 300 level or higher.

For administrative purposes, any cross-listed course will be counted as a women’s studies course regardless of the departmental designation under which students register for the course.

**Graduate Study**

Women’s studies offers a Graduate Certificate in Advanced Women’s Studies (AdWS Certificate). This certificate program provides a rigorous, integrated, and relevant educational experience for students whose education and career objectives will be enhanced through creative and scholarly transnational feminist analysis of women’s lives and visions. The program guides students to examine the factors that affect the status of women across cultures and through time, analyze theories and assumptions about women in various disciplines, contribute to the reformulation of social knowledge, explore institutionalizing social change that highlights and supports the achievements of women locally and internationally, and understand the usefulness of gender as an analytical tool in many fields.

Graduate studies leading to the AdWS Certificate are focused in four broad areas under the general rubric of gender studies.

- Feminist methods of inquiry and theoretical analyses. Students will explore sex/gender as an analytical category, asking what this category means, what purposes are served by the prevailing binary notions of gender, and how gender is constituted in past, current, and future biological, sociopolitical, cultural, and economic contexts.
- Feminist knowledge. Students will learn about the pervasive impact of gender relations on thoughts, actions, and prevailing constructions of reality. They also will become acquainted with an array of feminist theories and arguments about issues including coalition practices, nationalism and imperialism, and social policy.
Sex/gender and sociopolitical categories of power and privilege. Students will examine the interaction of sex/gender with race/ethnicity, class, sexuality, and other vectors of power and privilege as relevant to nearly all domains of human experience. They will have opportunities to explore the dynamics of these interactions with emphasis on the evolving multicultural milieu of Hawai‘i and the Asia/Pacific region.

Recipients of the AdWS Certificate must be classified graduate students, and normally will be pursuing graduate degrees in other academic departments. The AdWS Certificate will help students learn to apply feminist methodologies, analysis and problem-solving to their other academic fields, and to integrate the rigors of the scholarship on gender into their chosen professions as a means of enhancing their professional lives and opportunities for advancement.

The department website lists research interests and publications of the members of the women’s studies graduate faculty, and describes admissions and program requirements (see www.womenstudies.hawaii.edu). The following sections summarize the admissions and program requirements, but the program website should be consulted for complete details.

Admissions

Students are admitted to the AdWS Certificate program in the fall and spring semesters. Applicants to the AdWS Certificate program must be classified graduate students at UH Mānoa. Candidates are required to submit their current and complete transcripts, three letters of recommendation, and the names of and full contact information for three additional references. Applicants also must submit a 4-5 page essay outlining their personal and professional goals as they relate to the AdWS Certificate program, and identifying potential research and/or community involvement projects they may wish to pursue as part of their AdWS Certificate work.

Requirements

The AdWS Certificate program consists of a minimum of 18 credits, at least 12 of which must be at the 600 level or higher. Nine of these credits must come from the following four WS courses: WS 610 (1 cr), Faculty Seminar Series; WS 613 (3 cr), Feminist Research and Methods of Inquiry; WS 615 (3 cr), Feminist Theory; WS 650 (2 cr), Research in Feminist Studies: Capstone Experience.

Remaining credits will be drawn from a list of courses approved by the women’s studies graduate advisor (currently Dr. Ayu Saraswati). All students will work with a specific advisor to develop an AdWS Certificate curriculum based on their academic majors that best supports their academic and professional goals and objectives. Up to 6 credits towards the certificate may be taken in the student’s home department provided that department’s curriculum includes courses approved by women’s studies.

Each student enrolled in the AdWS Certificate program will design, develop, and complete a research and/or community involvement project to culminate in a publishable-quality work or comparable product, and a professional quality seminar presentation given in the student’s final semester of the program.

Zoology

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Fax: (808) 956-9812
Email: biology@hawaii.edu
Web: manoa.hawaii.edu/biology

Faculty

*K. Cole, PhD (Chair)—ichthyology, behavioral ecology, reproductive biology, morphology and morphogenesis, microgravity biology
*J. H. Bailey-Brock, PhD—invertebrate zoology, reef ecology, Polychaetes
*K. M. Bennett, PhD—neuroscience and nephrology utilizing magnetic resonance imaging
*K. Cole, PhD—ichthyology, behavioral ecology, reproductive biology, morphology and morphogenesis, microgravity biology
*H. G. de Couet, PhD—molecular cell biology, development biology, evolution
*L. A. Freed, PhD—evolutionary and behavioral ecology, ornithology, conservation biology
*M. A. Hixon, PhD—marine ecology and conservation biology
*C. L. Hunter, PhD—conservation biology, coral reef ecology, biology and ecology of marine invertebrates
*S. D. Kraft-Terry, PhD—academic advising and assessment
*P. B. J. Marko, PhD—biogeography, evolution and conservation
*A. L. Moran, PhD—marine ecology and evolution
*M. Porter, PhD—evolution and ecology of vision, crustacean phylogenetic
*F. A. Reed, PhD—population genetics
*S. Robinow, PhD—neurogenetics
*A. D. Taylor, PhD—population, theoretical, and insect ecology
*R. Thomson, PhD—evolutionary biology and phylogenetics
*T. Tricas, PhD—marine animal behavior
*L. Watling, PhD—impacts of humans on benthic environments; crustacean biology
*C. Z. Womersley, PhD—environmental physiology, biochemical adaptation, parasitology
*A. N. Wright, PhD—population ecology, community ecology, conservation biology
*M. Yoshizawa, PhD—evolutionary developmental biology, neuroscience, quantitative genomics

Cooperating Graduate Faculty

R. Alegado, PhD—bacterial pathogenesis, microbial evolution and ecology
W. Au, PhD—bioacoustics and ecological acoustics of the marine environment
B. Bowen, PhD—evolution and conservation genetics of marine organisms
R. Cowie, PhD—evolutionary biology, biogeography, ecological genetics, snails, termites
M. Donahue, PhD—spatial population dynamics; marine community ecology; integrophy of theory and data using likelihood methods; habitat selection; scaling of ecological processes
D. Duffy, PhD—conservation biology, sea birds
R. Gates, PhD—molecular biology, developmental genetics, cell biology, physiology and ecology of corals
E. G. Grau, PhD—comparative endocrinology, environmental physiology

* Graduate Faculty
D. K. Hartline, PhD—quantitative neurophysiology and simulation of simple networks
B. S. Holland, PhD—conservation biology of Native Hawaiian tree snails
K. N. Holland, PhD—physiology, behavior, ecology of aquatic organisms
P. J. Jokiel, PhD—coral reef biology, biogeography and ecology
K. Y. Kaneshiro, PhD—systematics, evolution, insect behavior
S. A. Karl, PhD—molecular ecology, systematics, and phylogeography of marine animals
P. Lenz, PhD—neuroecology of zooplankton sensory systems
P. E. Nachtigall, PhD—behavior and sensory processes of marine mammals
A. Pack, PhD—human and animal cognition
R. Richmond, PhD—invertebrate zoology, conservation biology
F. I. Thomas, PhD—marine ecology, biology of larvae
R. Toonen, PhD—molecular genetics of marine organisms
Affiliate Graduate Faculty
G. Aeby, PhD—coral reef ecology
R. Allison, PhD—systematics, biogeography and ecology
C. Birkeland, PhD—conservation biology regarding coral
A. Friedlander, PhD—marine ecology, marine conservation biology
S. Miller, PhD—ecosystem and population conservation biology

Degrees Offered: BA (including minor) in zoology, BS in zoology, MS in zoology, PhD in zoology

The Academic Program
The Department of Biology at UH Mānoa offers a zoology minor and graduate programs that offer master of science and PhD degrees. Of particular note is the department’s emphasis on tropical marine biology and evolutionary biology. There are few places in the U.S. where these emphases can be pursued more productively or in a more practical setting.

Undergraduate Study
There is no admittance to the BA and BS in Zoology degrees effective Spring 2013.

BA Degree
Requirements
- BIOL 171/171L and 172/172L
- BIOL 265/265L
- BIOL 275/275L
- CHEM 161/161L and 162/162L
- CHEM 272/272L and 273
- BIOC 441 or BIOL 402 (cross-listed PEPS 402 or MBBE 402) (biochemistry lab not required)
- MATH 215 or 241, or equivalent college-level calculus
- ZOOL 490
- Three laboratory courses from the following areas:
  - Developmental (ZOOL 420/420L)
  - Physiology (ZOOL 430/430L, BIOL 407 or 408/408L)
  - Ecology and Behavior (ZOOL 306/306L, 439/439L, or 470/470L)
  - Genetics (BIOL 375/375L)
  - Morphology and Taxonomy (ZOOL 320/320L, 340/340L, 465/465L, or 475/475L; PEPS 363)
- Non-laboratory courses applicable toward (20 credits): ZOOL 399, 499

BS Degree
Requirements
Students must complete 78 to 82 credit hours, including:
- BIOL 171/171L and 172/172L
- BIOL 265/265L
- BIOL 275/275L
- BIOL 375/375L
- CHEM 161/161L and 162/162L
- CHEM 272/272L and 273
- BIOC 441 or BIOL 402 (cross-listed PEPS 402 or MBBE 402) (labs not required)
- PHYS 151/151L, 152/152L; or PHYS 170/170L, 272/272L
- MATH 215 and 216, or 241 and 242 or 252A
- ZOOL 320/320L, or 475/475L, or PEPS 363
- ZOOL 430/430L
- ZOOL 490
- ZOOL 492 (1 credit hour)
- ZOOL 499 (Minimum of 4 credit hours)
- Nine credits of zoology electives (300 level or above in ZOOL or approved BIOL courses), 6 credits in science electives (300 level or above in approved courses in natural sciences).

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Minor
Requirements
(At least 15 credits from the following courses, including 2 lab courses from 2 of the following 5 areas)

I. Development
- ZOOL 420/420L

II. Genetics
- BIOL 375/375L

III. Physiology
- BIOL 275/275L, 407, ZOOL 430/430L, 432

IV. Ecology and Behavior

V. Morphology and Taxonomy

Other Courses Applicable Toward Minor in Zoology
- BIOL 408
- Any ZOOL courses numbered 300 and above

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Graduate Study
The department offers programs of graduate study and research leading to the MS and PhD degrees. The major strengths of the graduate program in zoology are in the areas of animal behavior; cellular, molecular, and developmental biology; and evolution and ecology. Especially strong programs have
developed in areas that utilize the resources of Hawai‘i’s unique island setting, including developmental biology, marine biology, and ecology, evolution and conservation biology. Much of the research in the department emphasizes the animals of Hawai‘i: marine invertebrates, terrestrial arthropods, fishes, and birds.

Graduate students in zoology may join two interdisciplinary graduate specializations; the Cellular and Molecular Biology (CMB); and the Ecology, Evolution, and Conservation Biology (EECB) Program. The department has active affiliations with Hawai‘i’s Institute of Marine Biology, Kewalo Marine Laboratory, Békésy Laboratory of Neurobiology, and the Center for Conservation Research and Training.

Recipients of the MS degree usually teach, pursue careers in research or government service, or pursue further graduate training. Those with the PhD ordinarily seek teaching positions in colleges and universities or research careers in university, government, or private laboratories.

A brochure listing research interests and publications of the members of the zoology graduate faculty, as well as summarizing admissions and program requirements and opportunities for financial aid, is available upon request from the department; a separate graduate student handbook describes the details of program requirements and procedures. The following sections summarize the admissions and program requirements, but the department brochure and handbook should be consulted for complete details.

Admissions

Students are admitted to the graduate program only in the fall semester; the application deadline is January 15. Applicants must submit a completed graduate application form, the official record of performance on the GRE General Test, transcripts for all previous undergraduate and graduate studies; and letters of recommendation from three persons who can appraise the student’s aptitude for graduate study. It is strongly recommended that students take the GRE Biology subject test, and include an official record of performance in their applications. An applicant also must be sponsored by a member of the graduate faculty who has indicated his or her willingness to advise the student; the applicant should communicate with prospective faculty sponsors well in advance of the application deadline.

Intended candidates for the MS or PhD degrees in zoology are expected to present a minimum of 18 credit hours of undergraduate course work in zoology and/or biology to have completed at least three semesters of chemistry (inorganic and organic), one year of physics, and at least one course each in calculus and botany. Deficiencies in undergraduate preparation must be rectified within the first 2 years, without graduate credit, except that biochemistry or molecular biology may be taken for graduate credit if it is at the 400-700 level. A course in biochemistry or molecular biology is required of all students, but it may be taken for graduate credit.

General Requirements

All entering students are required to take ZOOL 691C. All graduate students are required to take at least one graduate seminar or topics course each year.

Master’s Degrees

Thesis (Plan A) and non-thesis (Plan B) programs leading to the MS degree in zoology are available. In addition to the thesis, Plan A requires a minimum of 24 credit hours of course work and 6 credit hours of ZOOL 700 (thesis). The 24 credit hours must include at least 12 credit hours of 600- or higher-level course work.

Plan B is a non-thesis program and requires a minimum of 30 credit hours in 400- through 700-level courses. The 30 credit hours must include at least 6 but not more than 16 credit hours from related departments (excluding courses cross-listed in zoology or applicable to the zoology BA degree) at least 2 but not more than 5 credit hours of ZOOL 699, and at least 18 credit hours of 600 or higher level course work. A research paper based on original scientific work is required.

Doctoral Degree

Many applicants to the PhD program will have completed a master’s degree, but well-qualified applicants without a master’s degree may be admitted directly into the PhD program. Students currently enrolled in the master’s program also may apply for admission into the PhD program without completing the master’s degree.

Course Requirements

For students matriculating with a master’s degree in zoology (or equivalent), there are no course requirements for the PhD degree other than the general requirements (ZOOL 691C in the first year, and at least one graduate seminar or topics course each year), and any courses required by the student’s dissertation committee.

For students matriculating with a bachelor’s degree, general course requirements are very similar to the requirements for students receiving a Plan A master’s degree. A minimum of 24 credits are required in courses numbered 400-800. Additionally, 6 credits are required of ZOOL 800 (dissertation), for a total of 30 credit hours. Students are required to enroll in ZOOL 800 during the term in which their degree will be conferred. At least 12 of the 24 credits of required course work should be in 600-700 level courses, not counting ZOOL 699. The Department of Biology requires that 1 of the 24 course work credits include ZOOL 691C. Of the 24 required credit hours, student may include a maximum of 2 credit hours from ZOOL 699. All courses cross-listed with zoology, and all biology courses which can be counted towards a zoology BA or BS, are considered zoology courses, not courses in a related department.

Other Requirements

An oral comprehensive examination must be passed within 5 semesters of entering the program; this examination will emphasize the student’s research area but may cover any facet of zoology. Upon passing the comprehensive exam, the student is advanced to candidacy for the PhD program.

The research project culminating in the dissertation is the most important part of the PhD degree program. The dissertation is to be an original contribution based on independent research, carried out under the guidance of the advisor and dissertation committee. The completed dissertation is defended at a public final examination, conducted by the dissertation committee and including a public research seminar by the candidate.

Further Information

Further information about the graduate program in zoology, including full details of admissions and program requirements, may be obtained from the biology department or at manoa.hawaii.edu/biology. Other inquiries may be sent to biology@hawaii.edu.
Shidler College offers both undergraduate and graduate degrees, including the Bachelor of Business Administration (BBA), Master of Business Administration (MBA), Master of Accounting (MAcc), Executive MBA (EMBA), Distance Learning Executive MBA, Distance Learning Executive MBA in Health Care Management, Japan-focused MBA (JEMBA), China International MBA (CIMBA), US International MBA (USIMBA), Vietnam Executive MBA (Ho Chi Minh and Hanoi), Master of Human Resource Management (MHRM), and PhD in Business Administration. Several professional development programs are also offered through Shidler College’s Executive Education Center.

Mission

The Shidler College of Business is a multicultural academic community achieving international excellence in business education, research, and practice utilizing Hawai’i’s unique advantages.

The special role of Shidler College in UH Mānoa is to serve as the center of advanced graduate and professional studies in business administration while emphasizing research and providing excellence in undergraduate programs.

Accreditation and Affiliations

Shidler College is accredited by AACSB-International* and is a member of the Graduate Management Admissions Council (GMAC).

Degrees

Bachelor’s Degrees: BBA with concentrations in accounting, entrepreneurship, finance, human resources management, international business (double major only), management, management information systems and marketing.

Master’s Degrees: MBA, Japan-track MBA, China-trackd MBA, Executive MBA, Distance Learning Executive MBA, Distance Learning Executive MBA in Health Care Management, Vietnam Executive MBA (Ho Chi Minh and Hanoi), MAcc, 3/2 Master of Accounting, and Master of Human Resource Management.

Doctoral Degree: PhD in business administration

Advising

Academic advisors at the Shidler College Office of Student Academic Services (OSAS) assist students with program planning and course selection; learning UH Mānoa policies and procedures; fulfilling graduation requirements in a timely manner; and exploring transfer credit, study abroad exchange,
and other educational opportunities, resources, and options. Students, while responsible for their own academic progress, should consult their advisors on a regular basis to monitor their academic status and progress toward degree completion.

Advising for undergraduate students, including mandatory advising for newly admitted undergraduate students, is available in BusAd B-101, (808) 956-8215, email: business@hawaii.edu. Advising for graduate students is available in BusAd G-202, (808) 956-8266, email busgrad@hawaii.edu.

Undergraduate Programs

The Shidler College of Business offers a professional, upper division program designed to give students a broad liberal arts background and a sound education in the essentials of business management. The BBA degree program, therefore, is comprised of three integral parts: (a) general education, (b) business fundamentals, and (c) a specialized major area of business. Students may select a major that complements their interests, aptitude, and career goals from such fields as accounting, entrepreneurship, finance, human resources management, international business, management, management information systems, and marketing. A double major and/or minor are also options.

The Shidler Freshman Direct Admit Program (DAP)

The Shidler Freshman Direct Admit Program (DAP) is designed for high achieving incoming freshmen who wish to enter the Shidler College of Business early and get a head start. It is an option for outstanding high school seniors entering UH Mānoa in the fall. Selective admission for the Shidler Freshman Direct Admit Program is highly competitive and merit-based.

On your UH Mānoa application, simply designate “Pre-Business” or any specific business major as your first choice major, and you will automatically be considered for the Shidler DAP. No separate application is necessary. Shidler DAP students are eligible for a scholarship upon enrollment.

Admission Requirements

Students transfer into Shidler College upon the successful completion of the following admission requirements:
1. Minimum of 60 credit hours of college-level work (junior standing);
2. Minimum cumulative GPA of 2.5 in all courses attempted (combined UH Mānoa and transfer GPA from all other colleges attended) and a minimum cumulative GPA of 2.0 at UH Mānoa (if courses have been attempted at UH Mānoa). If 30 or more credits with a 2.5 cumulative GPA have been completed at UH Mānoa, the transfer GPA will not be used to determine admission.
3. Completion of the following pre-business courses with a combined GPA of at least 2.5, with no grade below C. (C- grades will not be accepted for admission.) Pre-business courses: ENG 100/ELI 100/ENG 190, or ENG 200; COMG 151 or 251; ACC 201 and 202; NREM 203, BUS 250 or MATH 203, 215, 241, or 251A; and ECON 130 and 131;
4. Minimum grade of C in ICS 101 (or equivalent); and
5. If three or more business courses (or equivalents) beyond the pre-business courses (e.g., business law, statistics, management, etc.) have been attempted, a combined GPA of at least 2.5 is required in those courses.

Important: The Social Sciences Diversification requirement in the General Education Core is met by completing ECON 130, 131 and PSY 100 or SOC 100 (which is the prerequisite to BUS 315 in the business core).

Application Procedures

Students currently enrolled as classified students at UH Mānoa can contact the Shidler College of Business, Office of Student Academic Services (OSAS), BusAd A-202, for application materials.

Non-UH Mānoa students or unclassified students enrolled in Outreach College must submit the System Application Form to the Office of Admissions, 2600 Campus Road, Room 001, Honolulu, HI 96822 (or visit the website at manoa.hawaii.edu/admissions/).

Application Deadlines

The application deadlines for classified UH Mānoa students are November 1 for the spring semester and April 1 for the fall semester.

New and transfer students should consult with the Office of Admissions for the application deadlines. Information is available online or call (808) 956-8975.

College Requirements

1. Completion of 120 non-repeated credit hours, including the General Education Core Requirements (see the “Undergraduate General Education Requirements” section for more information) and the following college curriculum requirements:
   a. Pre-business courses (see “Admission Requirements”);
   b. Required business courses: BLAW 200, BUS 310, 311, 312, 313, 314, 315, 345;
   c. Requirements for the major;
   d. BUS 209, ENG 209, 306, or 307;
   e. An upper division course in international business; and
   f. 9 credits of non-major elective courses beyond the introductory level (must include 3 non-business credits, 6 upper division elective credits), which may include a minor and up to 3 credits of BUS 395.
2. GPA of 2.0 in all UH Mānoa registered credit hours.
3. GPA of 2.0 in all required business courses (and their equivalents) and Shidler College major courses completed at UH Mānoa.
4. Grades of C- or higher in any required business courses (and their equivalents) and Shidler College major courses completed at UH Mānoa.
5. Residency requirements for BBA degree include both:
   a. University residency requirement of 30 credit hours at UH Mānoa and
   b. Minimum of eight upper division business courses (24 credit hours), including a minimum of three courses in the student’s major and BUS 345, after admission to Shidler College.

Students interested in applying to Shidler College should contact the Office of Student Academic Services for current information on admission and program requirements.

Modification of Hawaiian/Second Language Requirement for Shidler College Students

Shidler College students must complete one or a combination of the following options to satisfy the Hawaiian/Second language requirement:
1. A four-semester sequence of a single language (or proven competency via a language requirement waiver or completion of 202/212);
2. Participation in a study abroad or international exchange program of 12 credits or more during the fall or spring;
3. 12 credits of international culture/area courses, from one culture of study, to be chosen from an approved list of courses provided by the Shidler College Curriculum and Program Committee and the Office of Student Academic Services.
4. Four semesters of language and culture study. The language and culture groups do not need to match.

**Major Requirements**
See appropriate departments in this Catalog for specific major requirements leading to a BBA degree.

**Academic Policies**

**Sequence of Courses**
Shidler College undergraduates are required to take BUS 310 and 311 in their first semester in the Shidler College. BUS 345 as a capstone course is taken in the final graduating semester. Shidler College students must consult the course descriptions in this Catalog for prerequisites and proper sequencing of business and major courses toward graduation.

**Minimum Standards for GPA**
The minimum acceptable academic performance for Shidler College undergraduates at UH Mānoa is (a) cumulative UH Mānoa GPA of 2.0; (b) GPA of 2.0 in all required business courses (and their equivalents) and Shidler College major courses completed at UH Mānoa; (c) Grades of C- or higher in any required business courses (and their equivalents) and Shidler College major courses completed at UH Mānoa.

**Probation**
Shidler College students are placed on probation at the end of any semester for any of the following reasons:
1. The student’s cumulative GPA falls below 2.0
2. The student’s GPA in required business courses and major falls below 2.0
3. The student fails to complete BUS 310 and 311 in the first semester in the Shidler College with a grade of C- or higher.
4. Satisfactory progress toward graduation is not being made.
Continued probation may lead to suspension.

Students on probation will be required to meet with their academic advisor.

**Double Major**
Students may pursue a double major to enhance their educational spectrum and professional marketability. To qualify for a double major, students must have a minimum cumulative UH Mānoa GPA of 3.0 and a minimum UH Mānoa GPA of 3.0 in each of the two proposed majors. At the time of declaration, the student must have completed at least one required course in each major. A double major shall consist of 27 or more credits which lead to a specialization in two fields of study. Courses must meet the requirements for a major in each of the fields, and may not be used to meet the general upper division elective requirements. (Note: International Business is offered only as a double major.) After successfully meeting the double major requirements, students may officially declare a double major in the Office of Student Academic Services, BusAd B-101.

**Transfer Students**
Students completing their first two years of study at a community college or at another four-year institution should take only those business courses offered at the freshman or sophomore level (e.g., introductory accounting, business law). Business courses taught at community colleges may not be used to satisfy upper division course requirements in Shidler College (e.g., business statistics). Junior-level and senior-level business courses are accepted only from colleges accredited by the AACSB and select foreign universities.

**Seniors**
Seniors must file a graduation application by December 31 for summer graduation, by March 1 for fall graduation, and by November 1 for spring graduation in the semester preceding graduation. Seniors who plan to finish their program requirements during the summer session will need to indicate on their graduation application if they would prefer their name to be printed in the spring commencement program or the fall commencement application. Application forms and deadline information is available online at shidler.hawaii.edu/forms/.

**Withdrawal Deadline**
Shidler College strictly enforces a three-week withdrawal deadline for upper-division business classes. Please note that this deadline is not the same as that for non-business classes. In general, exceptions regarding late drop requests will not be granted.

**Multiple Majors/Degrees**
Shidler College students may choose to pursue a multiple major/degree in any other UH Mānoa college/school. The consideration of an additional field of study can increase knowledge, diversify perspectives, and enhance personal education as well as professional growth. Requirements for admission include a cumulative GPA of 3.25, approval from the current advisor, and a statement of purpose from the applicant. Current Shidler College students considering a multiple degree or students interested in admission to the Shidler College as a multiple degree candidate should meet with an advisor in the Office of Student Academic Services to discuss individual academic programs.

**Second Baccalaureate Degree**
Priority for admission is given to students seeking their first undergraduate business degree. Shidler College welcomes
students pursuing a second bachelor’s degree, however, students who have already completed a bachelor’s degree in business will be denied admission to Shidler College of Business. Students should complete the application form (available online) and submit the appropriate required documents to the Office of Admissions in QLCSS 001 or call (808) 956-8975.

**Minors**

Shidler College students may choose a minor offered in another UH Mānoa college/school to complement their business program. A minor course of study consists of a minimum of 15 credit hours of non-introductory or upper division course work that is completed with a grade of C (not C-) or better. Shidler College students may use a minor to replace the general upper division electives requirement. Minor course work must be approved by the respective department advisor.

**Minor in Business Administration**

The Shidler College offers a minor in Business Administration to non-business majors. This minor will provide students with a greater understanding of business in preparation for their entrance into the workforce. Applicants must meet the following admission requirements:

1. Classified undergraduate student not enrolled in the Shidler College of Business
2. Junior standing (60 or more college-level credits)
3. 2.5 cumulative GPA
4. Completion of the following courses with a C (not C-) or better:
   a) ICS 101B (or equivalent)
   b) ECON 120 or 130 or 131
   c) ACC 201
   d) Calculus (or equivalent: NREM 203 or MATH 203, 215, 241, 251A, or BUS 250) or Statistics (or equivalent: NREM 310 or ECON 321 or PSY 225 or SOCS 225)
   e) PSY 100 or SOC 100

For more information and to receive an application, please contact the Shidler College Office of Student Academic Services in BusAd B-101 or at (808) 956-8215.

**Graduate Programs**

Shidler College of Business offers the only AACSB-International accredited MBA and MAcc programs in Hawai‘i. The AACSB seal of approval guarantees students that their programs satisfy the expectations of a wide range of quality standards relating to strategic management of resources, interactions of faculty and students in the educational process, and achievement of learning goals in degree programs. There are less than 720 AACSB accredited institutions worldwide, and Shidler College of Business is proud to be one of them.

**Application Deadlines**

**Master’s Degree Programs:**

The MBA and MAcc programs both admit students during the fall semester. The fall application deadline is **March 1** for international students and Full-Time MBA students interested in scholarships and **May 1** for all other students. The fall deadline for the Executive MBA, Distance Learning Executive MBA, Distance Learning Executive MBA in Health Care Management, and Master of Human Resources programs is **June 1**. The fall deadline for the Vietnam Executive MBA program is **July 1**.

The MAcc program is the only program that admits students during the spring semester. The spring application deadline for the MAcc program is **November 1**, and **October 1** for international students.

**Master of Business Administration**

**Full-Time Global MBA**– The Full-Time Global MBA program offers students a comprehensive foundation in business fundamentals with an Asia-Pacific focus. The Full-Time Global MBA program features a first-year cohort experience designed to help students learn the inner-workings of group dynamics crucial for the leaders of today’s organizations. The MBA curriculum is predominantly focused in international business and stresses developing the skills and breadth of judgment required of top-level managers and executives in both the private and public sectors.

Students spend their first year learning the principles and theories of management strategies through a sampling of courses in various functional areas. Next, students spend the summer taking part in an internship experience allowing them to build upon the foundation created during their first year. The second year is spent customizing their degree through the completion of seven elective courses. With the assistance of an advisor, students select courses that fit their personal and professional goals and interests. In their last semester, students register in the consulting practicum, synthesizing and applying knowledge from their MBA course work to an existing organization.

**Country Focus**– The Full-Time Global MBA program at Shidler College of Business offers students a comprehensive foundation in business fundamentals with an Asia-Pacific focus. Students have access to internships, career development assistance and strong networking opportunities with fellow students, alumni, and the business community at large. The Full-Time Global MBA program features a first-year cohort experience designed to help students learn the inner-workings of group dynamics crucial for the leaders of today’s organizations. Throughout the program, students meet their personal and professional goals while preparing them for leadership in today’s global business environment.

To receive a certificate recognizing that an MBA meets the level of a country-specific focus, international experience and language proficiency or training are both required. The international experience will generally be achieved through a combination of overseas internship and course work. The internship will generally be accomplished during the summer following your first complete year of study in the country of focus. This will be followed by elective business course work at one of our partner institutions in that country that will coincide with the fall term of the second year. The combination of this for-credit internship and course work should equal twelve credit hours to maintain your pace toward graduation in two academic years.

For the country focus certification, there is a language requirement that can be met in one of two ways. You can pass a proficiency test that would waive the requirement to take language courses. This would be administered by the language department here at UH Mānoa. The level of proficiency required to pass this test would be equal to testing out of third year language courses. The program is not limited to those that arrive at Shidler with language proficiency, and so the language requirement can also be met by taking language courses here at
UH Mānoa during the first year of the Full-Time Global MBA program. After proficiency testing, there would be placement into one of three levels of language class, and there would then be two terms of progressive language course work.

**Chinese Partner Schools:**
- Sun Yat-Sen University
- Shanghai University of Finance & Economics College of Business
- China Europe International Business School (CEIBS) MBA Program
- Shanghai Jiao Tong University
- Shanghai Advanced Institute of Finance
- Shanghai Jiao Tong University
- Antai College of Economics & Management
- Japanese Partner Schools:
  - International University of Japan
  - Nagoya University of Commerce and Business

**Part-Time MBA**—The Part-Time MBA program provides working professionals a way to leverage their education while maintaining full-time employment. The global business environment is constantly undergoing changes, therefore the Part-Time MBA program stresses the development of analytical skills and their application to decision-making rather than simply reviewing current practices. Students gain a solid academic foundation for professional careers in management.

Students in the part-time program generally take two courses per semester with classes held once a week per subject area. Classes meet during the weekday evenings and are offered each semester and during both summer sessions. Students in the part-time program enjoy the flexibility of being able to complete their degree at their own pace. Depending on the number of courses taken each semester, part-time students can usually complete their degree in three years.

**Joint Programs**—The Shidler College of Business also offers four joint MBA programs. The JD/MBA and the MS in Nursing Administration/MBA. Applicants must meet the admission requirements and apply to both programs to be eligible for joint programs.

**Executive MBA**

The Executive MBA (EMBA) program is a 22-month degree program designed for highly motivated managers who want to increase their knowledge and acquire the skills needed to assume broader corporate responsibility. A total of 48 credit hours is completed during this accelerated degree program. Classes are uniquely scheduled to allow working individuals to participate with maximum convenience to themselves and their sponsoring organizations. The program consists of a short residence session at the start of the first academic year, with classes meeting Tuesday evenings and alternating Saturdays. An undergraduate degree, GMAT exam, at least five years of progressively successful work experience, and a current management position are required for admission. A new EMBA cohort begins in August of alternate years.

**Distance Learning Executive MBA**

The Distance Learning Executive MBA is a 22-month program designed to meet our neighbor islands’ business demands by providing advanced business training to their residents. The 48-credit hour program is geared toward individuals who have shown leadership or management potential. It enables students from the neighbor islands to pursue a graduate degree without having to travel and with limited interruption to their professional obligations or family life. The distance learning executive MBA classes are highly interactive and are broadcast in real time so that all students on the receiving sites will receive instruction simultaneously. Class meetings are held online every Tuesday and Thursday evenings, and alternating Saturdays. In addition, students will have 16 visits to UH Mānoa to engage and interact with professors and classmates beyond the virtual classroom environment. The instructors, curriculum, and academic standards are the same as our regular evening UH MBA/EMBA program. As such, it requires the completion of 48 semester credit hours of graduate level courses divided into two parts: the required core and elective courses. Electives will be determined by the students as a group based on collective needs.

**Distance Learning Executive MBA—Health Care Management**

The Distance Learning Executive MBA—Health Care Management Program provides a unique insight into the health sector, which is undergoing transformational growth and change. The program combines a dynamic and rigorous MBA core business curriculum with health care-focused electives to prepare candidates for successful and rewarding careers. The program is a track within the Distance Learning Executive MBA, where students enrolled in the Health Care Management track will take Health Care elective courses in the second-year of study. These elective courses will enable students to understand the dynamic landscape of the medical industry and eventually, demonstrate the ability to provide sound business acumen to health care organizations.

**Vietnam Executive MBA (Ho Chi Minh City and Hanoi)**

The Vietnam Executive MBA (VEMBA) is a 22-month degree program in business administration, conducted in cooperation with the International University in Ho Chi Minh City and the Foreign Trade University in Hanoi. The 48-credit-hour program is modeled after the Executive MBA conducted in Honolulu, with the same faculty and curriculum. Faculty members teach courses in Ho Chi Minh City and Hanoi in one-month modules, partly as distance learning. Participants in the program are established Vietnamese executives, some Americans, East Asians, and other expatriates. EMBA has Asian business as its focus but constant consideration is given to the impact of globalization on business and economics in the region.

**MBA Requirements**

All MBA students are expected to enter the program with computer competency and English language proficiency. Up to six courses of English as a second language may be required of international students depending upon placement exam results.

The MBA program consists of 21 credit hours of core courses: BUS 621, 622, 623, 624, 626, 627, 628, 629, 630, and 631; 21 credits hours of electives; the capstone experience, which consists of BUS 632 Business Policy and Strategy (3 credit hours) and BUS 696 MBA Consulting Practicum (3 credit hours).

**Required Core Courses**

- BUS 621 Business Statistics (1.5)
- BUS 622 Economic Foundations of Strategy (1.5)
- BUS 623 Marketing Management (3)
- BUS 624 Accounting for Decision-making (3)
- BUS 626 Leadership and Organizational Behavior (3)
- BUS 627 Business, Government, and External Environment (1.5)
- BUS 628 Ethics (1.5)
- BUS 629 Managerial Finance (3)
- BUS 630 Managing Information Technology for Strategic Advantage (1.5)
- BUS 631 Operations and Supply Chain Management (1.5)

**Electives (21 credit hours)**

Of the required 21 credit hours, six may be at the 400-level. Students may also take graduate electives from outside the college as long as at least nine elective credits are completed within Shidler College.

**Professional Development (0 credit hours)**

- BUS 601 Professional Development (two semesters)
  Required for full-time MBA programs

**Integrative Capstone (6 credit hours)**

- BUS 632 Business Policy and Strategy (3)
- BUS 696 MBA Consulting Practicum (3)

**Thesis Option**

In consultation with their advisor, a student may opt to do a research thesis in place of BUS 696 and three elective credits. Thesis students enroll in BUS 700 Thesis Research.

**MBA Admission Requirements**

For admission into the MBA graduate programs, Shidler College of Business applicants must take the GMAT within five years prior to applying, have a recommended GPA of 3.0 and at least two years of full-time post-baccalaureate work experience (five years for Executive MBA, Distance Learning Executive MBA and Health Care Management, and Vietnam Executive MBA applicants). Applicants must also submit essays, a statement of objective, resume, two letters of recommendation, and as part of the admission decision, candidates may be invited for an interview. Admission is competitive. Thus, the college is not always able to admit all qualified applicants.

All applicants who received a bachelor’s and/or master’s degree in a country where English is not the primary language of instruction are required to take the TOEFL or IELTS. Test scores may not be more than two years old. International applicants who earned a bachelor’s degree (or an equivalent) within the last five years at a regionally accredited or recognized institution are exempt from the TOEFL. The minimum TOEFL score is 550 for the Executive MBA, 500 for the Executive MBA-Vietnam, and 600 for all other MBA programs, or internet based test (IBT) score of 100, or IELTS score of 7.

Information about the TOEFL may be obtained from the Educational Testing Service at www.ets.org/toefl. Information about the IELTS may be found at www.ielts.org. Information regarding the GMAT may be found at www.mba.com.

Admission requirements for the Master of Accounting programs are found in the “Accounting” section within the Shidler College of Business. Admission requirements for the PhD program in Business Administration are found in the “PhD in Business Administration” section of this Catalog.

For detailed information regarding the MBA programs, contact the Shidler College of Business Office of Student Academic Services, 2404 Maile Way #G202, Honolulu, HI 96822; (808) 956-8266; email: mba@hawaii.edu; or web: www.shidler.hawaii.edu.

For detailed information regarding the Executive MBA programs and Master of Human Resource Management program, contact the Shidler College of Business Executive Education Center, 2404 Maile Way #A303, Honolulu, HI 96822; (808) 956-8135; email: emba@hawaii.edu; web: www.shidler.hawaii.edu.

**Master of Accounting**

The Master of Accounting (MAcc) degree provides an advanced education in taxation, financial accounting, and auditing necessary for students to pursue leading positions in public practice, business, government, and related fields.

The program offers students the opportunity to adequately prepare for today’s multifaceted accounting practice by strengthening their understanding of the body of accounting knowledge, as well as preparing them for the complexities and new technology facing the accounting profession. The objectives of the program include: a) providing the educational opportunity necessary for students to become qualified professional accountants for leading positions in public practice, business, not-for-profit organizations, government, and related fields; b) enhancing students’ intellectual and analytical skills with research skills necessary to further educate themselves after graduation, including exposure to leading high technology; and c) enhancing students’ professional communication skills necessary for success in a contemporary accounting environment.

Completion of this program will fulfill the State of Hawai‘i’s 150 credit hour requirement for Certified Public Accountant Licensure. In addition, there are opportunities available to study abroad (Asian Field Study), as well as internships (up to 3 graduate level credits), and career development services to further enrich and support your undergraduate and graduate accounting studies.

MAcc students may choose one of two suggested concentrations: (tax or financial reporting) or create their own.

**Admissions Guidelines**

- GPA 3.0
- GMAT taken within the last 5 years
- International Students: TOEFL 600 or IELTS 7.0 scores*
- No work experience required

*Applicants who do not meet these requirements may still be granted admission but may be required to take a placement exam at the time of matriculation and/or to take English language classes in addition to their MAcc course work.

**3/2 Master of Accounting**

The 3/2 Master of Accounting (MAcc) program is an integrated, five-year 150-credit hour program designed for students who want to earn both undergraduate and graduate degrees in accounting. Students in this program gain the skills necessary to build a successful career in the multifaceted, dynamic practice of accounting. Current undergraduate students may apply to the program during their junior year. This program is for students who wish to enter professional careers in public practice, business, non-profit organizations, and government sectors.

Completion of this program will fulfill the State of Hawai‘i’s 150 credit hour requirement for Certified Public Accountant Licensure. In addition, there are opportunities available to study abroad (Asian Field Study), as well as internships (up to
Master of Human Resource Management

The Master of Human Resource Management (MHRM) degree caters to individuals who are seeking to expand their knowledge in the field of human resources. The program is also offered to the neighbor islands via video conferencing.

Over the last several decades, HRM has become a much more demanding profession, requiring specialized training and appropriate work experience. Job specialties in HRM include training, staffing, compensation and health benefits, health and safety, organizational development, and career development. Each of the specialties is overseen by demanding legislation and the push to optimize the competitiveness of the organization.

The human resource management curriculum is interdisciplinary in its approach, integrating other disciplines—especially organizational behavior, management systems, and labor and employment legislation.

Minimum Qualifications

- A bachelor’s degree from an accredited college/university or equivalent
- A grade point average of 3.0 or higher
- Two years’ professional/managerial post-baccalaureate employment preferred
- Resume
- Statement of objectives
- Two letters of recommendation
- Interview
- For international students: TOEFL or IELTS score

The program consists of 30 academic credit hours, or 10 courses. The curriculum will include the foundation courses (compensation, staffing, training, industrial relations, and health and safety) leadership, organizational development, negotiations, an integrative capstone experience, and an elective. The MHRM is a cohort program where students will go through the entire program as a group. Classes meet Wednesday evenings and alternating Saturdays. The program should take approximately 16 months.

PhD in Business Administration

The PhD Program in Business Administration offers an academically challenging and rigorous program designed to prepare highly motivated and intellectually gifted students for a career in research, teaching, and service with a particular focus on Asia and the Pacific. This full-time program emphasizes a strong foundation in both methodological and theoretical training. A teaching opportunity supported by ongoing seminars in pedagogy will give students valuable experience in the classroom. Collaborative work with faculty will enhance research and learning opportunities. Students will also gain valuable computing, quantitative, and methodological skills vital to effective research.

Doctoral candidates work closely with Shidler College faculty in areas of specialization that often parallel the strengths of faculty members. These areas include International Accounting, Asian Finance, Global Information Technology Management, International Marketing, and International Organization and Strategy.

The program is small and individualized, which enables students to pursue their own areas of interest. Admission, for the fall semester only, is highly competitive, and only full-time study is allowed. The expected completion time for the doctoral degree is four to five years.

For admission to the PhD in Business Administration, the candidate applicant should meet the following criteria. The deadline for application is January 31. (Note that admission to the doctoral program is not automatic, and will be determined on a case-by-case basis by a faculty committee.)

Minimum Qualifications

- Master’s degree or bachelor’s degree. Subject matter of the foundation courses in business or accounting obtained at an accredited school.
- GMAT or GRE in the top 25th percentile
- GPA of 3.2 or above on a 4.0 scale
- TOEFL (computer-based) of 250 or the equivalent score on the IELTS
- 3 letters of reference
- Exceptions to the above requirements may be made by the PhD Admissions Committee on a case-by-case basis.
- Meeting the above minimum requirements is necessary for consideration, but does not automatically assure admission. Admission is granted on a case-by-case basis by the PhD Admissions Committee.

Recommended Qualification

- Personal interview or telephone interview
- Teaching potential as demonstrated by previous teaching performance, if available.
- Research interests compatible with Shidler College faculty research
- Example of previous research paper or essay written by candidate, if available.

Desirable Qualifications

- International experience
- Foreign language ability in area of desired specialization
- International area academic studies, such as Japan or China area studies

For further detailed information, please contact the PhD Program in Business Administration at (808) 956-6723; email: imphd@hawaii.edu; web: shidler.hawaii.edu/phd.

Special Professional Programs

See www.shidler.hawaii.edu

Asia-Pacific Economic Cooperation (APEC) Studies Center

The APEC Studies Center was formed in July 1994 as a joint venture of UH Mānoa and East-West Center and is one of the founding members of the U.S. APEC Study Center Consortium. APEC has become the primary vehicle for developing a sense of economic community in the Asia-Pacific region. The 21 member economies that currently comprise APEC constitute about half of the world’s total annual output in terms of GNP and represent almost 50 percent of the world’s total merchandise trade.
Asia-Pacific Financial Markets (FIMA) Research Center

FIMA Research Center conducts academic and policy research on financial markets in the Asia-Pacific region. It serves the securities and banking industries, academia, and government sector through four major programs:

The Asian Shadow Financial Regulatory Committee (ASFRC) is a group of independent experts on economic policy issues relevant to financial markets and the financial industry of the Asia-Pacific region. ASFRC members are independent of any of the members' affiliated institutions. The policy recommendations of ASFRC are its own. Typically, ASFRC tries to translate concepts drawn from academic literature into concrete policy recommendations.

The Pacific-Basin Finance Journal publishes the highest quality theoretical and empirical research on financial markets of the region.

The FIMA Financial Executive Program is intended for market regulators and financial executives to develop a better understanding of the financial markets in the region as well as in the developed economies in light of state-of-the-art finance theories.

The PACAP Databases Program creates, maintains, and distributes capital market databases of Asia, including China, Hong Kong (SAR), Indonesia, Japan, Korea, Malaysia, Philippines, Singapore, Taiwan, and Thailand. The program is jointly undertaken by FIMA and the University of Rhode Island PACAP Research Center. The FIMA Research Center assumes a leadership role as the front office by acting as a liaison with participating financial institutions from the region. The PACAP Research Center, in turn, provides the back office function of maintaining, updating, and distributing the databases.

Executive Education Center

The Executive Education Center is responsible for the Shidler College’s executive degree programs as well as custom and open-enrollment programs. Our programs develop the critical skills and leadership capacities of individuals, teams, and organizations to sustain a competitive advantage in a global economy.

We design and deliver custom programs to support organizations in achieving their strategic goals. Our open-enrollment programs are offered to flexibly serve individuals and organizations seeking breakthrough learning opportunities. For more information, or to speak with an executive education staff member, please email execed@hawaii.edu or call (808) 956-8135.

Family Business Center of Hawai‘i

The Family Business Center of Hawai‘i is a partnership between Hawai‘i’s family business community and the UH’s Shidler College of Business. The mission of the Family Business Center is “equipping, educating, and celebrating families in business.” The center provides opportunities for the families to address many of the challenges they face by providing educational seminars and a forum for the exchange of information between families so that they can survive and thrive into the 21st century.

Pacific Asian Center for Entrepreneurship and E-Business (PACE)

The goal of PACE is to foster the entrepreneurial spirit among students, faculty, and the community. The center supports the inclusion of entrepreneurship-related courses in the UH Mânoa curriculum and offers a summer certificate in international entrepreneurship. In addition, PACE also supports the student Entrepreneurship Club and numerous outreach programs, including statewide business plan competitions at the high school and college levels, the Kauffman Entrepreneurial Internship Program, a distinguished lecture series, the Hawai‘i Entrepreneurs Bootcamp, and programs for Native Hawaiian entrepreneurs.

Pacific Asian Consortium for International Business Education and Research (PACIBER) Diploma

Pacific Asian Consortium for International Business Education and Research (PACIBER) was created in 1988 as a consortium of 27 leading universities dedicated to bridging the gap by establishing linkages to promote international business education, research, and exchange of information among faculty and students. UH is a founding member and Secretariat of PACIBER.

The PACIBER Diploma is a program for undergraduate and graduate students studying business who wish to develop international skills through a combination of courses, study abroad, and internship experience. The bearer of the PACIBER Diploma will be recognized as one who is an internationally attended management individual with the requisite academic credentials, overseas experience, language capability, and cross-cultural training to be immediately productive upon accession to any Asia-Pacific-related position.

For more information on PACIBER and the PACIBER Diploma, please contact pami@hawaii.edu and visit www.paciber.org and shidler.hawaii.edu/pami.

Pacific Asian Management Institute (PAMI)

PAMI was established in 1977 as an institute of international management education and research bridging the East and the West. Students, faculty, managers, and government officials from more than 170 companies and 200 institutions in 22 countries have attended cross-cultural, international management courses, and training programs developed by PAMI.

For a modest fee in addition to the summer course tuition, two certificate programs—in International Management and International Entrepreneurship—are offered by PAMI during the Summer Sessions. The curriculum features traditional (classroom-based) and online international business courses in management, marketing, finance, business economics, entrepreneurship, and human resource management. These are taught by faculty from UH Mânoa and from some of the best business schools in the U.S. and around the world. The certificate programs are open to undergraduate and graduate students from any discipline, to Americans and foreigners, who are admitted by the Summer Session Office.

The Pacific Asian Lecture Series (PALS), open to the public, is part of the PAMI summer program, as are occasional field trips and site visits. The highlight of PAMI’s summer is the annual N.H. Paul Chung Luncheon and Lecture, held in honor of PAMI’s founder and features a renowned international business speaker.

PAMI is the secretariat for the Pacific Asian Consortium on International Business Education and Research (PACIBER), with 36 member universities in the U.S., Canada, Asia, and Oceania.
**Pacific-Basin Finance Journal**

The Pacific-Basin Finance Journal is an academic journal published five times a year by Elsevier Science Publishers B.V. (North-Holland) in collaboration with the Shidler College of Business. The journal provides a specialized forum for the publication of the highest quality theoretical and empirical research on capital markets of the Asia-Pacific region and represents a significant milestone in the FIMA Research Center’s program and objectives as it effectively reaches a broader audience in terms of current developments in Asian and Pacific capital markets. Its primary emphasis will be placed on the following areas:

- investment and portfolio management
- theories of market equilibrium
- valuation of market equilibrium
- behavior of asset prices in financial sectors
- normative theory of financial management
- capital markets development
- market mechanism

**Pacific Research Institute for Information Systems and Management (PRIISM)**

PRIISM is a center for research and educational activities. Drawing on a variety of academic disciplines, PRIISM focuses on information systems and technologies and management of organizations. Its primary objective is to promote research on the development, implementation, and use of information and communication technologies in organizations.

**Career Development & Internships**

**Undergraduate Students**

The Office of Internships and Career Development at Shidler College of Business provides career-related internships to gain real world experience while earning academic credits. Through the internship program, students strengthen their employment opportunities in the marketplace after graduation and gain greater insight into the selection of a career path, and network with professionals in their chosen field.

The Career Development Office provides extensive on-campus interview programs, career fairs, and workshops. The office is dedicated to assisting students in their career growth and development, and to helping employers identify and select highly qualified candidates. A broad range of services are offered to enhance our students’ employment marketability. From career search and information sources to skills development workshops, we seek to educate, train, and advise our students to ensure successful preparation for entry in the business job market, and assist students in making the right career decisions.

The office maintains a business and alumni network that provides a link between recruiters and students, to maximize the potential for successful internship and permanent job placement.

For more information on the various programs, contact the Career Services Office at (808) 956-6972 or (808) 956-9330. Questions regarding graduate-level internships and career development should be directed to (808) 956-3122. Visit the internship and career development website at shidler-hawaii-csm.symplicity.com for an active list of internships and jobs, along with valuable career links.

**Graduate Students**

The Office of Graduate Career Services and Professional Development provides career planning and professional development services for Shidler graduate students and alumni. The office offers career strategy and planning workshops, individual coaching and career management services, mentorship programs, and guest speaker events. Graduate students, who participate in the Professional Development Series, are exposed to a variety of industries and occupations by the Shidler College of Business’ employer partners and Graduate Career Services. Students are also equipped with basic professional development tools to support their career planning.

Shidler graduate students and alumni will have lifetime access to the Career Services Platform, Shidler Career Links. Students will be able to post their resumes, and search for internship and job opportunities posted by Shidler’s employer partners. Students will be able to access career related announcements. Access Shidler Career Links at: shidler-hawaii-csm.symplicity.com.

The Office of Graduate Career Services and Professional Development offers lifetime services to support the Shidler student and alumni career efforts and ambitions. For more information, contact the Office of Graduate Career Services and Professional Development at (808) 956-3122 or (808) 956-2811.

**International Study**

In addition to the study abroad programs offered through the UH Mānoa Study Abroad Center and the UH Mānoa’s International Exchange (MIX) Office, the following Shidler College sponsored programs are available.

**Asian Field Study**

Shidler College offers two Asian Field Study courses, a summer 10-week, 6 credit course (BUS 477/677) which includes three weeks in Asia, and a variable credit course (BUS 476/676), which includes a required preparatory course (BUS 475/675) followed by one to three weeks in Asia. Students visit companies, factories, economic agencies, and government offices to learn more about organizational structure, government policies, and international competition and their effect on these units. Classes are held on campus before and after the field study. BUS 475/476/477 are approved IB electives. IB major, entrepreneurship major, and management major electives, and BUS 675/676/677 qualify for the entrepreneurship certificate. Consult with your academic advisor to determine applicability. Some Shidler College scholarships are available on a competitive basis to help defray the costs.

**Shidler College International Exchange Agreements**

Shidler College students can apply to study abroad in connection with several official exchange agreements between Shidler College of Business and overseas universities. These international universities include:

- Chulalongkorn University in Thailand;
- City University of Hong Kong;
- Copenhagen Business School in Denmark;
- ESC Rennes School of Business in France;
- Hong Kong University of Science and Technology;
- Keio University in Japan;
- Keio Business School (MBA) in Japan;
- Korea University;
- National Sun Yat-Sen University in Taiwan;
- National University of Singapore;
Honors and Awards

Shidler College of Business and its departments provide scholarships and awards to exceptional students. For a list of these scholarships, see the “Tuition, Fees, and Financial Aid” section of this Catalog. Detailed information on scholarships can be obtained at www.star.hawaii.edu.

Accounting

School of Accountancy
BusAd C-306
2404 Maile Way
Honolulu, HI 96822
Tel: (808) 956-7332
Fax: (808) 956-9888
Web: shidler.hawaii.edu/soa

Faculty
*H. Pourjalali, PhD (Director)—accounting
*S. Daniel, PhD—accounting
*R. Debreceny, PhD—accounting
*L. Guan, PhD—accounting
*B. Jung, PhD—accounting
*M. Kaiama, MAcc—accounting
*T. Pearson, LLM/JD—accounting
*J. N. Teruya, PhD—accounting
*T. Wang, PhD—accounting
*J. Wendell, PhD—accounting
*M. Woollen, MAcc—accounting
*D. C. Yang, PhD—accounting
*J. Zhou, PhD—accounting

Degrees Offered: BBA in accounting, MAcc, PhD in business administration, International Accounting concentration

The Academic Program

The School of Accountancy within the Shidler College of Business offers the Bachelor of Business Administration (BBA) with a major in accounting (ACC) and the Master of Accounting (MAcc) degrees. The undergraduate accounting program provides students with an educational foundation for entry into a wide range of accounting careers and enables students to pursue graduate or advanced professional education. The MAcc program provides advanced education in taxation, financial accounting, and auditing necessary for students to pursue leading positions in public practice, business, not-for-profit organizations, government, and related fields.

An accounting background will provide a competitive edge for those aspiring to become chief executive officers. Students often study accounting even though their major interests may be in other areas of business. This enables these students to have a salable skill for easy entry into a business firm.

Mission

We are an academic community with the Shidler College of Business, whose mission is:

To provide students with an accounting education relevant to a technologically advanced global economy; to advance accounting knowledge through research; and to instill students with a sense of moral, ethical, and professional obligation to society.

* Graduate Faculty
Accounting Careers

The accounting profession may be divided into the following two major segments.

Public Accounting

Specialties in this area include auditing, tax, and management advisory services. Some of the larger firms have reorganized these activities along industry lines. Students entering public accounting should prepare to become a Certified Public Accountant (CPA). Many students who graduate with an accounting degree are employed by national or international CPA firms, or by local CPA accounting firms. Some open their own independent practices after they become certified.

Other Accounting Jobs

Accounting positions in industry are available in firms engaged in manufacturing, wholesaling, retailing, banking, transportation, insurance, and real estate, as well as in hotels, entertainment enterprises, and restaurants. Positions in these organizations can be found in the areas of financial accounting, managerial accounting, internal auditing, tax accounting, and accounting information systems. Graduates also find employment as accountants in various branches of federal, state, or local governments or in not-for-profit organizations.

Undergraduate Study

BBA in Accounting

Major Requirements
- ACC 321, 323, 401, 409, 418, and 460

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Graduate Study

MAcc Degree

Admission Requirements

In addition to the Shidler College of Business graduate admission requirements, students without an undergraduate degree in accounting are required to complete the following undergraduate deficiencies in accounting: ACC 201 and 202 prior to admission to the MAcc program, and ACC 321, 323, 401, 409, and 418 prior to graduation.

Admission to the MAcc program is competitive. The school seeks individuals who have the potential for outstanding achievement in accounting, auditing, or taxation. The admissions committee primarily considers the candidate’s academic record and GMAT score and places emphasis on strong communication skills.

Degree Requirements

The MAcc degree requires 30 credits (10 courses)

Required Accounting Courses (15 credits)
- ACC 413 Law for the Accountant
- ACC 415 Advanced Financial Accounting
- ACC 616 Accounting Theory and Development
- ACC 625 Accounting and Tax Research
- ACC 660 Analysis and Decision-making

Elective Accounting Courses, three of the following (9 credits)

Students can take any 400-600 level accounting course except ACC 460 and those courses used to fulfill deficiency or core requirements. No more than two elective courses may be from the 400-level. The following tracks are recommended:

Tax concentration (any three of the following)
- ACC 407 Taxation of Business Entities
- ACC 631 Tax of Partners/Partnership
- ACC 638 Estate and Gift Taxation and Planning
- ACC 639 Multijurisdictional Taxation

Financial Reporting concentration (any three of the following)
- ACC 610 International Corporate Governance
- ACC 619 Advanced Auditing
- ACC 620 Global Accounting
- ACC 635 Advanced Public Sector Accounting
- ACC 690 Current Topics in Accounting

Additional Elective courses (6 credit hours)

Students may take any two of the following:
- Courses from the Tax or Financial Reporting tracks provided that they are not fulfilling ACC Elective requirements
- ACC 690 Current Topics in Accounting
- ACC 695 Accounting Internship (up to three credit hours of an internship course can be taken for credit)
- 400- to 600-level courses from the Shidler College of Business (BLAW, FIN, HRM, ITM, MGT, MKT, RE), the Field Study in Asia (BUS 677), or selected courses in PACE, LAW, COM, or COMG (business courses may not include MBA core classes BUS 621-632, BUS 696)

Students must complete a minimum of 30 credits to earn the Master of Accounting degree. If a course is waived, another course in the same area of study and of the same or higher level must be substituted.

Thesis Option

In consultation with their advisor, a student may opt to do a research thesis in place of ACC 660 and three elective credits. Thesis students enroll in ACC 700 Thesis Research.
Financial Economics and Institutions

Department of Financial Economics and Institutions
BusAd C-305
2404 Maile Way
Honolulu, HI 96822
Tel: (808) 956-6675
Fax: (808) 956-9887
Web: fei.shidler.hawaii.edu/

Faculty
*R. Chang, PhD (Chair)—finance
*J. Ai, PhD—risk management and insurance
B. Bystrom, MA, MBA—finance
D. Cost, JD—finance
*W. Huang, PhD—finance
*D. Hunter, PhD—finance
J. Kim, PhD—finance
*Q. Liu, PhD—finance
*J. B. Marsh, PhD—business economics
*E. Mais, PhD—finance
*D. McClain, PhD—economics
*G. Meissner, PhD—financial engineering
*M. Misawa, PhD—international finance and banking
*N. Ordway, PhD—real estate
*G. Rhee, PhD—finance
V. Roley, PhD—economics
*J. P. Suyderhoud, PhD—business economics
J. Wong—finance

Degrees Offered: BBA in finance

The Academic Program
The department offers courses in finance, business law, real estate, and insurance.

Undergraduate Study

BBA in Finance
The major in finance (FIN) develops analytical skills in the planning, management, and control of financial resources to achieve the financial goals of the organization. Central to that task is the evaluation of the risk and return consequences of financial decisions. The major financial decisions studied are the selection of assets (equipment, buildings, inventories, securities, etc.) and the choice among financing alternatives (selling stock, borrowing from a bank, issuing bonds, etc.). Students may select course sequences that concentrate on business financial management, investment management, personal financial planning, Asian finance, and real estate finance.

The major prepares students for positions and career advancement in financial institutions, retail, wholesale, and manufacturing firms; securities institutions; and personal financial planning.

Requirements
* FIN 311
* Four elective courses from:
  * FIN 301, 305, 307, 321, 331, 341, 412, 415, 444, 450, 490;
  * RE 300, 310, 320, 330, 351, 390;

Information Technology Management

Department of Information Technology Management
BusAd E-303
2404 Maile Way
Honolulu, HI 96822
Tel: (808) 956-7430
Fax: (808) 956-9889
Email: shidleritm@hawaii.edu
Web: shidler.hawaii.edu/itm

Faculty
*T. Bui, PhD (Chair)—information systems
*H. M. Chen, PhD—information systems
*E. Davidson, PhD—information systems
*F. N. Kazman, PhD—computer science
*R. Minas, PhD—information systems
*R. R. Panko, PhD—information systems
*D. Port, PhD—computer science
*B. Xiao, PhD—information systems

Degrees Offered: BBA in management information systems

The Academic Program
The focus of the Department of Information Technology Management includes management of information technologies within organizations, application, development and use of information systems for management and business.

Undergraduate Study

BBA in Management Information Systems
The Management Information Systems (MIS) major learns how to analyze opportunities for business change and growth using information technologies (IT), to design and develop business solutions that utilize IT, and to manage projects to implement IT-related change. Designing and managing information flows within and between firms and their customers is critical in today’s business enterprise. All firms in every type of industry—large or small, for-profit or not-for-profit—rely on information systems and technologies for ongoing operations and future strategies. The internet and other information technologies also create entrepreneurial opportunities for new or existing firms. Many of today’s leading firms grew rapidly from IT innovation.

The MIS major offers students the flexibility to focus course work on business analysis, system analysis and design, business analytics. MIS majors are prepared for careers in project management, business analysis, networking, system architecture and design, technical support, business analytics, and e-commerce. MIS majors are prepared to work as in-house information systems staff, as consultants for information systems and accounting firms, as independent contractors, and as business entrepreneurs. The Bureau of Labor Statistics forecasts increasing job grow for MIS-related careers.

* Graduate Faculty
Requirements
- ITM 352, 353, 354, 431
- One elective from the following: ITM 321, 322, 385, 387 (various), 433, ICS 300- or 400-level course (excluding ICS 399 or 499)
- Double majors may use the following as their elective: ACC 409, MKT 362, 363 or 410
- Students who take both ICS 111 and 211 and achieve a grade of “B” or better may petition to waive the elective requirement.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Management and Industrial Relations
Department of Management and Industrial Relations
BusAd C-301
2404 Maile Way
Honolulu, HI 96822
Tel: (808) 956-8485
Fax: (808) 956-2774
Web: mir.shidler.hawaii.edu/

Faculty
*H. D. Bess, PhD (Chair)—organizational behavior, transportation
*D. Bhawuk, PhD—cross-cultural management, positive psychology
*J. Butler, PhD—entrepreneurship
*R. H. Doktor, PhD—international business, organizational behavior, strategy
H. Folk, PhD—human resources management, international business, industrial relations
*S. Ghumman, PhD—organizational behavior, management, international management
*K. Ito, PhD—international business and strategic management
*A. Joshi, PhD—strategy, management
H. Nguyen, PhD—management
*J. Richardson, PhD—strategy, international business, entrepreneurship
*R. Robinson, PhD—angel investing, entrepreneurship and negotiations

Degrees Offered: BBA in entrepreneurship, BBA in human resources management, BBA in international business, BBA in management, Master of Human Resource Management

The Academic Program
The Department of Management and Industrial Relations teaches courses in the following areas: international management, comparative management, entrepreneurship, organizational behavior, human resources management (HRM), and industrial relations (IR). The department offers majors in human resources management, international business, and management (MGT).

Undergraduate Study

BBA in Entrepreneurship
Requirements
- MGT 320
- FIN 341
- MKT 372
- Two elective courses from
  - BUS 475/476, 477
  - FIN 307
  - HRM 351
  - ITM 321, 385
  - MGT 341, 344, 345, 450, 461
  - MKT 341, 351, 352, 362, 363

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

BBA in Human Resources Management
Requirements
- HRM 351
- HRM 468
- Four elective courses from
  - HRM 353, 354, 361, 453, 455
  - HRM 463, 465, 467, 469
  - MGT 341, 344

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

BBA in International Business (Double major only)
Requirements
- FIN 321
- MKT 381
- MGT 342 or MGT 343
- Two elective courses from
  - ACC 460
  - ANTH 416
  - ASAN 312, 320
  - BUS 367 (with international focus), 475/476 (3 credits only), 477
  - BLAW 360
  - ECON 415, 460, 461
  - FIN 331, 444, 470, 490C
  - HRM 469
  - MGT 320, 342, 343, 344 (with international focus), 460
  - MKT 361 (with international focus)
  - POLS 306, 315, 316
  - TIM 324, 425, 442
- Third-year foreign language (301, 302 or both)
- Integrative, international experience

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.
**BBA in Management**

**Requirements**
- HRM 351
- MGT 320(1B)
- MGT 341
- Two electives from
  - HRM 353, 354, 361, 453, 455, 463, 465, 467, 469(1B);
  - ITM 321;
  - MGT 342(1B), 343(1B), 344, 345, 348, 399, 450, 461;
  - MKT 321 if double majoring with Marketing

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

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**Marketing**

Department of Marketing  
BusAd C-303  
2404 Maile Way  
Honolulu, HI 96822  
Tel: (808) 956-6692  
Fax: (808) 956-9886  
Email: mktg@hawaii.edu  
Web: mkt.shidler.hawaii.edu/

**Faculty**
- D. L. Alden, PhD—marketing communications, healthcare marketing, cross-cultural consumer behavior
- Q. Chen, PhD—e-commerce, online consumer behavior, consumer well-being
- R. Garrity, MS—principles of marketing, global sales management, cross-cultural consumer behavior
- N. Hartmann, PhD—personal selling, sales management, retail management
- M. Hu, PhD—luxury marketing, international marketing, consumer behavior research
- E. M. Okada, PhD—marketing strategy, consumer decision making, new ventures marketing
- A. P. Palia, DBA—international business
- N. E. Synodinos, PhD—consumer behavior, marketing research
- S. L. Vargo, PhD—marketing theory, service-encounter evaluation, buyer-seller relationships, brand evaluation and extension
- J. R. Wills Jr., DBA—international marketing, technology marketing, marketing strategy

**Degrees Offered**: BBA in marketing

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**The Academic Program**

Marketing (MKT) involves studying the ways that organizations create and maintain mutually satisfying exchanges between themselves and their customers. Marketing course work helps students learn how to effectively and efficiently manage components of the marketing mix: product, distribution, communications, and price.

Marketing offers courses in marketing research, marketing strategies, consumer behavior, personal selling, internet marketing, advertising and promotion, entrepreneurial marketing, retailing, and multinational operations. After completing the marketing major, the student should possess knowledge that is applicable to a wide range of professional careers. These careers include advertising account executive, marketing manager, sales manager, and marketing research manager.

* Graduate Faculty
The College of Education offers three baccalaureate degrees, two post-baccalaureate certificates, nine master’s degrees, four graduate certificates, and four doctoral degrees. State approved teacher education programs (SATEP), leading to initial teacher licensure, are offered at the baccalaureate, post-baccalaureate, and master’s levels. Many COE programs are offered through distance education, including interactive video, web-based, and hybrid formats. For more information, contact individual departments or visit the COE website at www.coe.hawaii.edu.

**Vision and Mission**

**Vision**

The College of Education envisions a community of educators who provide innovative research, teaching, and leadership in an effort to further the field of education and prepare professionals to contribute to a just, diverse, and democratic society, and enhance the well-being of the Native Hawaiian people and others across the Pacific Basin through education. Our vision guides the direction and work of the college in and beyond Hawai’i and is informed by a sense of purpose and a sense of place.

**Mission**

Our mission is to collaborate as a professional community in three primary areas of responsibility or kuleana:

- Teaching—prepare new educational professionals and provide on-going professional development in education.
- Research—increase the knowledge base in education and related fields through the production and application of educational research.
- Service—serve as partners and leaders for excellence in education.

**Philosophy**

The College of Education’s philosophy of responsibility is reflected in our purposes, which are to promote excellence in teaching, scholarship, and service; encourage life-long learning; and develop educational leadership at all levels.

**Accreditation**

The College of Education holds the following national accreditations:

- National Council for the Accreditation of Teacher Education (NCATE)—Initial and advanced educator preparation programs
- Council on Rehabilitation Education (CORE)—Rehabilitation Counselor Education program
Undergraduate Programs

The college offers the bachelor of education (BEd) degree in elementary education (with early childhood, Hawaiian education, and special education dual preparation available), in secondary education by academic major, and the bachelor of science (BS) degree in kinesiology and rehabilitation science (KRS) with specializations in health and exercise science, and in health and physical education. Specific degree requirements for these undergraduate programs and General Education Requirements are available in the Office of Student Academic Services (OSAS), Everly Hall 126 or on the Web. For program requirements for the BEd, see the Institute for Teacher Education section of the Catalog. For program requirements for the BS in KRS, see the Kinesiology and Rehabilitation Science section of the Catalog. The BEd in Elementary Education is offered on campus at UH Mānoa and statewide through distance education.

Admissions Requirements for Undergraduate Majors

Students applying for admission to the bachelor of education (BEd) and the bachelor of science (BS) programs must meet all UH Mānoa admission requirements and complete the COE Mākalei Online Module. Majors should follow specific General Education Requirements listed on their program sheets. Please consult an academic advisor. During the admission process, applicants may be referred to, or interviewed by, appropriate faculty members regarding their qualifications and potential as educators. The behavior of applicants should reflect high ethical and professional standards at all times. Behavior may be evaluated on the basis of past experience and current interaction with college personnel.

To declare a major, see makalei.coe.hawaii.edu/student. Admission requirements are subject to change. Call OSAS for updated information.

Additional Requirements for Licensure Track/State Approved Teacher Education Programs (SATEPs)

The college offers licensure track/state approved teacher education programs (SATEPs) that qualify program completers to apply for licensure with the Hawai‘i Teacher Standards Board (HTSB). The college also offers a prelicensure track for students who wish to declare an education major. However, participation in the prelicensure track does not guarantee admission to a SATEP. Students pursuing a teaching license also must meet the following criteria or those in effect due to HTSB actions at the time of application:

1. Complete a minimum of 55 credit hours from an accredited college.
2. Cumulative GPA of 2.75 for all postsecondary institutions attended.
3. For secondary education majors, GPA of 2.75 in the content major. Students pursuing a secondary major in mathematics, physical education, or science may be considered for admission to the baccalaureate level SATEP with a minimum cumulative GPA of 2.50 and a major cumulative GPA of at least 2.50.
4. PRAXIS® Core Academic Skills for Educators with minimal HTSB passing scores in reading, writing, and mathematics subtests, or other approved options to demonstrate basic skills in reading, writing, and mathematics. Contact an OSAS academic advisor.

Commission on Accreditation of Athletic Training Education (CAATE)—Entry-Level Athletic Training Program and Post-Professional Athletic Training Program

Degrees and Certificates/Licenses

Bachelor’s Degrees: BEd in elementary education (with early childhood, Hawaiian education, and special education dual preparation available), BEd in secondary education by academic major, and BS in kinesiology and rehabilitation science.

Master’s Degrees: MEd in curriculum studies, MEd in early childhood education, MEd in educational administration, MEd in educational foundations, MEd in educational psychology, MEd in learning design and technology, MEd in special education, MEdT in teaching, MS in Athletic Training (entry-level/professional and post-professional), MS in Kinesiology and Rehabilitation Science with options in physical activity, adapted physical activity, and rehabilitation counselor education.

Doctoral Degrees: PhD in education (with specializations in curriculum and instruction, educational administration, educational foundations, educational policy studies, exceptionalities and kinesiology), PhD in educational psychology, PhD in learning design and technology, and EdD in professional educational practice.

Certificates: PBCSE (post-baccalaureate certificate in secondary education), PBSPED (post-baccalaureate certificate in special education), and graduate certificates in Disability and Diversity Studies, Online Learning and Teaching, PK-3 Education, and Reading K-12.

Advising

BEd Elementary Education, Dual Teacher Preparation Programs in Elementary/Special Education, Elementary/Early Childhood Education, Early Childhood/Special Education, and Elementary/Hawaiian Education; Secondary Education; BS in Kinesiology and Rehabilitation Science with specializations in health and exercise science, and in health and physical education; Post-baccalaureate Certificate in Secondary Education; Post-Baccalaureate Certificate in Special Education; and Master of Education in Teaching

Office of Student Academic Services (OSAS)
Director, Melvin E. Spencer, III
Everly Hall 126
1776 University Avenue
Honolulu, HI 96822
Tel: (808) 956-7849 / 956-7915
Fax: (808) 956-4271
Email: osas@hawaii.edu
Web: coe.hawaii.edu/admissions-advising/advising-osas

BS in Kinesiology and Rehabilitation Science
Department of Kinesiology and Rehabilitation Science
Physical Education/Athletics 231
1337 Lower Campus Road
Honolulu, HI 96822
Tel: (808) 956-7606
Fax: (808) 956-7976

Graduate Degrees

Contact the departmental offices of the graduate field of study in the College of Education.
5. Demonstrate oral and non-verbal communication competencies through the successful completion of a Personal Admissions Interview(s). The purpose of the interview is to assess fluency of oral communication, interest in teaching, student motivation and suitability to the teaching profession, including appropriate professional dispositions. Qualified students who are off-island during the semester of SATEP application may be granted a telephone or web-based interview.

6. Certain General Education and College of Education program requirements may be met per established Memorandum of Agreements with the following UH Community Colleges and programs: AS in Early Childhood Education from Hawai‘i CC, AS in Early Childhood Education-Pre-school Option from Honolulu CC, AA in Liberal Arts with Concentrations in Elementary/Special Education or Secondary Education from Kapiolani CC, AA in Teaching from Leeward CC, and AS in Human Services with Early Childhood Specialization from Maui CC. Please contact a COE academic advisor for more details.

7. A minimum of 40 hours of documented group leadership experience, paid or volunteer, with a group of school-age children at the grade level(s) of most interest in future teaching.

Admission requirements are subject to change. Call OSAS for updated information.

Applicants should be aware that admission to a SATEP does not guarantee admission to clinical placements, including practicum, student teaching, internship, or teaching residency. Students’ progress in state approved teacher education programs will be evaluated at transition points throughout the program. Also required for clinical placement:

1. Original TB certificate clearance as required by Hawai‘i Department of Education school regulations. Contact the Department of Health for more information.
2. Liability insurance.
3. Hawai‘i Department of Education fingerprinting and background check.
4. Transportation to and from the school sites is the student’s responsibility.

The HTSB requires passage of the appropriate content test (e.g., Praxis II, ACTFL) prior to student teaching, internship, or teaching residency. The HTSB also requires a Pre-Service Performance Assessment (edTPA/PPAT) during student teaching, internship, or teaching residency. During the 2016-17 academic year, all student teachers must submit a completed edTPA/PPAT portfolio for national scoring in order to be recommended for teacher licensure. Beginning Fall 2017 and thereafter, all student teachers must submit and pass the edTPA/PPAT at the level set by HTSB to be recommended for teacher licensure. Note that there are monetary costs associated with the Praxis II, ACTFL, and edTPA/PPAT. Please see a COE academic advisor for more details.

Requests for Reconsideration of Negative Admissions Decisions

Students who are denied admission to a College of Education degree program or SATEP may request reconsideration of their application from the Director of OSAS. However, only students who have achieved a minimum overall cumulative GPA of 2.5 and who attain the minimum qualifying passing score on the PRAXIS® Core Academic Skills for Educators exam may request reconsideration for admission to a SATEP.

In addition, students must show strong evidence of future potential in the field and a strong record of recent scholarship.

Application Procedures and Deadlines

1. Applicants for the BEd and BS degrees should follow all appropriate UH Mānoa procedures.
2. All SATEP applicants must submit a current College of Education application form to OSAS and submit additional application materials outlined at this website: coe.hawaii.edu/undergraduate/forms.
3. SATEP applicants are responsible for making arrangements for the interviews and the PRAXIS® Core Academic Skills for Educators exam, and for submitting documentation of field experience hours.

Application for degree programs follows UH Mānoa deadlines. For SATEP application, priority deadline is February 1, and final deadline is March 1 for fall admission; priority deadline is August 1, and final deadline is September 1 for spring admission. Be aware that not every program admits every semester. Deadlines are subject to change. Call OSAS for updated information.

All students in the BEd and BS programs should make an appointment for a graduation check with an academic advisor in June or July for the September 15 graduation deadline and in November or December for the February 15 deadline. No late applications will be accepted.

SATEP participants should check with an advisor to ensure compliance with all completion requirements. OSAS will not recommend candidates to the HTSB for licensure until all requirements are satisfied.

Field and Clinical Experiences

The College of Education plans, arranges, and supervises all required field and clinical experiences, including student teaching, at the elementary and secondary levels in public and private schools. Since student teaching is a full-time experience, students may not register concurrently for other courses and are strongly advised not to undertake employment during any required student teaching. Check with the advisors for additional prerequisites related to classified status, course completion, grade requirements, GPA requirements, Praxis II content knowledge tests, and required forms before registering for student teaching. Please be aware of deadlines, particularly those after which no late applications will be accepted.
Those undertaking field and clinical experiences, including student teaching or teaching residency as part of a SATEP, must have met the following prerequisites:

- Enrollment in the College of Education as a classified student and completion of all course work necessary;
- A cumulative GPA of not less than that required for admission to the SATEP;
- Completion of the Student Teaching Application from the Office of Student Academic Services;
- Liability insurance;
- Hawai‘i Department of Education fingerprinting and background check.

There is typically no student teaching or teaching residency during the summer session.

The HTSB requires passage of the Praxis II content examination or other approved options for demonstrating content knowledge prior to student teaching. The HTSB requires a Pre-Service Performance Assessment (i.e., edTPA for COE candidates) during student teaching, internship, or teaching residency. Note that there are monetary costs associated with the Praxis II, ACTFL, and edTPA. Students should check with their academic advisor concerning specific requirements.

**Graduate Programs**

**Master’s Degrees**

The College of Education offers MEd degrees in curriculum studies, early childhood education, educational administration, educational foundations, educational psychology, learning design and technology, and special education. The MEd programs in curriculum studies and early childhood education are in the Department of Curriculum Studies. Other MEd programs are in departments of the same name.

The College of Education also offers Master of Science degrees in Athletic Training (AT) and Kinesiology and Rehabilitation Science (KRS). The MS degree in AT is a two-year program with primary focus in either the Entry-level-Graduate Athletic Training Education Program (EL-GATEP) or Post-professional Advanced Athletic Training Education Program (PP-AATEP). The MS degree in KRS is designed as a two- to three-year program of study for students with advanced knowledge, skills, research, and clinical/field experiences in one of the following program areas: Physical Activity, Adapted Physical Activity, and Rehabilitation Counselor Education.

The MEdT, a two-year, field-based program, is designed for students who have earned baccalaureate degrees in fields other than education. Graduates are eligible for state teacher licensure in either elementary or secondary education. See the “Institute for Teacher Education” for more information.

**Doctoral Degrees**

Doctor of Philosophy in Education (PhD)
Wist 113
1776 University Avenue
Honolulu, HI 96822
Tel: (808) 956-7913

**Graduate Faculty**

S. B. Roberts, EdD (Chair)—curriculum administration, policy, professional socialization, school administration
A. Bartlett, PhD—literacy, teacher education

M. Benham, EdD—Hawai‘inuiâkea School of Hawaiian Knowledge, educational administration, educational policy, indigenous education (K-post secondary), qualitative inquiry, leadership/community based
K. F. Berg, PhD—collaborative learning, educational psychology
R. Black, EdD—mental retardation transition, students at risk, research design
B. Cheng, EdD—comparative and international education, education policy
P. Chinn, EdD—elementary and secondary science education
M. Conway, PhD—disability studies, transition, postsecondary supports, sensory impairment, assistive technology
B. G. Cook, PhD—mild/moderate disabilities, inclusion, evidence-based practices, higher education and students with disabilities
L. Cook, PhD—mild/moderate disabilities, inclusion, evidence-based practices, and students with disabilities
S. Cook, PhD—learning disabilities, evidence based practices, co-teaching, pre-service teacher education, assessment in special education
J. A. Daniels, EdD—school, development, adolescent, group, homeless children, loss and transition counseling
P. Deering, PhD—curriculum and instruction, middle level education, social studies education, qualitative research
X. Di, EdD—teacher education, multicultural and international education
D. P. Ericson, PhD—philosophy of education, educational policy, study of national educational systems
C. Frambaugh-Kritzer, PhD—language and literacy
C. P. Fulford, PhD—educational technology, instructional and visual design
L. A. Fulton, PhD—elementary science education, teacher education, qualitative research
H. L. Furuto, PhD—mathematics education, ethnomathematics, quantitative research
D. Grace, EdD—language arts, media studies, early childhood
P. E. Halagao, PhD—social studies, multicultural education and Filipina/o curriculum and pedagogy
R. H. Heck, PhD—leadership and governance, organizational theory, policy
R. Hetzler, PhD—exercise physiology with interest in body composition and metabolism
C. Hitchcock, PhD—disability studies
C. Ho, PhD—educational technology
E. S. Hoffman, EdD—educational technology, e-learning, qualitative research methods
A. A. Jenkins, PhD—mild/moderate disabilities, content strategies/inclusive education, collaboration
J. L. Johnson, DrPH—exceptionalities, early childhood
R. Johnson, EdD—early childhood and elementary education
J. Kaomea, PhD—Native Hawaiian and indigenous issues in education; postcolonial theory
C. L. Kessler, EdD—K-6 social studies-history education; anti-bullying; health advocacy
I. F. Kimura, PhD—kinesiology, athletic training and biomechanics
D. Leake, PhD—transition, self-determination, child and adolescent mental health
P. Leong, EdD—educational technology, distance education, virtual worlds
M. G. Lin, PhD—educational technology, participatory learning, open access resources
C. M. Lucas, PhD—professional development practices, leadership theories, partnerships
B. J. Lum, PhD—philosophy of education, human development, peace education, social and cultural studies
M. Maaka, PhD—indigenous education, language and literacy in education, multicultural education
J. K. Maeda, PhD—physical education, elementary and adapted physical education pedagogy, and professional development, applied behavior analysis
D. McDougall, EdD—behavioral self-control (self-management, self-monitoring), behavioral disorders/learning disabilities, inclusion/integration, applied behavior analysis, special education law
H. McEwan, PhD—curriculum theory, philosophy of teaching
P. McKimmy, EdD—policy and information technology solutions
M. P. Menchaca, EdD—educational technology integration, online teaching and learning, distance education, multiculturalism and social justice, and communities of practice
J. A. S. Moniz, PhD—multicultural education, social studies, research methods
C. Morgan, PhD—promoting youth physical activity; benefits, assessment, levels, and related factors of youth physical activity
L. S. Muccio, PhD—early childhood, inclusive education, teacher action research
N. Murata, PhD—general physical education pedagogy, adapted physical education, special education/transition, and professional development
K. L. Murphy, DPE, CAPE—physical education pedagogy, adapted physical education
W. D. Narkon, PhD—mild/moderate disabilities, learning disabilities, reading strategies
T. T. T. Nguyen, EdD—educational leadership, educational technology, internet safety
M. J. Noonan, PhD—moderate and severe disabilities, early intervention
L. Novosel, PhD—mild/moderate disabilities, design-based research, adolescent literacy, social and emotional learning, culturally responsive teaching pedagogy
Y. Oha, PhD—athletic training, curriculum development, anatomy
K. Oliveira, PhD—Hawaiian language, culture and geography
T. O’Neill, PhD—science education with a focus on multicultural science education and the teaching and learning of science for social justice
C. Ornelles, PhD—mild/moderate disabilities, students at risk, teacher education
L. Oshita, PhD—mild/moderate disabilities, teacher education, distance education advising
S. Paek, EdD—educational technology, statistical analysis and evaluation
M. E. Pareman, HSD, MPH—school and college health education
L. H. Phan, PhD—international education, language-cultural pedagogy, identity studies, TESOL, critical theories of education and language
E. Ponte, PhD—second language studies, teacher education, assessment and evaluation
F. Portenger, PhD—science education
J. H. Prins, PhD—kinesiology
K. Rao, PhD—assistive technology, distance education, universal design for learning, English language learners and literacy
G. G. Reed, PhD—social and cultural foundations, values and education, comparative education
L. Reed, PhD—emotional and behavioral disorders, evidence based practices: identification, dissemination, research-to-practice gap, academic and behavioral interventions
K. D. Roberts, PhD—assistive technology, culturally responsive education, learning disabilities, and educational research
S. Robinson, PhD—secondary teacher preparation, science education
C. Schmidt, PhD, BCBA-D—autism spectrum disorders, applied behavior analysis
M. Schmidt, PhD—educational technology, design-based research, assistive technology, autism
A. K. Serna, PhD—health education, school health programs, elementary education
P. Sheehy, PhD—mild/moderate and severe disabilities, families, multicultural issues
J. Simpson Steele, PhD—elementary teacher preparation, performing arts education, performance ethnography
H. Slovin, EdD—mathematics education
C. K. Sorensen, PhD—educational technology
E. Spiteri, PhD—English/language arts methods; secondary education, adolescent literacy, disciplinary literacy, teacher literacy identity and transformation, teacher beliefs, sociocultural, psycholinguistic, reader response and multicultural studies, multiple/21st century literacies
C. D. Stickley, PhD, ATC—athletic training and biomechanics, exercise physiology
N. J. Stodden, PhD—disability and diversity, school-based supports
R. A. Stodden, PhD—mental retardation, career/vocational special education
E. H. Tamura, PhD—history of education, ethnic and minority issues, Asian-American history
K. Tamura, PhD, ATC—athletic training and biomechanics
C. Tanabe, PhD—educational law and policy, philosophy of education
H. Tavares, PhD—politics of education, critical theories of education
J. A. Torralba, PhD—science education
S. Twomey, PhD—literacy, gender
J. Wells, PhD—autism, severe disabilities
B. L. Williams, PhD—art education
K. Wong, PhD—Hawaiian language and culture
K. K. Yamamoto, PhD—rehabilitation counseling, transition, and disability-related issues
J. Yoshioka, PhD—science education, teacher education
D. B. Young, EdD—science education
J. W. L. Yuen, EdD—diversity, inclusion, accessibility
J. Zilliox, EdD—mathematics education
D. K. Zuercher, PhD—teacher education, middle level, health, qualitative research methodology, language arts, fine arts

Cooperating Graduate Faculty
W. S. Nishimoto, PhD—oral history, life history, interviewing in qualitative research

Affiliate Graduate Faculty
P. G. LeMahieu, PhD—educational research methodology, statistical analysis, evaluations and measurement

The doctor of philosophy in education (PhD) is a college-wide degree awarded for distinguished academic preparation for professional practice and research in the field of education. The program is designed to enhance and facilitate educational, social, and economic growth locally, nationally, and internationally with a pool of highly qualified educational scholars and leaders.

The quality of a candidate’s work is judged by a variety of experiences, which include the College of Education general and specialization area courses, culminating in a field project or internship, a set of comprehensive and final examinations, and a dissertation. The dissertation is based on a selected research problem and is a significant part of the candidate’s experience. Six areas of specialization are currently available: curriculum and instruction, educational administration, educational foundations, educational policy studies, exceptionalities, and kinesiology.

Application for admission to the PhD program will be considered for the fall semester only and is made to Graduate Education and to the College of Education. Students must meet the requirements of both the Graduate Education and the College of Education, including acceptable scores on the Graduate Record Examination (GRE) verbal, quantitative, and analytic writing assessment. Applicants from foreign countries where English is not the dominant language are required to have a TOEFL score of 600 (regardless of degree completion from
other U.S. institutions). A master’s degree from an accredited university or college is required with evidence of a minimum of three years of experience in the field of education. The applicant must demonstrate competence in writing and present a written statement of career goals and academic objectives. At least three letters of recommendation are required. An oral interview may be conducted.

For further information, applicants may contact the PhD in Education Program at (808) 956-7913.

Specialization in Curriculum and Instruction

The specialization in Curriculum and Instruction develops educational leaders in curriculum development, teaching, curriculum evaluation, and/or teacher education and professional development. The program varies in the number of credit hours required, depending upon the candidate’s qualifications, and includes courses required for all doctoral students enrolled in the College of Education; courses in an area of specialization, such as issues and trends in curriculum, teaching and learning, curriculum and program evaluation, and research on teacher education and professional development; breadth courses; a field project or an internship in college teaching; and the dissertation.

Specialization in Educational Administration

The primary purpose of this area of specialization is to develop educational leaders in elementary, secondary, and higher education settings. Areas of emphasis within the program include management and leadership, organizational theory, policy and governance, organizational socialization, and research methods.

The program includes courses required of all doctoral students in the college, courses in an area of specialization (K–12 or higher education), courses taken outside the department, a field project/internship or an apprenticeship in college teaching, and the dissertation.

Specialization in Educational Foundations

This area of specialization prepares educational professionals with an understanding of the historical, philosophical, cultural, social, and political contexts of education so that they can make informed and wise decisions about educational problems and policy issues. Graduates with the PhD are expected to exert leadership in the field of education and deal with those aspects and problems in society that need to be taken into account in advancing educational thought, policy development, and practice, especially where these concern the social role of the school and other educational agencies. The program of study varies in the number of credits required, depending upon the candidate’s qualifications; college and departmental course requirements; course work focused on an area of emphasis in history, philosophy, or comparative or social foundations of education; courses outside the department; a field project/internship or an apprenticeship in college teaching; qualifying and comprehensive examinations; and the dissertation.

Specialization in Educational Policy Studies

Educational policy studies consists of a multidisciplinary program of study and research concerned with identifying and ameliorating significant educational problems. It draws upon concepts and research methods from a variety of fields (including the social sciences, history, law, and philosophy) in defining problems and formulating solutions. The purpose of this specialization is to prepare professionals from diverse backgrounds for effective informed engagement in this process. At the same times, it prepares such persons to pursue research and service agendas geared toward lifting policy analysis, discourse, and action to new levels. The program varies in the number of credit hours required, depending upon the candidate’s qualifications, and includes courses required of all doctoral students in the college, courses in the specialization, breadth courses taken outside the specialization, a field project/internship, or an apprenticeship in college teaching, and the dissertation.

Specialization in Exceptionalities

This area of specialization prepares professionals to work as leaders in the education and support of individuals who have unique needs, often due to disabilities. The field is broad, addressing life-span concerns and involving such services as special education, advocacy, family support, community services, and vocational training and support. Graduates of the program are expected to assume leadership roles addressing local, regional, national, and international issues related to research and higher education and/or program development and evaluation. The program varies in the number of credit hours required, depending on the candidate’s qualifications, and includes courses required by the college, courses in the specialization, courses that provide an emphasis/breadth, a field project/internship or an apprenticeship in college teaching, and the dissertation.

Specialization in Kinesiology

This area of specialization prepares professionals to work as leaders in adapted physical activity or athletic training (BOC), and applied biomechanics. This discipline is based in the biological and physical sciences as well as in education. This foundation will be reinforced via course work, research, clinical/practical experiences in teaching, supervision, and mentorship experiences in the two areas specified above.

Doctor of Philosophy in Educational Psychology (PhD)

See “Educational Psychology.”

Doctor of Philosophy in Learning Design and Technology (PhD)

See “Learning Design and Technology.”

Doctor in Professional Educational Practice (EdD)

The EdD professional practice doctorate in education is in line with the recent call by the American Educational Research Association (AERA) to offer advanced degrees of professional practice that are distinct from doctoral research degrees in education. Professional practice doctorates in education are advanced degree programs aimed at preparing professionals for leadership roles at all levels of education, as well as in other positions where the main interest is the application of research in education settings.

Completing the EdD Degree

The EdD at the College of Education will be accessible to qualified candidates across the state, and require approximately 64 semester hours of credit spread over three years of study. Students will be organized in cohorts to encourage collaboration on projects. Instruction will be conducted in a combination of face-to-face course work during the summer, fall, and spring semesters (40%), online instruction (20%), participation in field-based projects during fall and spring semesters (40%).
Admission Requirements
The COE invites applications from prospective students with outstanding academic records and demonstrated potential to succeed in a professional practice doctoral program. The following is a summary of admissions requirements and course work. Detailed information is available on the COE website: coe.hawaii.edu/academics/educational-foundations/edd.
- Master’s degree
- GPA of 3.0
- At least five years of experience in an education-related field
- Evidence of competence as a writer

Hawai‘i Teacher Licensure Programs
See the “Institute for Teacher Education,” “Kinesiology and Rehabilitation Science,” and “Special Education” sections within the College of Education for more details on BEd, post-baccalaureate, and MEdT options for teacher licensure.

Research Units
Center on Disability Studies
1410 Lower Campus Road, Bldg 171F
Honolulu, HI 96822
Tel: (808) 956-5462
Fax: (808) 956-7878
Email: cds@hawaii.edu
Web: www.cds.hawaii.edu

The Center on Disability Studies (CDS) is a UH Board of Regents recognized organized research unit (ORU) focused on interdisciplinary education, community service and technical assistance, research and evaluation, and information dissemination. The CDS was established in 1988 as the Hawai‘i University Affiliated Program, and is a charter member of the Association of University Centers on Disability (AUCD). This national network of university centers focuses on education, research, and service activities, which impact upon the quality of life of persons with disabilities across the nation. Beginning in 1988 with core funding of only $250,000 and a staff of four, the CDS has leveraged resources to its current level of funding of almost 15 million dollars and 40 projects, with more than 90 faculty and staff.

The CDS conducts a wide range of education, research, and service activities in collaboration with other disciplines. These activities are centered around several initiative areas: school and community inclusion; special health needs; transition, postsecondary education, and employment; mental health; and Pacific outreach. These initiative areas reflect a commitment to evidence-based practice and interdisciplinary cooperation within an academic, community, and family context. Activities strive to be culturally sensitive and demonstrate honor and respect for individual differences in behavior, attitudes, beliefs, and interpersonal styles. CDS activities reflect an organizational commitment to excellence and evidence-based practices. Faculty and staff are mentored, supported, and encouraged to excel.

The CDS offers an interdisciplinary Certificate in Disability and Diversity Studies, a 15-credit course work grounded in the interdisciplinary process to promote effective, efficient, and culturally sensitive services for persons with disabilities of all ages. This program enables graduate students to acquire the skills needed to collaborate through joint planning, decision-making, and goal setting, gaining the perspective of mutual understanding and respect for persons with disabilities and the contributions of other disciplines. The CDS also offers undergraduate students courses in disability studies, disability culture, and creating universally designed environments.

The CDS and Department of Special Education offer a six course sequence for individuals interested in becoming a Board Certified Behavior Analyst (graduate level/classified or unclassified) and a four course sequence for a Board Certified Assistant Behavior Analyst (undergraduate level). The Behavior Analyst Certification Board, Inc.® has approved the course sequences as meeting the course work requirements for eligibility to take the Board Certified Behavior Analyst Examination® or the Board Certified Assistant Behavior Analyst Examination.®

Each year, the CDS sponsors the Pacific Rim Conference on Disabilities (Pac Rim), to promote collaboration and to impact future choices for persons with disabilities. Pac Rim focuses on disseminating information on promising practices, evidence-based research, and emerging issues with the communities it serves. This conference has been held annually for the past 30 years, with an attendance of approximately 1,000 from the state, region, nation, and international communities. Special efforts are made to provide support to enable persons with disabilities, self-advocates, parents, and family members of persons with disabilities to attend.

CDS publishes an international scholarly publication in the field of disability studies, The Review of Disability Studies: An International Journal (RDS). RDS is an internationally-focused academic journal in the field of Disability Studies, containing research articles, essays, bibliographies, and reviews of materials relating to the culture of disability and people with disabilities. It also publishes forums on disability topics brought together by forum editors of international stature. Poetry, short stories, creative essays, photographs, and art works related to disability are also published. RDS is published four times a year, in both print and electronic format.

Curriculum Research & Development Group
Castle Memorial 132
1776 University Avenue
Honolulu, HI 96822
Tel: (808) 956-7961
Fax: (808) 956-9486
Email: crdg@hawaii.edu
Web: manoa.hawaii.edu/crdg/

The Curriculum Research & Development Group (CRDG), with its partner laboratory school, is an organized research unit in the College of Education at UH Mānoa that contributes to the body of professional knowledge and practice in teaching and learning, curriculum development, program dissemination and implementation, evaluation and assessment, and school improvement. CRDG conducts research and creates, evaluates, disseminates, and supports educational programs that serve students, teachers, parents, and other educators in grades pre-K–20.

CRDG has ongoing research, curriculum development, and teacher professional development efforts in five focus areas: science, technology, engineering, and mathematics (STEM) education; Hawai‘i, Asia, and the Pacific; serving diverse learners; educational technology development; and designing educational systems.

CRDG work influences change in curriculum, instruction, assessment, and school systems by creating programs and practices that result in improved student learning. CRDG concerns
itself with the P–20 continuum of education, including those who receive and those who deliver educational programs and services. CRDG assembles teams of academic scholars, teachers, design specialists, evaluators, and others to create instructional programs and professional development services that improve learning, teaching, and assessment. While CRDG faculty are concerned with and address current needs, their primary focus is on creating innovations that by their very nature are intended to go beyond current practice to investigating and creating quality programs and materials for the future. Support for CRDG work comes from a mix of funding sources including the UH, other state of Hawaiʻi agencies, federal governmental granting agencies, private foundations, and pro bono services from the academic community, locally, nationally, and internationally.

CRDG conducts its work in partnership with the University Laboratory School (ULS). ULS, with its culturally diverse student body, provides an essential experimental ground for developing and testing educational ideas and programs aimed at improving teaching, learning, and assessment. The school enrolls approximately 450 students in grades K–12 and serves as a demonstration site for exemplary school practices.

Student Organizations

The College of Education Student Association (CESA) is open to all persons interested in teacher education. CESA members participate in college committees and projects and sponsor various activities for education students. CESA is an affiliate of the Student National Education Association. For more information, call (808) 956-7849 or email cesa@hawaii.edu.

All doctoral students are eligible to participate in the College of Education Doctoral Student Association (COEDSA). COEDSA sponsors activities and workshops on matters of concern to doctoral students. For more information, visit COEDSA’s website at: www.hawaii.edu/coedsa/.

Honors and Scholarships

Each semester, the College of Education recognizes the scholastic performance of students who achieve a GPA of 3.5 or better by placing them on the Dean’s List. To be eligible for the Dean’s List, students must successfully complete at least 15 credits during the semester. Additionally, the college awards the distinction of being student marshals at commencement exercises to those students who demonstrate high scholastic achievement, outstanding character, and extraordinary potential for teaching. Exemplary students also are invited to join the College of Education’s chapter of Pi Lambda Theta, a national education honorary society.

The College of Education makes scholarship support available to classified undergraduate and graduate students. In 2014-2015, 176 students received scholarships totaling over $278,000. For information, contact the Office of Student Academic Services at (808) 956-7849.

Curriculum Studies

Everly Hall 224  
1776 University Avenue  
Honolulu, HI 96822  
Tel. (808) 956-4401  
Fax: (808) 956-9905

Web: coe.hawaii.edu/academics/curriculum-studies

Faculty

*A. Bartlett, PhD (Chair)—literacy education, children’s literature  
*K. Cashman, PhD—Indigenous teacher education, art education, storytelling  
*P. Chinn, EdD—elementary and secondary science education, culture and science studies  
*R. Chun, MEd—early childhood education  
*P. Deering, PhD—social studies, middle school curriculum  
*K. K. Faria, MEd—Hawaiian language immersion, teacher education  
*L. H. L. Furuto, PhD—mathematics education, ethnomathematics, quantitative research  
*P. Halagao, PhD—social studies, multicultural education, Filipino curriculum and pedagogy  
*A. Henward, PhD—early childhood education, media, culture  
*R. Johnson, PhD—elementary and early childhood education  
*J. Kaomea, PhD (C & I Coordinator)—Indigenous education, qualitative research, elementary mathematics  
G. (Kaloha) Krug, PhD—Hawaiian language immersion education, teacher education  
*E. K. Kukahiko, PhD—Hawaiian language immersion education, teacher education  
*M. K. Lenchanko, MEdT—Indigenous education and curriculum development  
*M. Maaka, PhD—Indigenous education, language and cognition, research methodologies  
*T. O’Neill, PhD—science education  
*S. Twomey, PhD—critical literacy, teacher education, poststructuralism, feminist theory, drama education  
*B. L. Williams, PhD—art education

Cooperating Graduate Faculty

L. M. Baron, EdD—teachers’ beliefs and practices, quantitative literacy, critical action research  
K. F. Berg, PhD—educational psychology, cooperative learning  
R. S. Black, EdD—mental retardation transition, students at risk, research design  
S. M. Buelow, PhD—literacy and reading education, elementary teacher preparation, 21st century literacies  
B. D. DeBaryshe, PhD—educational measurement, early childhood  
D. P. Ericson, PhD—philosophy of education, educational policy  
C. Frambaugh-Kritzer, PhD—adolescent literacies, new literacies, disciplinary literacies  
L. A. Fulton, PhD—elementary science education, teacher education, qualitative research  
D. Grace, EdD—language, literacy, media studies, early childhood  
R. K. Hertzler, PhD—exercise physiology with interest in body composition and metabolism  
C. Kessler, EdD—K-6 social studies-history education; anti-bullying; health advocacy  
I. F. Kimura, PhD—kinesiology, athletic training and biomechanics  
M. I. Martini, PhD—parenting and family relationships across cultures  
H. McEwan, PhD—curriculum theory, philosophy of teaching  
J. Moniz, PhD—multicultural education  
L. S. Muccio, PhD—early childhood education, inclusive education, teacher action research  
N. Murata, PhD—general physical education, pedagogy, adapted physical education, special education/transition, and professional development

*Graduate Faculty
M. E. Pateman, HSD, MPH—health education
E. Ponte, PhD—language, literacy
J. H. Prins, PhD—kinesiology
S. B. Roberts, EdD—curriculum administration, policy, professional socialization, school administration
P. Sheehy, PhD—mild/moderate disabilities, teacher preparation, autism
J. Simpson Steele, PhD—elementary teacher preparation, performing arts education, performance ethnography
M. Soetoro, PhD—multicultural education, social studies methods, peace education
E. Spitler, PhD—English/language arts methods, secondary education, adolescent literacy, disciplinary literacy, teacher identity and transformation, multiple/21st century literacies
R. A. Stodden, PhD—mental retardation, career/vocational special education
L. Venenciano, PhD—educational psychology, mathematics education, teacher education
F. C. Walton, PhD—career, technology and technical education
D. B. Young, EdD—science education
J. Zilliox, EdD—elementary mathematics

Degrees Offered: Certificate in Reading K-12, MEd in curriculum studies, MEd in early childhood education, PhD in education with specialization in curriculum and instruction

The Academic Program
The Department of Curriculum Studies (EDCS) offers advanced degrees at the master’s level in curriculum studies and early childhood education (MEd-CS and MEd-ECE), and, as part of a college-wide doctoral degree, a specialization in curriculum and instruction (PhD). Students may also study for a 15-credit certificate in Reading K-12. All programs focus on the educational needs of children and adolescents, teaching, learning, and curriculum.

The students at UH Mānoa are ethnically diverse as are the students in Hawai‘i’s school system. Students in EDCS programs, therefore, learn and teach in a unique multicultural environment.

Graduate Study
General information, policies, requirements, and procedures of the Graduate Education are in the “Graduate Education” section of this Catalog.

Master of Education in Curriculum Studies
The Department of Curriculum Studies offers a 30 credit program leading to the degree of master of education in curriculum studies. It is designed to serve licensed teachers who wish to learn about and inquire into the areas of PK-3 early childhood, elementary, middle level, secondary education, or K-12 education.

Students in elementary and secondary education specialize in art, language arts/literacy, mathematics, science, or interdisciplinary subjects. Other specializations may be possible if advisors are available. K-12 specializations include disabilities studies, multicultural education, language, literacy specialist, reading, and social studies education. MEd-CS, Reading, K-12 concentration may be used to add the field, Reading to a Hawai‘i Standard or Advanced License. The 15-credit Reading K-12 certificate is available as part of the MEd-CS degree or separately.

The MEd program in curriculum studies equips teachers to fill a variety of teaching and resource roles at an advanced level.

The program helps teachers become better informed about the developmental and educational needs of children and adolescents from various types of communities; skillful in diagnostic and evaluation procedures and in developing educational programs to meet individual and group needs; versatile in their teaching strategies; capable of providing leadership in a classroom, school, or school system; knowledgeable about issues, trends, and research in their fields; systematic in their reflective assessment of trends and innovations, and well-informed about new technology and its applications.

Admission Requirements
In addition to the requirements of Graduate Education, applicants for the MEd in the curriculum studies program must provide the following:
1. Evidence of adequate successful course work and/or experience related to the concentration area selected.
2. Evidence of student teaching, teaching, or experience designing and/or implementing curriculum in educational settings.
3. Three (3) professional references from people who are able to comment on the quality of the applicant’s experience, ability to pursue graduate study, and character.

Program Requirements
MEd-CS courses are scheduled to meet the needs of educators and may be completed at least partially online.

Additional details about the program are available at coe.hawaii.edu/academics/curriculum-studies. Please download Handbook 1: Prospective and New Students.

Plan A (Thesis) Requirements
The Plan A program is designed primarily for students interested in research and in writing a thesis. It requires a minimum of 30 credit hours with at least 12 credit hours in curriculum studies, not counting 699V or 799V. Of the 30 credit hours, 24 credit hours must be approved course work. Required courses are EDCS 622, 667, and two research methods courses. A minimum of 12 credit hours is to be taken in a related field, which may be in a concentration area within the Department of Curriculum Studies, in other departments in the College of Education, or in a discipline in one or more of the other colleges/schools at UH Mānoa. Of the approved courses, 18 credit hours must be at the 600 to 700 level (excluding 699 and 799). Six credit hours (EDCS 700) are required for the thesis.

Plan B (Non-thesis) Requirements
The Plan B program is designed primarily for students who wish to strengthen their teaching in selected areas of teacher education and curriculum studies. It requires a minimum of 30 credit hours of approved course work, with a minimum of 12 credit hours in curriculum studies (excluding EDCS 699). Required courses are EDCS 622, 667, and two research methods courses. A minimum of 18 credit hours is to be taken in a related field. The related field may be in a concentration area within the Department of Curriculum Studies, in other departments in the College of Education, or in a discipline in one or more of the other colleges/schools at UH Mānoa. Of the approved courses, 18 credit hours must be at the 600 to 700 level, excluding 699. A maximum of 6 credit hours of 699 may be applied to the degree program.

The Plan B program also requires a culminating project.

For further information and application forms, go to coe.hawaii.edu/academics/curriculum-studies or contact the
The Certificate in Reading K-12 is a 15-credit post-baccalaureate program. The certificate may be earned as a certificate-only program, or as part of the MEd-CS with 15 additional credits and a Plan B Professional Teaching Portfolio. The 30-credit MEd-CS: Reading K-12 has been approved by HTSB to add the field, Reading, to a Standard or Advanced Hawai'i teaching license.

The purpose of the certificate is to prepare teachers and other educators to be school literacy leaders, literacy coaches, and reading specialists. Based on International Reading Association standards, it provides knowledge and hands-on experiences so educators improve their own literacy instruction and support school and/or district change.

Hawai'i’s teachers and educational officers are the most likely audience, but other interested educators will be considered. Participants learn about and apply advanced topics in literacy, such as adapting instruction for diverse students, using formative assessments to guide instruction, coaching teachers, and creating and delivering effective professional development. Since many assignments are field-based, access to a K-12 classroom is required.

The Reading K-12 Certificate is theory, standards, and research-based. A cohort model encourages peer support and active engagement in learning. Most courses are hybrid (combination of campus and online), depending on each cohort’s preference.

Admission Requirements
Admission to the Reading K-12 Certificate program is by cohort, so please contact csedept@hawaii.edu before applying. Students must meet the requirements set by Graduate Education and the MEd-CS for admission. They must also have two years of teaching experience before the program begins and access to a classroom during the program.

In addition to the application materials required by Graduate Education, prospective students must also submit the Curriculum Studies application packet and select the Reading K-12 Certificate (see Curriculum Studies, Reading K-12 Certificate, How to Apply web page to download the packet). Because the number of students who can be admitted is limited, meeting the minimum established criteria does not guarantee admission.

Program Requirements
The Reading K-12 Certificate is comprised of five 3-credit required courses and is completed in 2 years. The first course explores new literacies, followed by two literacy assessment courses (classroom and larger-scale assessment) and two leadership courses (literacy coaching and professional development implementation). One assessment course and one leadership course are designated as practicums, although other courses also involve applied projects.

Courses follow the UH Mānoa semester schedule, and are offered in fall, spring, and sometimes summer semesters. Courses are scheduled to meet the needs of educators, and are either entirely online or a combination of online and face-to-face classes.

Master of Education in Early Childhood Education
The Departments of Curriculum Studies and Special Education in the College of Education and the Department of Family Resources in the College of Tropical Agriculture and Human Resources (CTAHR) offer a 30 credit interdisciplinary program leading to the degree of Master of Education in Early Childhood Education (MEd-ECE). The program is designed to support professional development and promote leadership in personnel who work in programs with children between infancy and five years of age.

Course of study includes understanding the developmental and educational needs of young children ages birth to five; knowledge of family systems, needs and resources; development of the ability to design and implement learning environments and programs to meet the needs of all young learners ages birth to five including those with disabilities; current issues and trends in early education policy, assessment, and research; and development of reflective practice and ethical leadership skills.

Admission Requirements
In addition to the requirements of Graduate Education, applicants for the MEd in Early Childhood Education must provide the following:
1. Evidence of successful academic performance in child development and early childhood education. This includes a minimum of one course each in:
   a. Child development, age birth to five;
   b. Early childhood education;
   c. Developmentally appropriate practice;
   d. Family studies/working with families and communities;
2. Documented experience of work with young children and their families or in early childhood program administration or public policy;
3. Three (3) professional references from people who are able to comment on the quality of the applicant’s experience, ability to pursue graduate study, and character.

Program Requirements
30 credit hours in early childhood regular education, early childhood special education, and child development are required. Students take a common core of 18 required credits and select 12 credits of specialization courses in an area of interest within their major.

The required core of 18 credits is taken over the course of three Summer Institute sessions on the UH Mānoa campus. Core courses are offered through the Departments of Curriculum Studies and Special Education in the College of Education, and the Department of Family Resources in the College of Tropical Agriculture and Human Resources. The balance of 12 elective credits is taken either online or on ground, based on student interest and need, in consultation with a program advisor.

Plan A (Thesis) Requirements
The Plan A program is designed for those who are interested in research and writing a thesis and who may be interested in pursuing a later doctoral degree. Students completing a Plan A will take a minimum of 30 credit hours including 18 credits at the 600 level or higher, a core consisting of 18 credits, 6 credits of electives, and 6 credits of thesis research (EDCS 700). The culminating experience for Plan A students will be a thesis based on original research.

Plan B (Non-Thesis) Requirements
The Plan B program is for those who wish to focus on strengthening professional knowledge and skills. Students
completing a Plan B will take a minimum of 30 credit hours including 18 credits at the 600 level or higher, a core consisting of 18 credits, 9-11 credits of electives and 1-3 credits of Plan B preparation. The culminating experience for Plan B students will be the submission of a portfolio that documents their competency in demonstrating program standards. The program advisor will guide and direct the development of the portfolio.

For further information and application forms, go to coe.hawaii.edu/academics/curriculum-studies/med-ece or contact the Department of Curriculum Studies, Graduate ECE Program at (808) 956-0337.

Doctoral Degree

The doctor of philosophy degree in education (PhD) is a college-wide degree awarded for distinguished academic preparation for the field of education.

The PhD in Education, specialization in Curriculum and Instruction, develops educational leaders in curriculum development, teaching, curriculum evaluation, and/or teacher education and professional development. The program varies in the number of credit hours required, depending upon the candidate’s qualifications, and includes courses required for all doctoral students enrolled in the College of Education; courses in an area of specialization, such as issues and trends in curriculum, teaching and learning, curriculum and program evaluation, and research on teacher education and professional development; breadth courses; a field project or an internship in college teaching; and the dissertation.

For additional information, see the “Doctoral Degrees” section within the College of Education section of this Catalog or visit coe.hawaii.edu/academics/curriculum-studies/phd-ci.

Educational Administration

Wist 220
1776 University Avenue
Honolulu, HI 96822
Tel: (808) 956-7843
Fax: (808) 956-4120
Web: coe.hawaii.edu/academics/educational-administration

Faculty

* R. Heck, PhD (Chair)—leadership and governance, organizational theory, policy
M. K. P. A. Benham, EdD—educational leadership and community-based leadership, policy, indigenous critical studies, Moʻolelo and narrative as pedagogy and methodology, indigenous post-secondary education, community engagement
*C. Lucas, PhD—professional development, leadership theory
*S. B. Roberts, EdD—curriculum administration, policy, professional socialization, school administration
*E. K. Wright, PhD—indigeneity in higher education, indigenous research methodologies, student affairs leadership

Degrees Offered: MEd in educational administration, PhD in education with specialization in educational administration

The Academic Program

The department offers graduate programs leading to the MEd in educational administration (EDEA) for both lower (K-12) and higher education and the PhD with a specialization in educational administration. The educational administration program includes both introductory courses and advanced seminars in the following areas of study:

1. Theories, policies, principles, and practices of educational administration;
2. Organizational theory and change;
3. Legal/financial issues;
4. Educational leadership (problems, strategies, and solutions);
5. Research and data utilization

The educational administration program prepares educational administrators and supervisors for a broad range of education-related administrative positions. These positions include elementary and secondary school administrators, higher education staff positions, and department and grade-level chair at lower and higher education institutions.

Participants in the educational administration program will have the opportunity to study in a multicultural setting that includes students from the Pacific and Asia, as well as from private and public schools. The department’s focus on both higher and lower education provides students the opportunity to explore a wide range of national and international issues of importance to education and to specialize in an area of interest.

Graduate Study

Master of Education in Educational Administration

Admission Requirements

To be admitted, students must meet Graduate Education admissions requirements. There are two program emphases: K-12 administration and higher education administration.

Students who seek the MEd degree in K-12 educational administration must have appropriate job-related experience to evidence familiarity with teaching or other student support roles (i.e., 2 years of classroom teaching or school counseling experience). The basic program is designed to prepare educational administrators and supervisors for a broad range of education-related elementary and secondary administrative positions. For applicants working in the Department of Education currently as teachers or vice principals, there are seven courses that are required for principal certification (EDEA 601, 610, 620, 630, 645, 670, 780F). Applicants should check with the Hawai‘i Department of Education for additional requirements to become an administrator in the public schools.

For students who seek the MEd degree in higher education, the program is designed for those with interest in mid-level administrative and staff positions in higher education administration (e.g., admissions, housing, student activities, financial aid, placement, counseling, and health services). Experience in working in higher education is desirable.

Students are encouraged to plan an individual program of electives to prepare them for specific educational positions.

There are two basic degree options, Plan A and Plan B, both of which require a minimum of 36 credits.

Plan A (Thesis)

For the K-12 emphasis, program requirements include: (1) EDEA 601, (2) 602, (3) one 700 level seminar course, (4) one course in organizations and school contexts (e.g., 610, 650, 652, 670), (5) one course in leadership and policy (e.g., 642, 645, 675, 676), (6) one course in legal/financial processes (e.g., 620, 630), (7) 6 credits of thesis research, (8) two elective courses

*Graduate Faculty
in educational administration, and (9) two courses from any related graduate field of study (with approval of advisor) including educational administration.

For the higher education emphasis, program requirements include: (1) 657, (2) 602, (3) one 700 level seminar course, (4) one course in higher education organizations (e.g., 646, 650, 662), (5) two courses in leadership (e.g., 642, 660, 661, 663), (6) one course in legal/financial processes (e.g., 620HE, 630HE), (7) one additional course in research methods (e.g., 604, 629), (8) six credits of thesis research, and 2 related courses from any related graduate field of study with approval of advisor.

Plan B (Non-thesis)

For K-12, same as Plan A thesis (36 credits minimum):
Three (3) credits of directed research instead of six (6) credits of thesis and an additional course in educational administration.

For higher education, same as Plan A thesis (36 credits minimum): Three (3) credits of directed research instead of six (6) credits of thesis research and an additional related course or educational administration course.

Selection of specific courses in the above areas will be by the candidate with the advice and approval of the student’s faculty advisor.

The department will accept a maximum of 9 transfer credits after enrolling at UH Mânoa as a graduate student with advanced approval by the graduate program. Students should refer to the Graduate Education website for the requirements for the transfer of credits.

Doctoral Degree

The doctor of education (PhD) is a college-wide degree awarded for distinguished academic preparation for professional practice in the field of education.

The primary purpose of a PhD with a specialization in educational administration is to provide advanced graduate study to highly qualified educational leaders in administration. The program includes course work developing knowledge and skills related to educational policy and governance, leadership in organizations, administrative theory and practice, and research.

The program includes courses required for all doctoral students enrolled in the College of Education; courses in educational administration leading to a specialization in either general education (K-12) or higher education; course work taken outside the field of educational administration; an internship within a school, school district, or post secondary or other educational institution; and the dissertation.

For further information, see “Doctoral Degrees,” or write to the Department of Educational Administration Chair, College of Education, University of Hawai‘i at Mânoa, 1776 University Avenue, Honolulu, HI 96822; (808) 956-7843.

Educational Foundations

Wist 113
1776 University Avenue
Honolulu, HI 96822
Tel. (808) 956-7913
Fax: (808) 956-9100
Email: edef@hawaii.edu
Web: coe.hawaii.edu/academics/educational-foundations

Faculty

*E. H. Tamura, PhD (Chair)—history of education, minority issues, Asian-American history
*B. Cheng, EdD—comparative and international education, education policy
*X. Di, EdD—philosophy of education, history of education, sociology of education
*D. P. Ericson, PhD—philosophy of education, educational policy, international education
*B. J. Lum, PhD—philosophy of education, human development, peace education
*H. McEwan, PhD—curriculum theory, teacher education research, philosophy of education
*L. H. Phan, PhD—international education, language-culture-pedagogy, identity studies, TESOL, critical theories of education and language
*G. G. Reed, PhD—social and cultural foundations, values and education, comparative education
*C. S. Tanabe, PhD, JD—educational law and policy, philosophy of education
*H. Tavares, PhD—politics of education, educational policy studies, critical theories of education

Cooperating Graduate Faculty

W. S. Nishimoto, PhD—oral history, life history, interviewing in qualitative research

Affiliate Graduate Faculty

D. L. Grossman, PhD—civic/citizenship education, comparative/ international/cross-cultural education, teacher education
L. K. Menton, PhD—social studies education
S. Sridharan, PhD—evaluating education interventions, systems reform, realist evaluation, quantitative and qualitative methods, impact evaluation

Degrees Offered: MEd in educational foundations, PhD in education with specialization in educational foundations

The Academic Program

The Department of Educational Foundations takes an interdisciplinary approach to the critical examination of educational issues by focusing on explaining and interpreting education—asking and responding to the “why” questions. The department is committed to the professional and personal intellectual growth of educators and laypersons who wish to broaden and deepen their understanding of educational problems, questions, issues and controversies. The department adopts a multidisciplinary approach to educational inquiry by drawing on the disciplines of the humanities and social sciences. We value and affirm multiple perspectives, multiple voices, and collaboration in a program that is committed to engaging and deepening the prospect of democratic education. We seek to move our students toward greater appreciation of complexity, clarity, and compassion through our curriculum.

*Graduate Faculty
Related to the traditional disciplines are the department’s four areas of emphasis: history of education, philosophy of education, socio-cultural foundations, and international/comparative education. Related areas of study include educational policy studies, the politics of education, legal issues in education, and multicultural education.

Graduates with the MEd degree are expected to be able to analyze alternatives in educational thought, policy and practice related to the social and ethical problems faced by schools and other educational agencies at the state, national and international levels. Graduates with the PhD are expected to exert professional expertise in the field of education and deal with those aspects and problems in society that need to be taken into account in advancing educational thought, policy development and practice, especially where these concern the social role of the school and other educational agencies.

**Graduate Study**

**Master of Education in Educational Foundations**

The department offers programs of graduate study leading to a MEd in educational foundations, informed by history of education, philosophy of education, social/cultural foundations of education, and/or comparative/international education.

**MEd Program Options**

**Option I: Plan A Thesis (30 credits)**
- Department core (12 credits)
- One research course (3 credits)
- Three electives (including a seminar) in area of emphasis and/or cognate (9 credits)
- Thesis 700 (6 credits)
- Committee: chair (full graduate faculty), member (graduate faculty), outside member (full graduate faculty)
- Culminating experience: oral defense of thesis

**Option II: Plan B Non-thesis (30 credits)**
- For field based educators and others who choose to do a project based study
- Department core (12 credits)
- One research course (3 credits)
- Three electives, including a seminar (9 credits)
- Directed reading for developing and carrying out a project and writing related paper (6 credits)
- Committee: chair, plus one reader (who must have at least a master’s degree) who guide the student through the conceptualization and implementation of the project and the writing of the Plan B paper
- Culminating experience: A final paper that describes and evaluates the final project, and an oral presentation

**Option III: Summers Only Master in Education (30 credits)**
- Focus on leadership in the Asia/Pacific Region (EdLeads)*
- Fixed sequence of courses (30 credits)
- Committee: chair (member of graduate faculty) and reader (who must have at least a master’s degree) who guide the student through the conceptualization and implementation of the project and the writing of the Plan B paper
- Culminating experience: A final paper that describes and evaluates the final project, and an oral presentation

**Option IV: Summers Only Master in Education (30 credits)**
- Focus on private school leadership in the Pacific Basin (PSL)*
- Fixed sequence of courses (30 credits)
- Committee: chair (member of graduate faculty) and reader (who must have at least a master’s degree) who guide the student through the conceptualization and implementation of the project and the writing of the Plan B paper
- Culminating experience: a final paper that describes and evaluates the final project, and an oral presentation.

For further information, contact the graduate chair, Department of Educational Foundations.

**Doctoral Degree**

The Doctor of Philosophy in Education (PhD) is a college-wide degree awarded for distinguished academic preparation for scholarly professional practice in the field of education.

Educational foundations is a specialization under the PhD program of the College of Education. The program prepares educational professionals with an understanding of the historical, philosophical, cultural, social, and political contexts of education so that they can make informed and wise decisions about educational problems and policy issues. Graduates with the PhD are expected to exert leadership in the field of education and deal with those aspects and problems in society that need to be taken into account in advancing educational thought, policy development, and practice, especially where these concern the social role of the school and other educational agencies. The program of study varies in the number of credits, depending upon the candidate’s qualifications and will include the following: college courses required of all students enrolled in the PhD program of the College of Education; department courses required of all students with a specialization in educational foundations; area of emphasis course work focused in history, philosophy, comparative, or social/cultural foundations of education; cognate-field course work usually taken outside of the College of Education; a field project or an internship; qualifying and comprehensive examinations; and the dissertation. The department also contributes to the policy studies concentration in the PhD program.

For further information concerning the College of Education PhD program, see “Doctoral Degrees,” or write to the graduate chair, Department of Educational Foundations, 1776 University Avenue, Honolulu, HI 96822.
Educational Psychology

Wist Hall 214
1776 University Avenue
Honolulu, HI 96822
Tel: (808) 956-7775
Fax: (808) 956-6615
Web: coe.hawaii.edu/academics/educational-psychology

Faculty
* M. Salzman, PhD (Chair)—cross-cultural psychology, cultural psychology, indigenous psychology
* P. R. Brandon, PhD—program evaluation, study of program implementation and research on professional development
* M. K. Iding, PhD—cognition, learning from multimedia and computer-based resources, science learning, university teaching
* S. Im, PhD—multivariate analysis, psychometric models for cognitive diagnosis, setting cut off scores in large scale assessment
* N. Lewis, PhD—underrepresented students’ interest in and persistence to doctoral education in science, technology, engineering, and mathematics (STEM) and program evaluation
* M. Liu, PhD—statistical and psychometric models and their application in education or other disciplines within social and behavioral science
* K. Ratcliffe, PhD—learning and development in exceptional students, culturally diverse educational environments, family influences on learning and development
* L. Yamauchi, PhD—cognitive development, cultural influences on learning, minority students and schooling

Cooperating Graduate Faculty
B. D. DeBaryshe, PhD—social development, parent-child relations, stress and resilience
R. Heck, PhD—organizational theory, leadership, policy and quantitative methods
A. Maynard, PhD—children’s teaching abilities, sibling interactions, cultural change and socialization, and literacy

Affiliate Graduate Faculty
M. E. Brandt, PhD—cognitive development, culture and cognition, alternative assessment
M. K. Lai, PhD—program evaluation, research methods
P. G. LeMahieu, PhD—student assessment, program evaluation
T. R. Wyatt, PhD—education experiences of indigenous teachers and students, cultural influences on learning and development instructional coaching, bridging scripted programs with culturally appropriate teaching

Degrees Offered: MEd in educational psychology, PhD in educational psychology

The Academic Program
The Department of Educational Psychology promotes inquiry in human learning and development within the context of a diverse society. Specifically, the major areas of study include human learning, human development, research methodology, statistics, measurement, and assessment and evaluation.

The department’s MEd and PhD programs prepare individuals to perform career activities—basic and applied research, teaching, and mentoring—in universities, school systems, and other human service institutions and agencies, both public and private.

Graduate Study
Graduate study is primarily oriented toward students with specific professional educational objectives, but it is also applicable to students who find a major in educational psychology congruent with their personal objectives, and who wish to engage in elective study to the greatest extent possible while fulfilling degree requirements.

Initial Faculty Advising
Upon entrance to the graduate program, each student is assigned a temporary advisor to facilitate the student’s progress through the program. Initial assignment or choice of a temporary advisor in no way obligates the student to select the temporary advisor as his or her program advisor or to include the temporary advisor as his or her committee member. Likewise, the temporary advisor has no obligation to serve on the student’s committee. The system of temporary advisors is merely a way of identifying a specific faculty member the student can call upon for advice. The temporary advisor can be changed at any time.

In order to maintain a close working relationship between the students and the faculty, students are required to undertake self-assessment activities every semester. After completing a written self-assessment, students meet with the EDEP faculty at the end of each semester to review and direct progress toward their degrees. Students who have successfully defended their proposal and are making good progress are not required to attend these meetings.

Master of Education in Educational Psychology
The MEd program in Educational Psychology is directed toward increasing students’ competence in educational inquiry. The MEd in Educational Psychology has two broad strands: (1) General Educational Psychology; (2) Measurement, Statistics, and Evaluation (MSE). The General Educational Psychology strand focuses on the study and application of psychological principles to understand cognitive, developmental, and sociocultural factors affecting behavior, learning, and achievement and to further develop educational interventions and programs. The MSE strand addresses quantitative approaches to educational inquiry and the development of quantitative methods that underpin the development of evidence-based research in education. Courses are offered in the areas of human learning, cognition, and development; statistics, measurement, evaluation, and research methodology. The program prepares students for professional careers as practitioners and researchers in education, evaluators, and testing and measurement specialists.

Admission Requirements
In addition to the application form required by Graduate Education, prospective students must also submit
1) Department of Educational Psychology application form to the department.
2) Three recommendation forms attesting to academic and professional strengths to the department. Academic recommendations are preferred.
3) Transcript(s) of all prior undergraduate and graduate course work to Graduate Education.
4) For non-native speakers of English, a minimum TOEFL score of 600/100 unless waived in accordance with Graduate Education guidelines.

Note: Applications for admission to the MEd program must be received by February 1 for the fall semester and by
September 1 for the spring semester. Application materials are available on the EDEP website, coe.hawaii.edu/academics/educational-psychology/med/how-to-apply.

Degree Requirements

After admission, the student and his or her temporary advisor detail a program of study, which includes a minimum of 30 credits for Plan A (Thesis) and Plan B (Non-thesis) candidates. Courses at or above the 400 level may be applied to an individual’s program of study though a minimum of 18 credits must be earned in courses numbered 600-798. Up to 12 credits completed prior to admission to the program may be transferred for credit toward the degree. Students in the general Educational Psychology strand are required to take EDEP 416, 601, 608, 611, 661 and a graduate seminar (EDEP 768) as part of their 30 credits. Students in the MSE strand are required to take EDEP 601, 604, 608, 611, 616, 661 and two elective courses from the following: EDEP 605, 606, 612, 618, 626, 657, 768D, 768E or 768G (including at least one seminar). Students must receive a grade no lower than B- for all core courses.

A minimum residency of two semesters of full-time study or the equivalent in credits at UH Mānoa is required. Relatively soon after entering the program, students are expected to choose between Plan A and Plan B options.

Plan A (Thesis)

Students whose objective is doctoral study are recommended to define a Plan A program of study at the master’s level. Plan A candidates must take at least 6 credits of thesis research (EDEP 700). At the discretion of the thesis chair, up to five credits of EDEP 699, previously completed, may be substituted for up to five of the six EDEP 700 credits. Graduate Education requires that a minimum of 12 credits must be earned in courses numbered 600-798, in addition to six credits of directed reading (EDEP 699) and thesis research (EDEP 700).

The development of a thesis proposal is concurrent with the selection of a thesis chair and committee. The proposal includes a literature review that contextualizes the research question(s) within existing research and theory. The proposal also includes a description of the proposed research methods, including how the data will be analyzed. Students work with their thesis chair to develop their proposal. After the thesis proposal is defended and approved, Master’s Form II is submitted to Graduate Education, and the student may enroll in thesis research (EDEP 700) at the beginning of the next academic semester. Students must register for at least one EDEP 700 credit during the semester in which they graduate and apply for graduation by the appropriate deadline.

It is the responsibility of the student to keep all members of the thesis committee informed of the scope, plan, and progress of the thesis research. Copies of the completed thesis must be submitted to committee members at least two weeks prior to the date of the final oral examination by the committee. Upon successful defense of the thesis and subsequent completion of revisions, Master’s Form III is submitted to Graduate Education. When the final edited document is submitted to Graduate Education, Form IV should be submitted at the same time.

Plan B (Nonthesis)

The culminating requirement is a Plan B project/paper, an original educational inquiry resulting in a product that informs educational practice. The development of a Plan B project is concurrent with the selection of a Plan B advisor. Students develop a 8-10 page proposal outlining their projects that are then approved by their advisors. Not more than 9 credits in directed reading/research (EDEP 699) may be applied to meet degree requirements. A presentation of the Plan B project/paper is required during their final semester.

If candidates are not enrolled in other courses, they must be enrolled in at least one credit of EDEP 699, Directed Reading and Research. Students should enroll in EDEP 500 if all other requirements are complete. EDEP 500 is a one-credit course evaluated on a Satisfactory/Unsatisfactory basis and does not count toward credit-hour requirements. Students must apply for graduation when registering for their final semester of study.

Doctoral Degree

The PhD program in educational psychology is directed toward increasing the candidate’s competence in educational inquiry. In general, the domain of inquiry encompasses human learning and development in the context of education. Courses are offered in the areas of statistics, measurement, evaluation, and research methodology; and human learning, cognition, and development. The program prepares individuals to conduct basic and applied research and evaluation in public and private educational settings and provide instruction and consultation appropriate for all educational levels.

Admission Requirements

In addition to the application form required by Graduate Education, prospective students must also submit:

1) Department of Educational Psychology application form to the department.

2) Three recommendation forms attesting to academic and professional strengths to the department. Academic recommendations are preferred.

3) Transcript(s) of all prior undergraduate and graduate course work to Graduate Education.

4) Official scores on the Graduate Record Exam Aptitude Test to Graduate Education.

5) For non-native speakers of English, a minimum TOEFL score of 600/100 unless waived in accordance with Graduate Education guidelines.

6) Evidence of research competence (e.g., master’s research thesis, a published or publishable article, or a research proposal), to the department.

[Note: Applications for admission to the PhD program are considered for the fall semester only and must be received by February 1.] Application materials are available on the EDEP website, coe.hawaii.edu/academics/educational-psychology/phd-ep/how-to-apply.

Procedure for Completing the PhD Degree

Each student works closely with members of the graduate faculty to define an individual program of study. A typical program spans three to five years of concentrated study within the broadly defined discipline of educational psychology.

Program requirements include (a) completion of required core courses; (b) completion of required interdisciplinary specialization; (c) college teaching experience in conjunction with one or more faculty members; (d) documentation of directed research experiences; and (e) a minimum residency of three semesters of full-time work or the equivalent in credits at UH Mānoa.
Completion of Core Courses
Students must receive a grade of at least B in all core courses. The purposes of the core courses are (a) to determine whether to encourage students to proceed in the PhD program; and (b) to develop an appropriate plan of study; and (c) to advance to candidacy. See EDEP website for a list of core courses, coe.hawaii.edu/academics/educational-psychology/phd-ep.

Dissertation Prospectus
The development of a dissertation prospectus is done in conjunction with the identification of the dissertation committee chair. The prospectus is a 10-15 page description (exclusive of references) of the proposed dissertation that is developed in consultation with a prospective chair and submitted to the faculty. The prospectus includes the statement of the problem; its relevance to educational psychology; the design of the investigation; and analysis. If there are no major objections to this prospectus from the graduate faculty as a whole, the student forms a doctoral committee based on mutual interest.

Comprehensive Examination
The comprehensive examination is taken after the prospectus is approved and either before or after the proposal defense, as agreed upon by the committee. Committee members typically formulate two to four questions that may be related to the student’s proposal but may be broader in scope. Typically, students take between two to four weeks to complete the written comprehensive exam; however, each committee determines the exact timeline. An oral defense will be scheduled after the written answers are turned in. The committee will have at least two weeks to read the written answers before the oral defense. A student who fails any portion of the comprehensive examination twice will be dismissed from both the graduate program and Graduate Education, unless recommended otherwise by the graduate chair.

Dissertation Proposal
The student develops a dissertation proposal in consultation with the dissertation committee. The dissertation proposal includes a literature review that contextualizes the question(s) within existing research and theory. The proposal also includes a description of the proposed research methods, including how the data will be analyzed. A formal oral defense of the proposal is made by the student to the doctoral committee in order to confirm approval of the proposed research. When students pass the comprehensive exam and proposal defense, Doctorate Form II will be submitted to Graduate Education.

Completion of the Program
It is the responsibility of the student to keep all members of the dissertation committee informed of the scope, plan, and progress of the dissertation research. Copies of the completed dissertation must be submitted to the committee members at least two weeks prior to the date of the final oral examination by the committee. Upon successful defense of the dissertation and subsequent completion of revisions, Doctorate Form III is submitted to Graduate Education. When the final edited document is submitted to Graduate Education, Form IV should be submitted at the same time.

Institute for Teacher Education
Everly Hall 223 (Elementary), 226 (Secondary), and 221 (MEdT) 1776 University Avenue Honolulu, HI 96822 Tel: (808) 956-4154 (Elementary)/ (808) 956-4241 (Secondary)/ (808) 956-5513 (MEdT) Fax: (808) 956-7191 (Elementary & MEdT)/ (808) 956-9808 (Secondary)
Web: coe.hawaii.edu/academics/institute-teacher-education

Faculty
* D. Grace, EdD (Elementary Director)—language, literacy, media studies, early childhood
* T. O’Neill, PhD (Interim Secondary Director)—science education
* J. Yoshioka, PhD (MEdT Director)—science education, teacher education
L. Baron, EdD—mathematics education
S. Buelow, PhD—literacy and reading education
E. B. Chapman de Sousa, PhD—multilingual learners
C. Frambaugh-Krizter, PhD—literacy
L. Fulton, PhD—elementary science education
S. H. Furuta, MAT—teacher education, elementary education
A. Henward, PhD—early childhood education
* J. Herring, EdD—art education
* C. Kessler, EdD—social studies education
* J. Moniz, PhD—multicultural education
L. Muccio, PhD—early childhood education
* E. Ponte, PhD—language, literacy
* S. Robinson, PhD—science education
* K. Serna, PhD—school health education
J. Simpson Steele, PhD—performing arts
E. Spiteri, PhD—language arts
* F. C. Walton, PhD—career, technology and technical education
* J. Zilliox, EdD—mathematics education
* D. Zuercher, PhD—elementary and middle level, literary health

Cooperating Faculty
from CRDG, EDCS, EDEP, ETEC, KRS, SPED

Degrees, Certificates, and Licensure Program Offered: BEd in elementary education, BEd in secondary education, Master of Education in Teaching (MEdT), Post-Baccalaureate Certificate in Secondary Education (PBCSE); State Approved Teacher Education Programs (SATEPs) in elementary education, secondary education, dual elementary and special education, dual elementary and early childhood education, dual elementary and Hawaiian Education

The Academic Program
The Institute for Teacher Education (ITE) offers undergraduate degrees in elementary and secondary education (BEd), a post-baccalaureate certificate in secondary education (PBCSE), an advanced degree in teaching (MEdT), and state-approved teacher education programs (SATEPs) in elementary and secondary education.

Elementary and secondary BEd students may be able to enroll in programs that can lead to recommendation to the state for dual licensure, such as elementary or secondary and special education licensure, elementary and early childhood (PK-3) licensure, early childhood and early childhood special education (PK-3), or elementary and Hawaiian education licensure. All ITE programs focus on the educational needs of children and

* Graduate Faculty
adolescents, teaching, learning, and curriculum. The students at UH Mānoa are ethnically diverse as are the students in Hawai‘i’s school system. Students in ITE programs, therefore, learn and teach in a unique multicultural environment.

All students are required to own laptops for their courses. The heavy emphasis on the integration of technology into course work and clinical work reflects innovations in education. To learn more about this requirement, financial aid options for covering the cost, and whether the laptop the student may now own meets requirements for the program, please refer to coe.hawaii.edu/node/479.

Undergraduate Study (BEd)

Basic Requirements

The undergraduate major programs include a strong liberal arts foundation, professional education courses, academic subject preparation, content pedagogy preparation, and clinical experiences.

Classified status in the College of Education is necessary for registration in most teacher education courses. Some require State Approved Teacher Education Programs (SATEP) admissions as well. Program sheets listing the specific requirements for the elementary and secondary BEd programs and for the SATEPs are available in the College of Education’s Office of Student Academic Services (OSAS). Students must fulfill all degree program requirements in effect for the semester in which they are admitted into the college. Those pursuing licensure must meet all SATEP requirements in effect at the time they are admitted to the SATEP. Please be aware that SATEP requirements may be changed by the licensing agency, the Hawai‘i Teacher Standards Board (HTSB). Candidates pursuing licensure also must meet all licensure requirements in place at the time of program completion.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Major Requirements

Elementary Program

The elementary SATEP major focuses on the learner and the learning environment in elementary school (K-6). Requirements include completion of the General Education courses specified for education majors, elementary emphasis and methods courses in elementary education, and clinical experience for a minimum of 120 credit hours. Students are typically assigned to cohorts and enroll in a sequence of courses. The traditional day program requires full-time enrollment. The Elementary BEd also offers a statewide distance education program. The Dual Elementary/Special Education program adds a focus on special education settings. The Dual Elementary/Early Education program adds a focus on PK-3 settings. The Dual Early Childhood/Early Childhood Special Education program adds a focus on PK-3 special education settings. The Dual Elementary/Hawaiian Education program adds a focus on teaching in Hawaiian immersion schools or schools with high populations of Native Hawaiian students.

Secondary Program

The secondary education program focuses on the learner and the learning environment in grades 6-12. Requirements include completion of the General Education courses specified for education majors, a major in a teaching field or academic content and content pedagogy courses equivalent to a major in a teaching field, foundations and methods courses in secondary education, and clinical experiences for a minimum of 120 credit hours.

The College of Education offers secondary education majors in the following fields: English, world languages (Chinese, French, German, Hawaiian, Ilokano/Filipino, Latin, Japanese, Russian, Spanish), mathematics, music, science (biology, chemistry, physics, earth science, general science, and physical science), social studies (with concentrations in American studies, anthropology, economics, geography, Hawaiian studies, history, political science, psychology, or sociology).

Secondary education courses are typically offered in sequence. All secondary majors pursuing teacher licensure through a SATEP must take ITE 401 Introduction to Teaching the first semester in the program, and ITE 440 Curriculum Implications of Multicultural Education prior to taking methods or clinical courses.

Music education majors complete a coordinated program offered in conjunction with the Department of Music to prepare teachers for grades K-12. Prospective music education majors should see the chair of the music education committee in the Department of Music during their first semester.

Post-Baccalaureate Certificate in Secondary Education (PBCSE)

The PBCSE is a post-baccalaureate certificate program for the preparation of secondary school teachers (grades 6-12). It is designed for students who possess a baccalaureate degree and wish to obtain initial teacher licensure. Students admitted to the PBCSE will have completed an academic major or its equivalent appropriate to their proposed teaching subject. The PBCSE offers a cohesive, field-based experience that encourages students to integrate educational theory and practice in cooperating secondary schools. The program consists of interrelated courses totaling 30-36 hours depending on the area of licensure sought. Students who complete this initial teacher licensure program are encouraged to continue their professional growth. They may be able to apply up to 12 course credits from the PBCSE to a master’s degree program. Students must negotiate course transfer at the time of application to a graduate program. The PBCSE program is offered statewide via distance education, as well as at UH Mānoa.

Admissions Requirements

All applicants to the PBCSE program will be evaluated competitively and considered for admission on the basis of an overall profile. Admission to the PBCSE is considered admission to a SATEP.

1. Applicants must have a baccalaureate degree from an accredited and UH Mānoa recognized four-year institution of higher education. Additional undergraduate courses may be required. Thus, early advising is strongly recommended.

2. Applicants must achieve minimal passing scores as set by the Hawai‘i Teacher Standards Board (HTSB) in the reading, writing, and mathematics subtests on the PRAXIS® Core Academic Skills for Educators.

3. Applicants must demonstrate knowledge in the teaching field by passing an appropriate Praxis II Subject Assessment Content Knowledge test. Some areas such as art, music, and ESL, may allow program entry prior to passing the PRAXIS II Subject Assessment Test. However, passage of the test is required prior to being placed in a school for student teaching/internship per HSTB rules.
4. Applicants must meet admissions requirements designated by the UH Mānoa Admissions Office and meet the COE’s requirement of 2.75 cumulative and major GPA.
5. Applicants must demonstrate oral and nonverbal communication competencies through the successful completion of an interviews.
6. Applicants must demonstrate attitudes toward education, learners, and themselves as prospective teachers that are compatible with the standards and curriculum of the program.
7. Applicants must document current (within the past five years) group leadership experience, paid or volunteer, with groups of youth between grades 6-12. A minimum of 40 hours of experience is required.

Admission requirements are subject to change. Call the Office of Student Academic Services for updated information.

Graduate Study

The Master of Education in Teaching (MEdT) Program is a two-year initial licensure program whose applicants seek to earn a teaching license at the elementary (K-6) or secondary levels (6-12) and engage in a program of research and inquiry consistent with a graduate degree. Successful completion of the program results in both a recommendation to the Hawai‘i Teacher Standards Board for licensure and a master’s degree from the College of Education.

MEdT candidates are admitted in groups of approximately 25 students who work and learn together as a cohort. Across the four semesters students complete university course work and engage in research, teaching, and learning while fully immersed in K-12 school-based field settings under the guidance of university faculty and public school mentors. Candidates are assigned a field placement each semester by their cohort coordinators. Field work becomes progressively more involved each semester. The program is offered full-time, in a face-to-face format and statewide via distance education to accommodate residents of the neighbor islands.

Admission requirements include: approval of Graduate Education at UH Mānoa; minimum undergraduate GPA of 3.0; and submission of passing test scores. Specific exams must be passed prior to the application deadline in order to meet Hawai‘i Teacher Standards Board license requirements and our national accreditation requirements. The GRE is not required and cannot be used as a substitute. Applicants should visit the MEdT website for application instructions and current testing requirements at coe.hawaii.edu/academics/institute-teacher-education/med-teaching.

Requirements for State Approved Teacher Education Programs (SATEPs)

Requirements for the college’s state approved teacher education programs in elementary and secondary education comply with best practices and standards adopted by the national professional associations and the national accrediting body for teacher education, and with the state’s requirements for teacher licensure. Note that the HTSB requires a Pre-Service Performance Assessment (i.e., edTPA for COE candidates) during student teaching, internship, or teaching residency. Note that there are monetary costs associated with the edTPA. These requirements are subject to modification as changes are adopted by these entities. Please consult with the Office of Student Academic Services (OSAS) for current information.

Kinesiology and Rehabilitation Science

Physical Education/Athletic Complex 231
1337 Lower Campus Road
Honolulu, HI 96822
Tel: (808) 956-7606
Fax: (808) 956-7976
Web: coe.hawaii.edu/academics/kinesiology-rehabilitation-science

Faculty

*N. M. Murata, PhD (Chair)—physical education and adapted physical education
*J. A. Daniels, EdD—school counseling, development counseling, adolescent counseling, loss and transition counseling, group counseling, and counseling homeless children
*R. K. Hertzler, PhD—physical education and exercise science
*L. F. Kimura, PhD, ATC, PT—athletic training and biomechanics
*J. K. Maeda, PhD—physical education and adapted physical education
*C. F. Morgan, PhD—youth physical activity and overweight
*K. L. Murphy, DPE—physical education
*Y. Oba, PhD, ATC—athletic training
*J. Prins, PhD—biomechanics and exercise science
*C. D. Stickley, PhD, ATC—athletic training, biomechanics and exercise physiology
*K. Tamura, PhD, ATC—athletic training and biomechanics
*K. K. Yamamoto, PhD—rehabilitation counseling, transition, and disability-related issues

Degrees Offered: BS in kinesiology and rehabilitation science, MS in athletic training, MS in kinesiology and rehabilitation science, PhD in education with a specialization in kinesiology

Undergraduate Study

BS Degree in Health and Physical Education

The BS degree program provides professional curricula for students enrolled in the College of Education whose goal is to teach P-12 physical education.

The Health and Physical Education Teacher Education (HPETE) program is a professional preparation curriculum for candidates who wish to teach physical education in grades P/K-6, 6-12, or P/K-12 and health education in grades 6-12. Requirements for this program include successful completion of the PRAXIS CORE and PRAXIS II components required for licensure in Hawai‘i. PRAXIS II must be passed prior to the teaching residencies (elementary and/or secondary). Candidates who major in this must demonstrate competence in motor skills and comprehensive knowledge relative to content in health and physical education, as well as effective accountability. General education core is 31 credits, physical education is 47 credits, health education is 12 credits, and professional education core is 30 credits for a total number of credits of 120.

Graduation Requirements

1. Fulfill all UH Mānoa requirements and meet all admissions requirements of the College of Education;
2. Complete the HPETE curriculum in content and field experiences for letter grades;
3. Successfully complete student teaching with a grade of B (not B-) or higher;

* Graduate Faculty
4. The HTSB requires a Pre-Service Performance Assessment (i.e., edTPA for COE candidates) during student teaching, internship, or teaching residency. Note that there are monetary costs associated with the edTPA.
5. Complete a minimum of 120 credit hours;
6. Have a cumulative GPA not less than that required for admission to the college; and
7. File for graduation and pay the required fee at least one full semester prior to the intended graduation date.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

BS Degree in Health and Exercise Science

The BS degree in kinesiology and rehabilitation science focuses on health and exercise science-related professions. The areas covered under this program of study provide opportunities for students to learn how individuals can influence their own state of wellness, the response and adaptation of the human body to physical activity and sports participation, and how to help others achieve a higher state of wellness. Career paths within this area of study include, but are not limited to: physical therapy, athletic training, health and fitness promotion, exercise physiology, rehabilitation counseling, sports nutrition, and personal training. The general emphasis in all of these careers is the link between science, sports, fitness, and allied health sciences. This program area has been structured to enable the students to design an academic curriculum that best reflects his or her individual interests as well as general prerequisites for graduate or professional programs. This degree program has been designed to allow students to fulfill the requirements for entry into graduate programs in several health care professions (e.g., athletic training, physical therapy, physicians assistant, occupational therapy, rehabilitation counseling, etc.).

Graduation Requirements
1. Fulfill all UH Mānoa requirements;
2. Complete the College of Education undergraduate curriculum in health and exercise science;
3. Complete a minimum of 120 credit hours;
4. Have a cumulative GPA not less than that required for admission to the college; and
5. File for graduation and pay the required fee at least one semester prior to the intended graduation date.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Graduate Study

MS Degree

The MS degree program in AT is designed for students who are pursuing either athletic training certification (EL-GATEP) or post-certification advanced athletic training knowledge and research (PP-ATEP). The MS degree in KRS provides opportunities for students who wish to pursue advanced knowledge and research in one of the following areas of specialization: Physical Activity, Adapted Physical Activity, or Rehabilitation Counseling.

The Rehabilitation Counseling program is offered through distance education modalities and is the only such program in the Pacific Basin and the nation accredited by the Council on Rehabilitation Education (CORE) that serves predominantly Asians and Pacific Islanders. Graduates are eligible to take the Certified Rehabilitation Counselor examination, and may also apply for State of Hawai’i licensure as a mental health counselor, provided they complete the required post-graduate requirements.

Admission Requirements

In addition to the requirements of Graduate Education, applicants for the MS degrees will be further evaluated on their disciplinary degree (KRS or AT) and in their area of specialization. The Department of Kinesiology and Rehabilitation Science (KRS) also requires submission of Graduate Record Examination (GRE) scores.

Each applicant admitted will be classified in one of two categories: (1) Regular status–student who has a baccalaureate degree in the area which he or she will pursue and a minimum overall grade point average of 3.0 during the final two years of undergraduate work, or (2) Conditional status–student of promise who may have a deficiency in grade point average and/or subject matter preparation.

Physical Activity and Adapted Physical Activity program applicants should have a related undergraduate degree from an accredited college or university.

Entry-level Graduate Athletic Training Education Program (EL-GATEP) applicants must submit a signed copy of the Technical Standards and proof of a completed physical examination prior to admission. Post-Professional Advanced Athletic Training Program (AATP) applicants must be Board of Certification (BOC) certified or certification eligible for consideration for admission. Applicants of either program must also submit proof of: TB clearance, Hepatitis B vaccine or waiver and professional liability insurance prior to program entrance. Downloadable forms may be retrieved at coe.hawaii.edu/academics/kinesiology-rehabilitation-science/ms-krs-athletic-training.

Rehabilitation Counseling Program admission is based on previous preparation and background, intellectual and affective potential for graduate study, and personal qualifications that contribute to success as a counselor. Application to the program presumes satisfactory completion of a bachelor’s degree with an acceptable undergraduate grade point average.

Three letters of recommendation relating to the candidate’s personal qualifications and/or professional background, one official transcript for each institution attended, and a statement of objectives must be submitted. These should show evidence that an applicant’s personal qualifications, motivation, and academic preparation indicate competence and potential success in rehabilitation and counseling. A writing sample and interview are also required. Applications are considered for the fall semester.

Program Requirements (For programs other than Rehabilitation Counseling)

A minimum of 30 credits is required for the MS degree, depending on program specialization. Of these, 6 credits are required for the Plan A Thesis or Plan B Project, and 6 credits are required for one research method course and one seminar course. The remaining 18 or more credits are to be used for course work focusing on the student’s area of specialization. The student and the thesis/project committee chair in the KRS department must approve the student’s course work.

Students interested in the MS specialization in Physical Activity or Adapted Physical Activity must meet the admission requirements of Graduate Education and KRS. These two spe-
cizations are designed to further expand knowledge and skills related to physical activity across the lifespan. Content addresses research related to health, administration, and fitness for individuals with and without disabilities. The program is comprised of 30 credits and typically takes two years to complete. A thesis or project option is provided for the research component.

Entry-level Graduate Athletic Training Education Program (EL-GATEP) students (graduate students seeking BOC certification) are required to complete a minimum of 50 credits, that includes Plan B non-thesis (final comprehensive examination). Additionally, pre-requisite course and clinical work experiences may be required. Specific requirements and recommended course sequencing can be viewed at tinyurl.com/KRS-Grad.

Post-Professional Advanced Athletic Training Program (AATP) students must complete a minimum of 48 credits that includes Plan A thesis requirements. Specific requirements and recommended course sequencing can be viewed at coe.hawaii.edu/academics/kinesiology-rehabilitation-science/ms-programs/programs/athletic-training-entry-level.

Rehabilitation Counseling Program is a distance education program leading to a Master of Science degree with a specialization in Rehabilitation Counseling. The mission of the program is to offer graduate level training that is designed to provide students with the essential knowledge, skills, and attitudes necessary to assist individuals with disabilities to secure gainful employment, achieve an increased sense of empowerment, responsibility, and independence. The Rehabilitation Counseling Program consists of 48 semester credit hours and requires 3 years of enrollment. In practice, this means attendance in 6 regular semesters plus 2 intervening summer sessions in a hybrid online environment. The Rehabilitation Counseling Program is accredited by the Council on Rehabilitation Education (CORE) and graduates are eligible to sit for the Certified Rehabilitation Counselor (CRC) Examination.

Doctoral Degree

The PhD in Education with a specialization in kinesiology prepares professionals to work as leaders in adapted physical activity, athletic training (BOC), applied biomechanics, and sports medicine fields as educators, administrators, directors, researchers, and clinicians. These fields have great depth and breadth that require specific yet broad backgrounds in research, pedagogy, athletic training research and education, mathematics/physics, physiology, and allied health/medical practices. Graduates are expected to assume leadership roles that influence local, national, and international lifestyles, physical and allied health/sports medicine issues related to research, higher education and/or program development (i.e., program accreditation acquisition), and to contribute to the body of knowledge.

This wide-ranged discipline is based in the biological sciences; consequently, this foundation will be reinforced so that student experiences (i.e., course work, research, clinical/practical/teaching) will provide refinement, expertise, and an increased depth of understanding.

The program varies in the number of credit hours required, depending on the candidate’s qualifications and experiences, and includes course work required by the College of Education, the specialization area, and a cognate field if applicable. Additionally, students may be required to complete course work in an emphasis area based on the specific needs in order to develop a specialized and focused research and education agenda. At least one field and/or teaching internship and dissertation are also required. See the previous section on graduate programs in the College of Education.

Learning Design and Technology (formerly Educational Technology)

Wist 232
1776 University Avenue
Honolulu, HI 96822
Tel: (808) 956-7671
Fax: (808) 956-3905
Email: edtech-dept@lists.hawaii.edu
Web: coe.hawaii.edu/academics/educational-technology

Faculty
*C. Ho, PhD (Chair)—educational technology and distance learning
A. Eichelberger, PhD—educational technology
*C. Fulford, PhD—instructional design and development
E. Hoffman, EdD—educational leadership
P. Leong, PhD—communication and information sciences
G. Lin, EdD—instructional technology
P. McKimmy, EdD—educational leadership
M. Menchaca, EdD—learning sciences
S. Paek, EdD—instructional technology and media
M. Schmidt, EdD—information science and learning technologies
C. Sorensen Irvine, PhD—professional studies in education

Cooperating Graduate Faculty
D. Lassner, PhD—communication and information sciences
T. T. T. Nguyen, EdD—educational leadership, internet safety

Degrees Offered: MEd in learning design and technology, PhD in learning design and technology, GCERT Online Learning and Teaching, Dual Master’s Degree program with Library and Information Science (LIS)

The Academic Program

For nearly half a century, the Department of Learning Design and Technology (LITEC) has provided dynamic and high quality programs for educators seeking innovative ways to create effective teaching and learning environments that integrate emerging technologies. To meet the needs of lifelong learners, LITEC offers diverse programs and courses for graduate students as well as courses to meet the needs of undergraduate students. Students in the LITEC program may be upgrading current capacity as educators or seeking new career paths, often moving into leadership positions as a result of their educational experiences.

The department’s main target group is post-baccalaureate students committed to the improvement of instruction and learning across the educational spectrum, including PreK-12, post-secondary and informal educational settings. The field of educational technology is delineated by the definition developed by its professional association, the Association for Educational Communications and Technology (AECT): “Educational technology is the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources.” AECT standards for professional programs guide the curriculum and core assessments.

A major strength of the department is its role in developing the educational and research expertise needed for the digital
age, contributing to workforce development and technology innovation at the local, national, and global levels. Educational technology, with its multi-disciplinary focus on such areas as distance education, interactive multimedia and educational gaming, design of engaging learning environments, participatory and social learning communities, cognition and computing, and research into effective learning and teaching strategies through emerging technologies, puts the LTEC department at the forefront of developments in 21st century education.

LTEC graduates are found in many learning environments including PreK-12 and higher education, government, business, industry, military, health occupations, museums, and other non-profits. Types of careers include: technology training, support and management, instructional design, eLearning development, website development, distance learning management, educational video production, multimedia authoring, performance improvement, project management, adult education and training, and teaching and research.

Graduate Study

LTEC graduate programs are offered at master’s, PhD, and graduate certificate levels. Online options are available at the master’s and certificate level, while campus-based programs include the master’s and PhD.

LTEC has a commitment to provide theory and research-based, yet practical educational programs. The graduate programs place emphasis on applications and evaluation of technology in educational settings rather than simple technical skills. All LTEC programs have been designed to encourage intellectual excellence and participation in a scholarly community. Emerging technologies are actively deployed to support scholarly networking as well as learning and teaching. A set of strong objectives has been established, and appropriate activities devised to ensure high levels of competencies of program graduates.

LTEC graduate programs adhere to the general information, policies, requirements, and procedures of Graduate Education. Students interested in graduate study should refer to the “Graduate Education” section in this Catalog.

Master of Education in Learning Design and Technology

The MEd in Learning Design and Technology is offered in both campus-based and online versions. Both involve face-to-face and online experiences (known as hybrid). These programs are designed to accommodate busy professionals with evening hours for live sessions, whether online or face-to-face.

- Campus-based (LTEC): students take required courses in the evenings at the UH Mānoa campus. Electives may be online or face-to-face.
- Online program (OTEC): all courses are offered online, although students attend two weekend sessions together on the UH Mānoa campus in their first semester. Preference for this program is given to students not residing on Oahu. The online program does not generally accept waivers for tuition.

Students should indicate their preference of campus-based or online when applying. There is no automatic transfer between these programs after admission.

Admission Requirements

Admission to the learning design and technology program is only for the fall semester. Applications may be filed with Graduate Education beginning October 1 until the deadline of February 1 for the following fall semester. Students must meet the requirements set by Graduate Education. Because the number of students who can be admitted is limited, the admission process is highly competitive and meeting the minimum established criteria does not guarantee automatic admission.

In addition to the application materials required by Graduate Education, prospective students must also submit the following directly to the LTEC Department (see LTEC web page for additional details):
- 3 letters of recommendation
- Intent to apply (online form at the LTEC web site)
- Statement of objectives (brief narrative)
- Current resume

Students are not required to have an undergraduate degree in education or educational technology to enter the master’s program. However, students without a previous background in education or with limited skills in technology are advised to consider taking a course in educational technology prior to entering the program to determine match for skill sets and interests.

Major Requirements

The master’s program requires a minimum of 33 semester credit hours, with six required and five elective LTEC courses. The LTEC MEd is cohort based, with students only admitted in fall term each year as part of a group that takes initial classes together. In a cohort model, students enroll in a series of core courses, beginning and ending the series together. Such an approach helps build community and support structures within the program. Students work with like-minded professionals to achieve a common goal. Students are required to take two core courses in their initial fall and spring semesters; these typically meet on Tuesday and Thursday evenings. Elective courses are offered in every semester and may be taken online or on campus. All students are required to have access to a laptop computer with internet access to meet program requirements.

The set of required LTEC courses provides each educational technology major with a solid foundation in technology, instructional design, learning theory, and research and evaluation. After the four core courses in the initial year have been completed, each student will be evaluated to determine whether he or she is making satisfactory academic progress and is prepared academically and in other ways for the continuation in the program. Poise, personal dispositions, attitude, and communication skills as well as substantive progress in course work are significant components in the overall evaluation. If advancement to candidacy is recommended, students will be allowed to begin work on their master’s project. The program culminates with student presentations of a final master’s project at a professional conference in their final year.

Dual Master’s Degree Program

Students may pursue a Master’s in Learning Design and Technology and a second master’s concurrently in Library and Information Science. Students enrolled in either program may apply for admission in the other degree program. The dual master’s option allows sharing of many elective courses. For more information, contact an advisor in LTEC or LIS.
Doctor of Philosophy (PhD) in Learning Design and Technology

The PhD in Learning Design and Technology is designed to prepare influential professionals in the field of educational technology and the learning sciences. The program is research focused, designed to prepare future faculty and education leaders. Scholars in the field explore the uses of innovative media and technologies for education, studying aspects from student learning and cognition to impacts on individuals and institutions. The field provides the research base for effective utilization of new media in education and by default is interdisciplinary in its approaches and theories. From the beginning, students are expected to actively engage and contribute to the field through publication, conference presentations, and applied instructional projects. The PhD program is designed to enhance and facilitate educational, social, and economic growth locally, nationally, and internationally with a pool of highly qualified educational scholars and leaders.

Admission Requirements

Admission to the Learning Design and Technology PhD program is only for the fall semester. Applications may be filed with Graduate Education beginning October 1 until the deadline of February 1 for the following fall semester; international students must file by January 15. Applicants are recommended to submit scores for the Graduate Record Examination (GRE) for full consideration.

In addition to the application materials required by Graduate Education, prospective students must also submit the following directly to the LTEC office (see LTEC web page for additional details):

- 3 letters of recommendation
- Statement of purpose for pursuing a doctoral degree (narrative)
- Curriculum vitae
- Evidence of competency in formal writing (i.e. masters thesis, research paper, other formal writing)

Because the number of students who can be admitted is limited, the admission process is highly competitive and meeting the minimum established criteria does not guarantee automatic admission. The program requires applicants to hold a master’s degree. A degree in educational technology is not required to enter the PhD in LTEC. Students without such a degree or equivalent experience may be required to complete additional course work.

Major Requirements

The LTEC program requires a minimum of 40 credit hours of course work and completion of a scholarly research project written as a dissertation. The current program is campus based, but courses are offered in the evenings or in alternate formats to support working professionals. Many courses are offered in hybrid or online formats.

- Research core (4 courses)
- Learning Design and Technology doctoral core (5 seminar courses)
- Emphasis area (5 electives)
- Minimum of one course of dissertation credit (1 credit minimum)

First Year Requirements

LTEC doctoral students are part of a cohort experience which requires a minimum of two courses each semester during the first year. This includes a doctoral seminar and a research course in the fall and spring term. Students not able to commit to attending courses on campus two evenings per week will not be accepted into the program. These courses are typically held on Monday and Wednesday evenings.

Typical Fall Semester, first year

- LTEC 750: Seminar in Educational Technology Issues (3)
- LTEC 611: ET Research & Evaluation (3)
- Full-time students may add an emphasis or breadth course (3)

Typical Spring semester, first year

- LTEC 750: Seminar in Educational Technology Issues (3)
- LTEC 668: Quantitative Research in Educational Technology (3) or LTEC 667: Qualitative Research in Educational Technology (3)
- Full-time students may add an emphasis or breadth course (3)

Course work after the first year is planned with the student’s advisor to meet both program requirements and personal goals. Students are able to select from a wide range of LTEC graduate courses, including online options for electives. All students are required to have internet access to meet program requirements.

Graduate Certificate (GCERT) in Online Learning and Teaching (COLT)

The Graduate Certificate program is a 15-credit, fully online post-baccalaureate program. The purpose of COLT is to develop competent online instructors and instructional designers. COLT provides those who desire to deliver learning at a distance with the foundational knowledge and skills required to design, develop, and implement effective materials for online learning. Although targeted for Hawai‘i’s educators, this program will also appeal to online educators throughout the Asia-Pacific. Participants learn the skills necessary to be successful online teachers and online learners. Within the certificate program, students learn to create, use, and manage appropriate technological processes and resources to understand and deploy effective, efficient, and engaging online learning environments.

The Certificate prepares participants to apply the theories, principles, models, tools, and techniques associated with online teaching in diverse educational settings. Throughout this completely online certificate program, participants have numerous opportunities to integrate their professional experiences into their learning, apply course assignments to their current professional activities, and actively engage with other professionals in the development of these proficiencies.

The COLT program has been endorsed by the Association for Educational Communications and Technology (AECT). Course objectives and assessments are framed by standards developed by AECT to ensure relevance and quality.

Admission Requirements

Admission to the COLT program is available for any semester with applications due March 1 for the following summer or fall, and November 1 for spring admission. Students must meet the requirements set by Graduate Education for admission. Students should select “Online Learning and Teaching” as the major on the graduate application form.

In addition to the application materials required by Graduate Education, prospective students must also submit the following online (see LTEC web page for additional details):
Special Education

Wist 120
1776 University Avenue
Honolulu, HI 96822
Tel: (808) 956-7956
Fax: (808) 956-4345
Web: coe.hawaii.edu/academics/special-education

Faculty
*A. A. Jenkins, PhD (Chair)—mild/moderate disabilities, content strategies, inclusive education, collaboration
C. Aiona, MEd—mentoring special education teachers, general special education, curriculum and instruction
M. E. Bargerhuff, PhD—inclusive learning environments, mild/moderate/severe disabilities, co-teaching
*R. S. Black, EdD—mental retardation, transition, students at-risk, research design
*B. G. Cook, PhD—mild/moderate disabilities, inclusion, evidence-based practices, higher education and students with disabilities
*L. H. Cook, PhD—mild/moderate disabilities, inclusive education, collaboration
*S. Cook, PhD—general special education, inclusion, co-teaching
K. Corbin, MEd—secondary content area literacy, behavior disorder, students at risk, differentiated instruction and curriculum design
C. Farley, MEd—mentoring special education teachers, general special education
R. Heine, MEd—secondary mild/moderate disabilities, special education mentoring

B. Kaijyama, MEd—assistive technology, universal design for learning, augmentative and alternative communication (AAC)
J. Kim, MEd—mild/moderate disabilities, autism, professional learning communities, mentoring
S. Klein, MEd—mentoring special education teachers, general special education
S. M. Koegel, MEd—general special education
J. Mahiko, MEd—transition, vocational education and workforce development, and higher education
*D. McDougall, PhD—general special education, mild/moderate disabilities, behavior disorders
*W. D. Narkon, PhD—mild/moderate disabilities, learning disabilities, reading strategies
*M. J. Noonan, PhD—mild/moderate and severe disabilities, autism, early intervention
*L. C. Novosel, PhD—mild/moderate disabilities, adolescent literacy, youth offenders with disabilities, culture and linguistic diversity, response to intervention
*C. M. Ornelles, PhD—mild/moderate disabilities, students at risk, teacher education
*L. M. Oshita, PhD—learning disabilities, reading instruction, social skills
D. Paresa, PhD—mild/moderate disabilities, learning disabilities, general special education
*K. Rao, PhD—media, distance learning, assistive technology, culturally and linguistically diverse students
*L. C. Reed, PhD—emotional and behavioral disorders, evidence-based practices, research to practice, academic and behavioral interventions and outcomes
*R. J. Reed, PhD—teacher training, cultural diversity, language arts, recruitment and retention of special education teachers
A. E. Ruhaak, MA—mentoring special education teachers, general special education
*C. Schmidt, PhD—autism spectrum disorders, applied behavior analysis
M. D. Sheehy, MEd—mentoring special education teachers, general special education; severe/autism special education
P. E. Sheehy, MEd—mild/moderate disabilities, teacher preparation, multicultural education, autism
*P. H. Sheehy, PhD—families, moderate and severe disabilities, early intervention, autism
J. Siegel, MEd—general special education
A. Soma, MEd, MSW—mentoring special education teachers, general special education
*J. C. Wells, PhD—autism spectrum disorders, communication disorders, early childhood special education, mild/moderate disabilities
M. Wilson, MPA—program management and student advising


The Academic Program
Special education (SPED) is a component of general education. Its basic purpose is to assist individuals who do not benefit from traditional educational programs. Special educators teach and help others teach persons who have special learning needs. They individualize and adapt instruction to help individuals with special needs become independent and contributing members of society.

Faculty in the Department of Special Education prepare students at the undergraduate and graduate levels to work in both school and non-school settings. Professional roles include teacher, resource manager, consultant, infant specialist, and

* Graduate Faculty
transition specialist. The program is field-based. On campus and statewide programs are offered.

Accreditations
The special education program is accredited by the National Council for Accreditation of Teacher Education (NCATE) and nationally recognized by the Council for Exceptional Children (CEC).

Advising
Advising of students in the BEd and PBSPED programs is the responsibility of the Office of Student Academic Services (OSAS), College of Education. Students should meet regularly with their OSAS academic advisor.

Upon acceptance into a special education program, students are assigned to a special education faculty advisor or cohort coordinator. Advisors/coordinates review program requirements and progress, plan program course work, complete departmental preregistration forms for the next semester, and sign course registration materials. Advisors/coordinates may accept previous course work on an individual basis. Advisors/coordinates have the responsibility of reviewing and individualizing students’ programs to complement their needs. Advisors/coordinates ensure that students have appropriate knowledge and applied skills to perform as competent special educators. Given this responsibility, advisors may require additional course work and/or practicum experience for certain students. Changes made in students’ programs must be approved by their advisors.

Student Organizations
Student Council for Exceptional Children (SCEC)
The Student Council for Exceptional Children (SCEC) is an active organization open to anyone interested in special education. Chapter 78 at UH Mānoa has received recognition by the International SCEC. SCEC members participate in professional development activities and sponsor special community projects. SCEC is an affiliate of the Council for Exceptional Children. For more information, call (808) 956-7956.

Undergraduate Study
BEd
The College of Education offers a BEd elementary/special education program that culminates in teacher licensure in both elementary and special education. The BEd merged program, revised in 2013, consists of fully integrated course work in elementary and special education, co-taught by teams of faculty from both departments. Candidates complete supervised field experiences in classroom settings with students with and without disabilities. One semester of full-time student teaching is required. Note that the HTSB requires a Pre-Service Performance Assessment (i.e., edTPA for COE candidates) during student teaching, internship, or teaching residency. Note that there are monetary costs associated with the edTPA.

In addition to the elementary focus, the College of Education also offers a BEd Blended Early Childhood/Early Childhood Special Education program that leads to PK-3 licensure in both early childhood and special education. The new program will admit its first cohort of candidates in Fall 2015. It is a statewide hybrid program with synchronous on-line class meetings at 4:00 p.m. or later, and some weekend face-to-face class sessions at UH Mānoa (financial support is provided for neighbor island students who need to travel to Oahu for the face-to-face weekends). Supervised field experiences and a one-semester student teaching are required.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Post-Baccalaureate Programs
The College of Education offers a post-baccalaureate certificate in special education for individuals who hold a bachelor’s degree in any field and desire licensure to teach special education. The program consists of 31 semester credit hours including 10 credit hours of supervised field experience. Candidates must take a 1-credit seminar prior to beginning program coursework, scheduled for candidates upon admission into the program. The PB-SPED program offers two special education teacher training options: (1) specialization in mild/moderate disabilities (mental retardation, learning disabilities, emotional/behavior disorders); or (2) severe/multiple disabilities and autism. Note that the HTSB requires a Pre-Service Performance Assessment (i.e., edTPA for COE candidates) during student teaching, internship, or teaching residency. Note that there are monetary costs associated with the edTPA. Program sheets listing the specific course requirements for the post-baccalaureate programs are available in the College of Education’s Office of Student Academic Services.

Admission Requirements
Admission is through the Office of Student Academic Services. Classified status in the College of Education is necessary for registration in the post-baccalaureate program. Program sheets listing the specific requirements are available in the Office of Student Academic Services. Students must fulfill all program requirements in effect for the semester in which they are admitted into the college.

All applicants to the post-baccalaureate certificate in special education program will be evaluated competitively and considered for admission on the basis of a profile composed of the following criteria:
1. Applicants must have a baccalaureate degree from an accredited and UH Mānoa recognized four-year institution of higher education.
2. Applicants must achieve minimal State passing scores in the reading, writing, and mathematics subtests on the PRAXIS CORE.
3. A minimum post secondary cumulative GPA of 2.75.
4. Applicants must demonstrate oral and nonverbal communicative competence through the successful completion of an interview. Applicants must also demonstrate attitudes toward education, learners and themselves as prospective teachers that are compatible with the standards and curriculum of the program.
5. Prerequisite course work may be required prior to beginning program coursework.

Admission requirements are subject to change. Call the Office of Student Academic Services for updated information.
Graduate Study

Master’s Degree

The MEd in special education program is available statewide and offers interdisciplinary studies for candidates who wish to engage in a graduate course of study in the field of special education. The MEd interdisciplinary non-licensure program consists of 30 semester credit hours in special education and related fields. In addition, candidates must participate in a special education orientation prior to beginning the program.

Admission Requirements

Applicants must submit to Graduate Education the completed Graduate Application, GRE scores, and official transcripts. Additional materials also must be sent to the Department of Special Education. These include: (a) three letters of recommendation attesting to academic and professional strengths, (b) unofficial transcripts of all undergraduate and graduate coursework, and (c) the statement of objectives. An interview by the department’s selection committee is required.

Requirements

The MEd in interdisciplinary studies/special education consists of a minimum of 30 credits, including 12 credits of required professional courses, and 12-15 credits in selected specialty areas (e.g., BCBA, literacy specialist). The specialty credits may be within special education or related areas (e.g., general education, psychology, social work, public health).

MEd candidates who desire to become a Board Certified Behavior Analyst (BCBA) may choose this as their area of emphasis in the MEd in Special Education program. Candidates would take 6 courses in the BCBA sequence as their elective specialty area and complete the 4 required professional courses. The 6 course sequence is approved by the Behavior Analyst Certification Board, Inc.® (BACB) as meeting the course work requirements for eligibility to take the Board Certified Behavior Analyst (BCBA) Examination®. Applicants will have to meet additional requirements as outlined by the (BACB) to qualify.

MEd candidates may choose a specialization in literacy as their area of emphasis. This program is an elective course sequence comprised of six literacy courses (18 credits), three courses from the Special Education Department and three courses from Curriculum Studies covering the International Dyslexia Association and International Reading Association standards, respectively. Graduate students with at least three years of teaching experience may apply. This course sequence may be taken outside of a graduate degree program, as a post-baccalaureate unclassified student, or as the elective course sequence within the Masters in Education degree in the Special Education or Curriculum Studies. Courses within this program may also be taken as elective for any graduate student with an interest in language and literacies.

Both Plan A thesis and Plan B project are offered. Six credit hours of SPED 700 are required for Plan A, and additional work in statistical analysis and research design may be necessary. Plan B requires a master’s paper/project and may require 3 credits of SPED 695.

Graduates of the interdisciplinary studies program do not qualify for teacher licensure but may seek positions in related fields and services.

Doctoral Degree

The PhD program with a specialization in exceptionalities prepares professionals to work as leaders in the education and support of individuals who have unique needs, often due to disabilities. The field is broad, addressing life-span concerns and involving such services as advocacy, family support, community services, vocational training and support, and special education. Graduates of the program are expected to assume leadership roles addressing local, regional, national, and international issues related to research and higher education and/or program development and evaluation. The program varies in the number of credit hours required, depending on the candidate’s qualifications, and includes courses required by the college, courses in the specialization, courses that provide an emphasis/breadth, a field project/internship or an apprenticeship in college teaching, and the dissertation. See the section on graduate programs in the College of Education.
General Information

An engineering degree provides an excellent background for seeking solutions to many of the problems in the development and management of technology related to urban demands, the enhancement of our living environment, and the effective utilization of our nonrenewable resources. Engineering curricula include both general and theoretical course work designed to enable graduates to meet the challenges of a technology-oriented society. In addition to classic disciplines of engineering, students may also delve into the fundamentals of sustainability, nanotechnology, microscopic simulation, and other state-of-the-art subjects. College curricula encourage the independent study of novel engineering processes. Particular emphasis is placed on problems related to energy and the preservation and enhancement of the environment.

Engineering has been a major program of study at this institution since its founding in 1907. UH Mānoa has granted more than 6,500 engineering degrees, and many of the professional engineers practicing in industry, consulting firms, and governmental agencies throughout the state are graduates of UH Mānoa.

Accreditation

The undergraduate curricula in civil, electrical, and mechanical engineering are accredited by the Engineering Accreditation Commission of ABET, Inc.

Degrees and Certificates

Bachelor's Degrees: BS in civil engineering, BS in computer engineering, BS in electrical engineering, BS in mechanical engineering

Master's Degrees: MS in civil engineering, MS in electrical engineering, MS in mechanical engineering

Doctoral Degrees: PhD in civil engineering, PhD in electrical engineering, PhD in mechanical engineering

For information on programs in biological engineering, refer to the “College of Tropical Agriculture and Human Resources” section of the Catalog. For information on programs in ocean and resources engineering, refer to the “School of Ocean and Earth Science and Technology” section of the Catalog.

Advising

Student Services
Holmes 250, 2540 Dole Street
Honolulu, HI 96822
Tel: (808) 956-8404

All students in the College of Engineering must receive approval of their program of courses from their advisors prior to registration each semester.

Updated curriculum check sheets summarizing all of the requirements for each undergraduate curriculum are available online at: www.eng.hawaii.edu/current-students/undergraduate-students/curricula-check-sheets/check-sheets.

Undergraduate engineering students who are well-qualified academically are encouraged to participate in the UH Mānoa Honors Programs (see the “Special Programs” section within the Colleges of Arts and Sciences).

New Students

An orientation session for new students is held each semester before classes begin. Incoming students receive approval of their program of courses at that time. In addition, incoming students with waived course work (e.g., advanced placement examination) must still fulfill credit hour requirements and should contact the College’s Student Academic Services Office in Holmes 250 for more information.

Undergraduate Programs

Each of the curricula offered by the College of Engineering provides a fundamental science-oriented university education
with coverage of communications, the humanities, and social sciences, as well as the basic physical sciences of mathematics, physics, and chemistry. The curricula also encompass engineering sciences common to all engineering disciplines and project courses that introduce the engineering method of design.

**Admission Requirements**

Requirements for admission to UH Mānoa are described in the “Undergraduate Education” section of the *Catalog*. High school students applying to the College of Engineering should have completed trigonometry, physics, and chemistry. The college also uses aptitude tests and high school records in its screening procedure.

Transfer students must have completed ENG 100, MATH 241 and 242, PHYS 170/170L, and CHEM 161/161L and 162 or their equivalents, and have an overall cumulative GPA of 3.0 or higher.

Students who do not meet entry requirements may enroll in Pre-engineering in Arts and Sciences and transfer into an engineering major at a later time. Pre-engineering students are advised by the College of Engineering and may enroll in lower division engineering courses with no additional approvals needed.

**College Requirements**

Course work in each curriculum consists of a set of required courses common to all engineering majors and additional courses to satisfy departmental requirements. The courses required of all engineering students, which also satisfies the General Education Core Requirements of UH Mānoa, consist of the following 51 credits:

**Written Communication**
- ENG 100 Composition I (3) (FW) or approved FW course

**Arts, Humanities and Literature**
- COMG 251 Principles of Effective Public Speaking (3) (DA)
- One elective (3) (DH or DL)

**Social Sciences**
- ECON 120 Introduction to Economics (3), ECON 130 Principles of Microeconomics (3), or ECON 131 Principles of Macroeconomics (3) (DS)
- One elective (3) (DS)

**Global and Multicultural Perspectives**
- Two approved FG electives (6)

**Symbolic**
- MATH 241 Calculus I (4) (FS)
- MATH 242 Calculus II (4)
- MATH 243 Calculus III (3)
- MATH 244 Calculus IV (3)

**Natural Sciences**
- CHEM 161/161L, and 162 General Chemistry/Lab (3/1/3) (DP/DY)
- PHYS 170/170L General Physics I/Lab (4/1) (DP/DY)
- PHYS 272/272L General Physics II/Lab (3/1) (DP/DY)

In addition, a student must complete the Focus Graduation Requirements, 1H, 1E, 1O, and 5W courses. The Hawaiian or Second Language is not required for the engineering degree.

**BS Degree Requirements**

The undergraduate curricula are designed to be completed in eight semesters.

To receive a bachelor of science degree in engineering, a student must adhere to the following:
1. Complete the course work for one of the engineering curricula, which also satisfies all UH Mānoa requirements;
2. Maintain a minimum GPA of 2.0 for all registered credit hours; and
3. Maintain a minimum GPA of 2.0 for all upper division courses (numbered 300-499) in mathematics, science, and engineering.

**Major Requirements**

See appropriate departments for specific major requirements leading to a bachelor’s degree.

**Other Requirements**

Undergraduate engineering students are subject to the policies of academic probation, suspension, and dismissal of UH Mānoa as specified in the *Catalog*. In addition, engineering students with either a cumulative GPA of less than 2.0 or an upper division GPA of less than 2.0 may be placed on academic probation. The student must maintain a semester GPA of 2.0 or higher for each probationary semester. Failure to meet any of the above conditions may result in suspension or dismissal. Engineering undergraduates may also be suspended when they fail to achieve a cumulative GPA of at least 1.7 after attempting 24 credit hours.

Students who are suspended must reapply for admission to the Office of Admissions within specified deadlines. Students who do not take courses after being suspended for the required one semester are eligible to be readmitted to the College of the Engineering. Suspended students who attend another institution (including other UH system campuses) will be considered “transfer” students when reapplying to UH Mānoa and must meet the transfer requirements of the College of Engineering.

**Graduate Programs**

See appropriate department for specific description and requirements.

**Student Organizations**

Student chapters of professional engineering societies are active at the college, and all students are encouraged to participate. Honorary societies are represented in all three departments.

**Honors and Awards**

The College of Engineering and its departments provide scholarships and awards to exceptional students. For a list of these scholarships, see the “Tuition, Fees, and Financial Aid” section of this *Catalog* or at www.eng.hawaii.edu/prospective-students/financial-aid-and-scholarships/.

**Programs**

**Hawai‘i Center for Advanced Communications**

The Hawai‘i Center for Advanced Communications (HCAC) is a multidisciplinary research center established by the legislature and approved by the Board of Regents in 2000. Currently, with federal, state, and private funding, HCAC continues on its mission to be the leading center for innovative research in the broader areas of wireless communication and radar technologies with joint research and educational activities that promote national and international collaboration and partnership with...
industry. The center has tenured faculty, several full-time collaboration and partnership with industry. The center has tenured faculty, several full-time researchers, and graduate students working towards their MS and/or PhD degrees in Electrical Engineering.

Research activities in the center are funded by federal agencies including the National Science Foundation (NSF), Army Research Office, Office of Naval Research, Army CERDEC, as well as by large umbrellas of corporate sponsors including Agilent Technologies, BAE, L-3, Motorola, and Raytheon.

Faculty in the center have been recognized with several national and international awards including the 2012 IEEE AP-S Distinguished Educator Award, 2013 IEEE MTT-S Distinguished Educator Award, and both the UH Regents Medal for Excellence in Research and the UH Regents Medal for Excellence in Teaching.

National and International Collaboration: The center is a member of the NSF Industry/University Cooperative Research Center (I/U CRC), and has international partnership agreements with The State Key Lab on Microwave & Digital Communications, Tsinghua University, China; The Centre National De La Recherche Scientifique, University of Nice-Sophia Antipolis, France; Communication Research Center, Yuan Ze University, Taiwan; and Department of Signal Theory and Communications, Universitat Politècnica de Catalunya, Barcelona, Spain.

Research Areas: Research areas include advanced multifunction and ultra wideband antenna designs, propagation modeling and characterization of wireless communication channels, digital signal processing (DSP) for smart antennas, Ground Penetrating Radar technologies for UXO and IED detection and classification, microwave methods for biomedical applications (in collaboration with JABSOM), and the development of Radio Frequency tunable devices for reconfigurable antennas cognitive radio, and solar energy harvesting applications. Recent research projects include microwave stethoscope for vital signs monitoring and measuring changes in lung water content, the development of antennas for directional networks, use of Genetic Programming for the design of ultra wideband metamaterials, and the development of textile antennas for medical and military applications.

STEM Outreach: HCAC has received significant grants from the State of Hawai‘i, National Science Foundation, and corporate sponsors to launch its STEM outreach program for middle schools in Hawai‘i (Research Experience for Teachers, RET).

Laboratory Facilities: HCAC has developed four state-of-the-art laboratories to support the ongoing research activities. This includes an indoor antenna range, a wireless communications testbed, microwave measurements lab, and the RF devices fabrication and characterization lab.

For graduate studies, all students/applicants need to fulfill the requirements of Graduate Education, manoa.hawaii.edu/graduate/, as well as those of the Electrical Engineering Department. For availability of research opportunities, visiting scholar and graduate fellowships at HCAC, contact Teri Imanaka at imanaka@hawaii.edu.

Hawai‘i Space Flight Laboratory
The Hawai‘i Space Flight Laboratory (HSFL) was established in 2007 as a multidisciplinary research and education activity bringing together individuals from diverse areas to explore, study, and advance the understanding of the space environment.

Among HSFL’s goals are to provide the infrastructure for collaborative space and science research, encourage entrepreneurship and industrial relations, and provide students with a rich and exciting education for careers in space science and engineering.

Hawai‘i is located in a unique location to become a low-cost gateway to space and positions UH Mānoa as the only university in the world to have both satellite fabrication capabilities and unique, direct access to orbital space. This will enable many experiments that study the earth’s oceans and continents, as well as test numerous engineering experiments in the hostile environment of space. The HSFL expands the Small-Satellite Program established at UH Mānoa, College of Engineering in 2001 by merging research interests in both the College of Engineering and the School of Ocean and Earth Sciences and Technology.

Civil and Environmental Engineering
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Faculty
*C. S. Papacostas, PhD (Chair)—transportation, systems engineering
*A. R. Archilla, PhD—transportation and infrastructure systems engineering
*R. W. Babcock, PhD—environmental engineering
*S. Bateni, PhD—hydraulics
*H. B. Brandes, PhD—geotechnical engineering
*O. P. Francis, PhD—coastal engineering and sustainable infrastructure; design, observations, numerical methods
*G. Johnson, PhD—structural engineering
*A. S. Kim, PhD—environmental engineering and physics, parallel computing
*D. Ma, PhD—structures
*P. G. Nicholson, PhD—geotechnical engineering
*O. Ooi, PhD—geotechnical engineering
*P. D. Prevedouros, PhD—transportation engineering
*H. R. Riggs, PhD—structural engineering, numerical methods
*I. N. Robertson, PhD—structures, earthquake engineering
*L. Shen, PhD—structural engineering
*A. Singh, PhD—construction and cost engineering, project management, quality control, construction safety, housing, coastal protection, energy analysis
*M. H. Teng, PhD—hydrodynamics, coastal and hydraulic engineering
*T. Yan, PhD—environmental engineering, environmental microbiology

Adjunct Faculty
A. A. Yee, MS—structural engineering
G. Fischer, PhD—structural engineering
C. Ray, PhD—groundwater hydrology, water quality and environmental engineering

Cooperating Graduate Faculty
A. I. El-Kadi, PhD—groundwater hydrology
R. C. Ertekin, PhD—naval architecture, offshore engineering, hydrodynamics, computational methods
W-W. W. Su, PhD—biochemical engineering, plant cell culture, molecular biotechnology

* Graduated Faculty
S. Q. Turn, PhD—thermo chemical energy conversion, fuels processing, energy systems

**Degrees Offered:** BS in civil engineering, MS in civil engineering, PhD in civil engineering

**The Academic Program**

Civil engineering is concerned with the activities of people and the environment. The civil engineer conceives, plans, designs, constructs, operates, and maintains the physical works necessary for the environmental needs of people. Students who enter the program today can look forward to one of the most rewarding careers open to men and women—rewarding in personal fulfillment, enduring service to humankind, and financial reward. The curriculum is uniquely designed to meet the demands of business, industry, and government.

The mission of the Department of Civil and Environmental Engineering is to 1) educate civil engineers that meet the requirements of the profession, committed to life-long learning, and have the potential to be the future leaders of the profession; 2) create, develop, and disseminate new knowledge through high quality, innovative research; 3) provide service to various agencies of the state and counties of Hawai‘i and the engineering community; and 4) provide leadership to the civil engineering profession in the Asia/Pacific Region.

**Undergraduate Study**

**Bachelor’s Degree**

The department’s educational objective is to produce graduates who in the first few years following graduation will:

1. Possess technical and non-technical knowledge/skills that will contribute to personal and employer success and benefit the communities they serve;
2. Adhere to accepted professional ethical standards;
3. Practice civil engineering in one or more of the following areas: construction, environmental, geotechnical, hydraulics/hydrology, structural, transportation;
4. Accept responsibility as engineers in the private and public sectors in Hawai‘i, the Asia-Pacific region, and elsewhere.

The BS degree requires completion of at least 125 credit hours of course work, the equivalent of four years of full-time work. These requirements include 65 credit hours of civil and environmental engineering courses from the following areas: applied mechanics, structural analysis and design, hydraulics, transportation, construction, soil mechanics, hydrology, water resources, and environmental engineering. There are additional required courses in mathematics, physics, and chemistry, as well as courses required by UH Mānoa in humanities and social sciences. The curriculum provides a broad-based background of fundamentals with coverage of the humanities and social sciences, basic sciences, mathematics, and the engineering design method. Course enrollment for all CEE majors is subject to the approval of an advisor. The requirements are described below and reflected on the check sheet and the list of course prerequisites.

All electives are subject to the approval of the instructor.

The student learning outcomes (SLOs), also known as program outcomes, describe a skill set that students are expected to have at the time of graduation. The SLOs are:

a. An ability to apply knowledge of mathematics, science, and engineering;

b. An ability to design and conduct experiments, as well as to analyze and interpret data;

c. An ability to design a system, component, or process to meet desired needs;

d. An ability to function on multi-disciplinary teams;

e. An ability to identify, formulate, and solve engineering problems;

f. An understanding of professional and ethical responsibility;

g. An ability to communicate effectively;

h. A broad education necessary to understand the impact of engineering solutions in a global, societal, and environmental context;

i. A recognition of the need for, and an ability to engage in, life-long learning;

j. A knowledge of contemporary issues; and

k. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice, particularly recognizing the integral role of computers in engineering and the rapid expansion of resources on the internet.

**College Requirements**

Students must complete the College Requirement courses for engineering (see “Undergraduate Programs” in this section).

**Departmental Requirements**

Students must complete the following courses as well as one course in engineering math and two technical electives, (specific options are provided on the curriculum check sheet):

- EE 160 or ICS 111
- CEE 270 Applied Mechanics I (3)
- CEE 271 Applied Mechanics II (3)
- CEE 305 Applied Probability and Statistics (3)
- CEE 320 Fluid Mechanics Fundamentals (4)
- CEE 330 Environmental Engineering (4)
- CEE 355 Geotechnical Engineering I (4)
- CEE 361 Fundamentals of Transportation (3)
- CEE 370/370L Mechanics of Materials and Lab (3/1)
- CEE 375 Construction Materials (3)
- CEE 381 Structural Analysis (3)
- CEE 421 Engineering Hydraulics (3) and 431 Water & Wastewater Engineering (3)
- CEE 455 Geotechnical Engineering II (3)
- CEE 461 Pavement Engineering (3) or 462 Traffic Engineering (3) or 464 Urban and Regional Transportation Planning (3)
- CEE 471 Construction Methods (3) or 472 Construction Management (3) and 485 Reinforced Concrete Design (4) or 486 Structural Steel Design (3)
- CEE 489B Surveying and AutoCAD (2)
- CEE 489C Professional Ethics (1)
- CEE 490 Senior Design Project (3)
- ME 403, GG 312 or MATH 302 or 307
- TES: technical electives with focus on Sustainability: BE 410, CEE 444, GEOG 410, ME 453, OCN 453

Other important requirement:

1. C grade or better (C-minus is not acceptable) is required for CEE 270.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

**Specialty Tracks**

Students who want to pursue a structures track should refer to the curriculum checksheet for alternative senior year course work.
Graduate Study

Master’s Degree

The department offers a graduate program leading to the MS degree in civil engineering with several areas of concentration under Plan A (thesis) or Plan B (non-thesis). Close cooperation is maintained with other departments and the Water Resources Research Center. Details and requirements of each plan may be obtained from the department office or on the web.

Applicants must present a BS in civil engineering or the equivalent as determined by the application review committee (and/or may be required to fulfill deficiencies) and must submit a Statement of Objectives form and evidence of passing the FE (Fundamentals of Engineering) exam or the results of the GRE General Test. If so required by Graduate Education, applicants must supply the TOEFL score.

Requirements

Both Plan A and Plan B require a minimum of 30 credit hours, exclusive of seminars. Plan A includes 9 credit hours of thesis research and a minimum of 12 credit hours in graduate civil and environmental engineering courses, exclusive of thesis, seminar, and directed reading. Plan B includes a minimum of 18 credit hours of graduate civil and environmental engineering courses, exclusive of seminar and directed reading, as well as a technical report. Both plans require a minimum of 1 credit of seminar.

Doctoral Degree

Applicants to the PhD program must have fulfilled the requirements for the MS in civil engineering at UH Mānoa or its equivalent as determined by the application review committee. Those who have earned the MS at universities other than UH Mānoa must furnish the results of the GRE General Test or submit evidence of passing either the FE (Fundamentals of Engineering) or the EIT (Engineer-in-Training) or PE (Professional Engineer) exam. All applicants must furnish official transcripts of all previous undergraduate and graduate studies and three letters of reference clearly indicating that they are capable of completing a rigorous PhD program. Applicants must also supply a letter explaining in detail their career goals, specific area of concentration, work experience, and reasons for applying to the program. If so required by Graduate Education, applicants must supply the TOEFL score.

Requirements

Candidates for a PhD are required to pass a qualifying examination consisting of oral and written components. The examination will be confined to basic topics in civil engineering. One purpose of the qualifying examination is to identify possible deficiencies in the student’s background with a view toward remedial measures. In addition, the examination serves as a means of assessing the student’s potential for doctoral studies.

Students attain the status of doctoral candidate only after passing the qualifying examination and submitting a dissertation proposal that receives the unanimous approval of the dissertation committee.

To earn a PhD in civil engineering, a student must satisfactorily complete a minimum of 50 credit hours in course work beyond the BS and a minimum of 1 credit hour in civil and environmental engineering graduate seminar as a PhD student. Students must also complete and successfully defend a satisfactory doctoral dissertation. Based on a written recommendation of the student’s dissertation committee and with the approval of the chair of graduate studies in civil engineering, students entering the PhD program may be granted an equivalence of up to 30 credit hours earned as part of the student’s master’s program. The 30 credit hour equivalents may include up to 9 credit hours for the previous MS thesis work but exclude graduate seminar credit hours taken as part of the MS program.

The courses that a student undertakes to fulfill the PhD credit hour requirements must be approved by the student’s dissertation committee. At least 27 credit hours must be from graduate-level civil engineering courses. The remaining courses may include graduate and 400-level courses offered by the civil and environmental engineering department or other appropriate departments of UH Mānoa.

Comprehensive Examination

Every PhD student must pass a comprehensive examination. The purpose of this examination is to ascertain the student’s advanced knowledge in the chosen specialty. Examinations are given when, in the judgment of the dissertation committee, the student has had sufficient preparation, but not sooner than six calendar months after the student has passed the qualifying examination.

Students pass the examination if no more than one committee member opposes such an action. Students who fail may, at the discretion of the graduate faculty, repeat the test once at least six months later. Students who fail the examination a second time are dropped from the program.

Dissertation Defense

PhD candidates are required to take a final oral examination in defense of their dissertation. The examination is conducted by the candidate’s dissertation committee. Students pass upon the favorable recommendation of the majority of the committee.

Electrical Engineering

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Faculty

*W. A. Shiroma, PhD (Chair)—electromagnetic theory, microwaves
*G. Arslan, PhD—distributed systems, Markov decision problems, nonlinear and robust control, game theory, learning and adaptive control
*O. Boric-Lubecke, PhD—RFICs for wireless communications, millimeter-wave and microwave devices, circuits and systems and biomedical applications
*P. E. Crouch, PhD (Dean)—nonlinear systems and control
*T. P. Doherty, PhD—digital systems, computers
*Y. Dong, PhD—computer networks and network security, distributed systems, computer architecture
*M. Fripp, PhD—power systems, smart grids, renewable energy
*N. T. Gaarder, PhD—communication theory, information theory
*D. Garmire, PhD—M/NEMS, CAD for M/NEMS, computer vision, computational biology
*A. Host-Madsen, PhD—communications signal processing, CDMA communications, multi-user communications, equalization

* Graduate Faculty
The undergraduate and graduate programs focus on three major areas: computers (algorithms, security, networking, hardware, and software), electro-physics (solid-state devices and sensors, analog, circuit design, and microwaves and photonics), and systems (telecommunications, automatic controls, and signal processing).

The culmination of the undergraduate programs is the capstone design project; this is a significant project that integrates the design content of previous courses while satisfying realistic constraints.

**Mission Statement**

The mission of the Department of Electrical Engineering is to provide quality education, research, and service to our constituents. Major goals of the department are to:

1. Educate a new generation of electrical and computer engineers to meet the challenges of the future;
2. Create, develop, and disseminate new knowledge;
3. Promote a sense of scholarship, leadership, and service among our graduates; and
4. Contribute to the development of diversity within the profession through the education of women, indigenous, and other minority students.

**Undergraduate Study**

**Design Experience Statement**

A key aspect of electrical engineering and computer engineering education is a significant and meaningful design experience that is integrated throughout the curriculum. The design experience is necessary to prepare students in becoming professionals.

At UH Mānoa, the electrical engineering and computer engineering curricula assign design credits to each course. A student graduating in electrical engineering or computer engineering is required to have a minimum of 14 design credits with 3 design credits coming from EE 496, the Capstone Design Project. Students can check their progress in obtaining design credits by checking with their advisor and looking at design credits and the Curriculum Flow Chart. EE 496 places significant design responsibility on the students as they must plan and execute a major design project. To prepare students for EE 496, students must take at least 1 credit of EE 296 Sophomore Project, and 2 credits of EE 396 Junior Project. The project courses help students in getting design experience outside the classroom as they learn engineering concepts in the classroom. The project courses and capstone project give students opportunities to work in teams, develop leadership skills, and work on open-ended design projects similar to industrial experience.

**Bachelor of Science Degrees**

The bachelor of science degree program in electrical engineering and computer engineering requires a minimum of 122 credit hours. The departmental requirements consist of 48 credit hours of basic courses. The electrical engineering program requires 24 credit hours of technical electives. The computer engineering program requires an additional 17 credit hours of basic courses, and 6 credit hours of technical electives.

All electives are subject to the approval of an advisor. Enrollment in EE courses requires a grade of C or better in all prerequisite courses.
College Requirements
Students must complete the college requirement courses for engineering (see “Undergraduate Programs” within this section).

Departmental Requirements
Electrical engineering and computer engineering students must complete the following 48 credit hours of courses:
- EE 160, 211, 213, 260, 315, 323/323L, 324, 342, 371, 495, Projects (296, 396, 496), PHYS 274, MATH 307, EB*
- EE 160 may be substituted with EE 110 for the electrical (but not computer) engineering program, in which case there are 47 credit hours.

*Engineering Breadth (EB) is satisfied by CEE 270, ME 311, or a CEE, ME, OE, or BE course that is at the 300 level or higher. It may also be satisfied by a physical, biological, or computer science course that is at the 300 level or higher and approved by the department’s undergraduate curriculum committee.

Projects
There is a requirement of EE 296, 396, and 496, which is the capstone design experience. A minimum of, respectively, 1, 2, and 3 credits are required of each.

Bachelor of Science in Electrical Engineering

Objectives
Program educational objectives for the electrical engineering program:
1. Electrical engineering graduates should be engaged in the practice of electrical engineering in industry, education, and public service.
2. Graduates should contribute to the technological and economic development of Hawai‘i, the U.S., and beyond.
3. Graduates should be prepared for admission to top graduate programs.
4. Graduates should be motivated toward and engaged in continuous professional development, through individual effort and advanced professional education.
5. Graduates should provide technical leadership, with an understanding of the broader ethical and societal impact of technological developments, and the importance of diversity in the workforce.

Outcomes
All graduates of the electrical engineering program are expected to have demonstrated:
1. An ability to apply knowledge of mathematics, science, and engineering.
2. An ability to design and conduct experiments, as well as to analyze and interpret data.
3. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
4. An ability to function on multidisciplinary teams.
5. An ability to identify, formulate, and solve engineering problems.
6. An understanding of professional and ethical responsibility.
7. An ability to communicate effectively.
8. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
9. A recognition of the need for, and an ability to engage in lifelong learning.
10. A knowledge of contemporary issues.
11. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Technical Electives
Electrical engineering students must complete a minimum of 24 credit hours of technical electives. A minimum of 17 credits is in one of the major tracks (electro-physics and systems), which includes all courses in Group I and the remaining courses from Group II.

A minimum of 7 additional credits is required from the following list, of which 3 credits must be from outside the major track, and 1 credit must be a laboratory.

Electro-Physics Track:
- Group I: EE 326/326L, 327, 372/372L
- Group II: EE 328/328L, 422/422L, 423, 425, 426, 427, 435, 438, 470, 471, 473, 474, 475, 477, 480

Systems Track:
- Group I: EE 343/343L, 351/351L, 415
- Group II: EE 344, 416, 417, 435, 442, 446, 449, 452, 453

The following Computer Engineering courses may also be used as technical electives: EE 205, 361/361L, 366, 367/367L, 406, 461, 467, 468, 469. EE 491 can also be used as a technical elective, but the track designation is determined on a case-by-case basis.

A student, along with a faculty member, may propose an alternate track. This alternate track must be (1) equivalent in rigor and breadth to the existing tracks, (2) endorsed by another faculty member, and (3) approved by the department’s undergraduate curriculum committee.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Bachelor of Science in Computer Engineering

Objectives
Program educational objectives for the computer engineering program:
1. Computer engineering graduates should be engaged in the practice of computer engineering in industry, education, and public service.
2. Graduates should contribute to the technological and economic development of Hawai‘i, the U.S., and beyond.
3. Graduates should be prepared for admission to top graduate programs.
4. Graduates should be motivated toward and engaged in continuous professional development, through individual effort and advanced professional education.
5. Graduates should provide technical leadership, with an understanding of the broader ethical and societal impact of technological developments, and the importance of diversity in the workforce.

Outcomes
All graduates of the computer engineering program are expected to have demonstrated:
1. An ability to apply knowledge of mathematics, science, and engineering.
2. An ability to design and conduct experiments, as well as to analyze and interpret data.
3. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
4. An ability to function on multidisciplinary teams.
5. An ability to identify, formulate, and solve engineering problems.
6. An understanding of professional and ethical responsibility.
7. An ability to communicate effectively.
8. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
9. A recognition of the need for, and an ability to engage in lifelong learning.
10. A knowledge of contemporary issues.
11. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Computer engineering students must complete the following 23 credit hours of courses:
- ICS 141, EE 205, 361/361L, 367/367L, 468, 6 credits of technical electives

The set of courses EE 160, 205, 367, and 367L may be substituted with the set of courses ICS 111, 211, and 212.

Technical Electives
A minimum of 6 credit hours of technical electives is required, from the following list of EE and ICS courses. One TE may be any other EE course at the 300 level or higher.
- EE 344 (or ICS 451), 366, 406, 449 (or ICS 451), EE 461 or (ICS 431), EE 467, 469, 491 (E, F, G), ICS 311, 313, 314, 414, 415, 421, 424, 425, 432, 441, 442, 461, 464, 465, 466, 469, 481

Note that ICS courses from the list may have prerequisite courses that are not part of the computer engineering curriculum. These courses used as technical electives will lead to more credit hours to complete the program.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

**Graduate Study**

**Degree Requirements**

Students pursuing a graduate degree in EE must have a BS degree in EE or its equivalent; otherwise, the minimum course requirements listed in the next subsection must be met. EE program has three major tracks of specialization: computers, electro-physics, and systems. Graduate students are required to specialize in a major track and have breadth outside the major track in EE. More rigorous courses from the other programs may be used to satisfy major track or breadth requirements subject to prior approval from the graduate chair. Elective courses must be from College of Engineering, College of Natural Sciences, SOEST, or Shidler College of Business. Relevant courses from other programs may be used to satisfy elective course requirements subject to prior approval from the graduate chair. Only one out of multiple courses with significantly overlapping contents (for example, cross-listed courses) can be used to satisfy any course requirement. Only courses with a grade of B or better (not B-minus) can count towards the course requirements.

**Minimum Course Requirements for EE Graduate Students Without a BS Degree in EE**

Those with an undergraduate degree in engineering or natural sciences are required to take the following courses depending on the major track selected for their graduate work (unless equivalent courses are taken in their undergraduate studies). The students might have to take courses that are prerequisite to these courses.

**Systems:**
- EE 213 Basic Circuit Analysis, and
- EE 315 Signal and Systems Analysis, and
- EE 342 Probability and Statistics

**Electro-physics:**
- EE 213 Basic Circuit Analysis, and one of the following:
  - EE 323 Microelectronic Circuits, or
  - EE 327 Theory and Design of IC Devices, or
  - EE 371 Engineering Electromagnetics

**Computers:**
- EE 342 Probability and Statistics (or discrete probability, or discrete math), and
- EE 205 Object Oriented Programming (in C++), and
- EE 361 Digital Systems and Computer Design, and
- EE 361L Digital Systems and Computer Design Lab

Those with an undergraduate degree not in any branch of engineering nor the natural sciences will be required to take a more extensive set of courses. This will be on a case-by-case basis.

**Renewable Energy and Island Sustainability Graduate Certificate**

The Renewable Energy and Island Sustainability (REIS) graduate certificate provides students an opportunity to get both breadth and depth in energy and sustainability curriculum. Students will take classes in different colleges to get a broad perspective on energy sustainability. In addition to taking courses and attending a REIS seminar class, students will conduct a capstone project to obtain greater depth in an energy research area. For more details please contact Anthony Kuh, kuh@hawaii.edu.

**Master’s Degree**

Plan A (thesis) and Plan B (non-thesis) options are offered. In addition to the general degree requirements set by Graduate Education, the following requirements must be met by MS students in electrical engineering.

**Requirements**

**Plan A (thesis):** This option requires a minimum of 30 credits such that
- 12 credits must be in 600-level courses in the major track (6 credits must be in Category I courses and 3 credits must be in Category II courses)
- 6 credits must be in 400 or higher-level EE courses outside the major track
- 3 credits must be in 400 or higher-level elective courses
- 9 credits must be in EE 700 Thesis Research (1 credit of EE 700 during the semester of graduation); students can petition to convert their EE 699 credits to EE 700 credits
- at most 6 credits can be in 400-level courses.

The graduate seminar requirement in electrical engineering or a related field, must also be fulfilled (see the seminar policy). In addition, MS Plan A students must produce a thesis and pass
the final examination. The stages of the MS Plan A program are as follows.

MS Plan A students should find faculty advisors in research areas of mutual interest as early as possible. After the initial advising with the faculty advisor, Master’s Plan A Form I (Pre-Candidacy Progress) is processed by the graduate chair. Under the advisor’s guidance, the student takes courses necessary for background knowledge, and develops a thesis proposal which involves a literature survey and preliminary research on the thesis topic. Subsequently, the student forms the thesis committee, which approves the thesis proposal. The thesis committee must satisfy Graduate Education requirements and be pre-approved by the graduate chair. The graduate chair reports the approval of the thesis proposal to Graduate Education by using Master’s Plan A Form II (Advance to Candidacy).

The candidate then carries out the thesis research and writes a thesis satisfying Graduate Education requirements. In particular, the thesis is expected to be a scholarly presentation of an original contribution to electrical engineering resulting from independent research. The candidate must keep the thesis committee informed of the scope, plan, and progress of the thesis research and manuscript. During this stage, the candidate completes the credit requirements. After completing the thesis research and writing a thesis, the candidate takes the final examination.

The final examination is administered by the thesis committee. The candidate submits the thesis to the committee and the EE office at least two weeks prior to the final examination. The examination starts with a presentation by the candidate on the thesis research, including the problems chosen, the approaches employed, and the results obtained. Throughout the examination, the candidate defends his or her thesis in response to the committee’s questions on the correctness and the significance of the approaches and results.

A majority of the committee must approve of the content of the thesis and the candidate’s ability to defend it in order for the candidate to pass. The committee members indicate their decisions on the final examination by signing Master’s Plan A Form III (Thesis Evaluation). A candidate who passes may still be asked to make various corrections and revisions to the thesis. The candidate must make the requested changes and submit the revised thesis to the entire committee. Master’s Plan A Form IV (Thesis Submission) is to be signed by the chair and a majority of the committee, including any committee members who may have been physically absent at the final examination. All those who sign must have read and approved the manuscript in its entirety. By signing this form, the committee members indicate approval of the content and the form of the finalized manuscript. A candidate who fails the final examination may repeat it only once with approval from both the graduate faculty concerned and graduate education. A candidate who fails the final examination twice is dismissed from the program. The graduate chair approves and reports the results of the final examination to the graduate division by using Master’s Plan A Form IV (Advance to Candidacy).

Plan B (non-thesis): This option requires a minimum of 30 credits such that

- 6 credits of EE 699 (These 6 credits can be substituted by 6 credits in 600-level courses in EE).

The graduate seminar requirement in electrical engineering or a related field, must also be fulfilled (see the seminar policy). In addition, MS Plan B students must complete a final project that demonstrates the knowledge and skills acquired in the program. MS Plan B students should find supervising faculty advisors in areas of mutual interest as early as possible. The final project does not need to include original research results. Acceptable forms of final projects include a literature survey, critique of research papers, software implementation of an algorithm, or hardware testing or development, subject to the prior approval of the supervising faculty. The student must write a conference-style report to document the final project activities, and submit this report to the supervising faculty and the EE office at least a week prior to the final examination. The final examination is the evaluation of the final project by the supervising faculty. This evaluation includes an oral presentation by the student to an audience including the supervising faculty. The supervising faculty reports his or her approval of the final project by sending a signed copy of the EE MS Plan B Final Examination Form to the EE office along with the final project report.

**Doctoral Degree**

Doctoral students are required to achieve a good, broad understanding of electrical engineering fundamentals and a thorough knowledge, up to its present state, in a chosen specialty. Doctoral students must also perform research in their special field under the guidance of a faculty advisor and write a dissertation that is a scholarly presentation of an original contribution to electrical engineering resulting from independent research. Participation in a substantial teaching project to develop competence in teaching is also required. In addition to the general degree requirements set by the graduate division, the following requirements must be met by doctoral students in electrical engineering.

**Requirements**

Doctoral students must have an MS degree in EE or its equivalent; otherwise, the MS course requirements must be met (equivalent courses taken elsewhere can be counted toward this requirement subject to prior approval from the graduate chair). In addition, the following 40 credits are required:

- 9 credits of 600-level courses in the major track
- 3 credits of 600-level courses outside the major track
- 3 credits of EE 790 Directed Instruction
- 24 credits of EE 699 (6 credits can be substituted by 600-level courses in EE)
- 1 credit of EE 800 Dissertation Research during the semester of graduation.

The graduate seminar requirement in electrical engineering or a related field, must also be fulfilled (see the seminar policy). Furthermore, doctoral students must pass the qualifying examination to advance to PhD candidacy, must pass the comprehensive examination for the approval of a dissertation proposal, and must pass the final examination for the approval of the dissertation itself. The stages of the doctoral program are as follows.

**Pre-Candidacy Stage**

The pre-candidacy stage covers the period from the admission until the qualifying examination is passed. Each doctoral
student is assigned a faculty advisor upon entering the program. During the pre-candidacy stage, a doctoral student prepares for the qualifying examination to advance to candidacy by enrolling in a directed reading or research course under the advisor’s direction. This preparation may be in the form of an initial exploration for a dissertation topic or it may be any other research effort on some topic of interest to demonstrate the student’s research potential. As part of this preparation, the student produces a well-written three- to six-page conference-style extended abstract on his or her research efforts. In consultation with the advisor, the student also takes courses as necessary for background knowledge.

Each student completes and submits the EE Qualifying Examination Form to the EE office by the following deadlines: students who enter the program in a fall semester are to submit the form by the following March 1; students who enter the program in a spring semester are to submit the form by the following October 1. Each student must take the qualifying examination by the end of the second semester (spring or fall) in the program. A student starting in a fall semester can petition to take the qualifying examination by the end of the first summer semester. In unusual circumstances (including an advisor change), the student can petition to postpone the qualifying examination by up to a semester.

Qualifying Examination

The qualifying examination is an oral examination administered by a committee of three graduate faculty members. One member of the committee is the student’s advisor; the graduate committee selects the final two committee members. At least one of the committee members selected by the graduate committee must be from the student’s major track of specialization.

The student submits the extended abstract to the committee and the EE office at least one week prior to the examination. The purpose of the qualifying examination is to determine the student’s research potential and knowledge of pertinent fundamentals. It starts with a presentation where the candidate demonstrates his or her ability to conduct significant research. In particular, the student is expected to demonstrate ability to understand technical concepts of sufficient complexity and to produce and implement new ideas. Throughout the examination, the committee may ask any questions broadly related to the topic of presentation to observe the student’s thought process in approaching a research problem. Any one of the following criteria is sufficient, but not necessary, to demonstrate research potential:

- producing a research result that could be accepted for presentation in a peer reviewed conference
- formulating a significant and well-motivated research problem, and proposing a well thought-out approach for solving the problem.

At least two committee members must pass the student; else, the student repeats the examination by the end of the third semester in the program. A student who does not pass the qualifying examination by the end of the third semester is dismissed from the program. The graduate chair reports the results of the qualifying examination to the graduate division by using Doctorate Form I (Pre-Candidacy Progress).

Candidacy Stage

After passing the qualifying examination, the student is advanced to PhD candidacy. At this stage, the candidate develops a dissertation proposal and prepares for the comprehensive examination. During the development of the dissertation proposal, the candidate (in consultation with the advisor) acquires the necessary background knowledge through course work and literature survey, and conducts research on the proposed dissertation topic.

Comprehensive Examination

The candidate takes the comprehensive examination within three years of entering the PhD program. Prior to taking the comprehensive examination, the candidate completes the MS course requirements and most of the PhD course work in major track or outside major track EE courses (at least 6 of the required 12 credits), writes a dissertation proposal, and forms the doctoral committee. The doctoral committee must satisfy graduate education requirements and be pre-approved by the graduate chair. The comprehensive examination is an oral examination administered by the doctoral committee and is subject to the same rules as those set by Graduate Education for the final examination.

The candidate submits the dissertation proposal to the doctoral committee and the EE office at least two weeks prior to the comprehensive examination. The dissertation proposal must have a tentative title, a description of the problems considered, preliminary results, and the proposed research for the completion of the dissertation. The comprehensive examination may be preceded, at the discretion of the individual committee members, by additional oral or written examinations.

The purpose of the comprehensive examination is to critically evaluate the merit of the dissertation proposal as well as the candidate’s ability and preparation for conducting the proposed research. It starts with a presentation where the candidate makes the case for the validity of the dissertation proposal. Throughout the examination, the committee questions the candidate on various aspects of the dissertation proposal including its scope, the significance of the problems chosen, and the approach. The committee also evaluates the candidate on the background knowledge necessary for the completion of the dissertation. In addition, the committee can suggest alternative approaches and additional topics for investigation, and can alert the candidate to new developments relevant to the proposed research.

A majority of the committee must approve the dissertation proposal in order for the candidate to pass. The committee members indicate their approval by signing the Advance to Candidacy Form (Form II). A candidate who fails the comprehensive examination may repeat it only once, no sooner than three months after the first examination. The candidate must pass the comprehensive examination within four years of entering the PhD program. A candidate who fails the comprehensive examination twice is dismissed from the program. The graduate chair reports the results of the comprehensive examination to Graduate Education by using Doctorate Form II (Advance to Candidacy).

Dissertation Stage

A candidate who passes the comprehensive examination proceeds with the proposed research and writes a dissertation. The dissertation must satisfy graduate education requirements. In particular, the dissertation is expected to be a scholarly presentation of an original contribution to electrical engineering resulting from independent research. The dissertation must be suitable for publication in respected academic journals. The candidate must keep the doctoral committee informed of
the scope, plan, and progress of the dissertation research and manuscript. During this stage, the candidate also completes the credit requirements. After completing the dissertation research and writing a dissertation and no sooner than six months after passing the comprehensive examination, the candidate takes the final examination.

Final Examination

The final examination is administered by the doctoral committee. The candidate submits the dissertation to the doctoral committee and the EE office at least two weeks prior to the final examination. The examination starts with a presentation by the candidate on the dissertation research including the problems chosen, the approaches employed, and the results obtained. Throughout the examination, the candidate defends his/her dissertation in response to the committee’s questions on the correctness and the significance of the approaches and the results.

A majority of the committee must approve of the content of the dissertation and the student’s ability to defend it in order for the candidate to pass. The committee members indicate their decisions on the final examination by signing Doctorate Form III (Dissertation Evaluation). A candidate who passes may still be asked to make various corrections and revisions to the dissertation. The candidate must make the requested changes and submit the revised dissertation to the entire committee. Doctorate Form IV (Dissertation Submission) is to be signed by the chair and a majority of the committee, including any committee members who may have been physically absent at the final examination. All those who sign must have read and approve the manuscript in its entirety. By signing this form, the committee members indicate approval of the content and the form of the finalized manuscript. A candidate who fails the final examination may repeat it only once with approval from both the graduate faculty concerned and the graduate division. A candidate who fails the final examination twice is dismissed from the program. The graduate chair approves and reports the results of the final examination to Graduate Education by using Doctorate Form IV.

Seminar Policy

Students must attend at least twelve seminars from the department seminar series, thesis defenses, and/or technical conferences. A student receives a credit of three attended seminars for giving a seminar that is not his or her final public defense, or for giving a conference presentation. Attendance should be taken by the track coordinator for the departmental seminars and by the student’s advisor for thesis defenses. Documentation should be provided by the student’s advisor for conference attendance and conference presentations. Attendance lists and documentation should be submitted to the EE office.

Mechanical Engineering

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Web: www.me.hawaii.edu

Faculty

*M. N. M. Ghasemi Nejad, PhD (Chair)—nanotechnology, composites, renewable energy, smart structures
*J. S. Allen, PhD—acoustics, multiphase fluid dynamics, microbiomechanics
*D. M. Azimov, PhD, DSc—guidance and control, autonomous space systems, space flight dynamics, optimal control
*P. J. Berkelman, PhD—haptic interfaces, surgical robotics, magnetic levitation
*B. S. Bingham, PhD—controls, dynamics, robotics, autonomous systems
*B. H. Chao, PhD—combustion, perturbation methods
*R. Ghorbani, PhD—renewable energy, dynamics, controls, design
*L. H. Hikara, PhD—corrosion materials, mechanical behavior of materials
*M. Kobayashi, PhD—computational fluid dynamics, aeroacoustics, dynamical systems, topology optimization
*J. Li, PhD—light weight materials, material, processing, manufacturing
*B. Liebert, PhD—materials science, corrosion, failure analysis
*S. F. Miller, PhD—manufacturing, design of medical devices, tribology
*W. Qu, PhD—boiling and two-phase flow, microscale thermofluid transport phenomena
*A. Z. Trimble, PhD—renewable energy, industrial automation, precision engineering
*Y. Zuo, PhD—colloids and surfaces, lung surfactants, AFM, biomedical applications

Adjunct Faculty

J. Yuh, PhD—control, robotics, design

Cooperating Graduate Faculty

M. J. Antal Jr., PhD—alternate energy, combustion
C. M. Kinoshita, PhD—combustion, energy systems, thermochemical systems
B. Y. Liaw, PhD—materials, energy conversion, solid-state ionics
S. M. Masutani, PhD—combustion, turbulent transport phenomena, energy systems
R. Rocheleau, PhD—thin film ceramic materials
S. Q. Turn, PhD—thermo chemical energy conversion, fuels processing, energy systems

Degrees Offered: BS in mechanical engineering, MS in mechanical engineering, PhD in mechanical engineering

Mission Statement

To prepare graduates for successful engineering and professional careers and leadership roles with lifelong learning and ethical conduct that will lead them to be engaged good citizens, engineers, and professionals in their community and the world.

* Graduate Faculty
Objectives
- Our graduates will be accomplished professionals by being able to formulate, communicate, and solve problems using engineering principles, methodologies, and modern tools;
- Our graduates will be professionals and leaders in industry, national laboratories, academia, and society by employing engineering fundamentals, design skills, thinking creatively, communicating effectively, working collaboratively, and implementing emerging and innovative technologies;
- Our graduates will be professionals and leaders who accept and practice their professional and ethical responsibilities, respect diversity of opinion and culture, and have a proper understanding and consideration for a healthy and aesthetic environment.

The Academic Program
Mechanical engineering (ME) is concerned with the design of all types of machines, conversion of energy from one form to another, instrumentation and control of all types of physical and chemical processes, the manufacturing and utilization of engineering materials, and control of human and machine environments. Mechanical engineers conceive, plan, design, and direct the manufacture, distribution, and operation of a wide variety of devices, machines, instruments, materials, and systems used for energy conversion, heat and mass transfer, biomedical applications, environmental control, control of human and machine environment, physical and chemical process control, materials processing, transportation, manufacture of consumer products, materials handling, and measurements. Mechanical engineers also employ Computer Aided Design (CAD), Computer Aided Manufacturing (CAM), Computer Aided Testing (CAT), Computational Fluid Dynamics (CFD), computer modeling and simulations, novel materials, robotics, and mechatronics (integration of computers with electromechanical systems) in their day-to-day activities. Mechanical engineers find opportunities for employment in every branch of industry and in a variety of government agencies. Work may involve research, development, design, analysis, manufacture, testing, marketing, or management.

Undergraduate Study
Outcomes
- An ability to apply knowledge of mathematics, science, and engineering
- An ability to design and conduct experiments, as well as to analyze and interpret data
- An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- An ability to function on multi-disciplinary teams
- An ability to identify, formulate, and solve engineering problems
- An understanding of professional and ethical responsibility
- An ability to communicate effectively
- The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
- A recognition of the need for and an ability to engage in lifelong learning
- A knowledge of contemporary issues

- An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

Professional Components
- A culminating design experience that integrates knowledge and skills acquired throughout the curriculum
- The application of engineering standards and realistic constraints, including consideration of economics, environmental sustainability, manufacturability, ethics, health, safety, society, and politics

Bachelor’s Degree
The BS degree requires completion of at least 124 credit hours of course work. The curriculum consists of a group of required courses chosen to provide students with the basic tools for the professional practice of mechanical engineering and to assist students in developing a sense of responsibility as professionals. The objectives of the lower division curriculum are to build a foundation in the basic sciences and mathematics, provide an introduction to engineering design and professional ethics, develop communications and computer programming skills, and acquire an appreciation for the humanities and social sciences. The objectives of the upper division program are to provide a sound foundation in the engineering sciences; build on that foundation for applications in the areas of energy conversion, mechanical systems and control, experimentation, and manufacturing; and encourage creativity culminating in a capstone design experience. To provide sufficient flexibility, technical elective courses enable students to acquire additional competence in areas compatible with their career objectives. All electives are subject to the approval of an advisor.

College Requirements
Students must complete the college requirement courses for engineering (see “Undergraduate Programs” within the College of Engineering).

Departmental Requirements
Students must complete the following course work:
- ME 213 Introduction to Engineering Design (3)
- CEE 270 Applied Mechanics I (3)
- CEE 271 or ME 271 Applied Mechanics II (3)
- MATH 190 Introduction to Programming (1) or EE 160 Programming for Engineers (4)
- MATH 302 Introduction to Differential Equations I (3) or MATH 307 Linear Algebra and Differential Equations (3)
- EE 211 Basic Circuit Analysis I (4)
- ME 311 Thermodynamics (4)
- ME 312 Applied Thermodynamics (3)
- ME 322 Mechanics of Fluids (3)
- ME 331 Materials Science and Engineering (3)
- ME 341/342 Manufacturing Processes/Lab (3/2)
- ME 360 Computer Methods in Engineering (3) or MATH 407 Numerical Analysis (3) or PHYS 305 Computational Physics (3)
- ME 371 Mechanics of Solids (3) or CEE 370 Mechanics of Materials (3)
- ME 372 Component Design (3)
- ME 374 Kinematics/Dynamics Machinery (3)
- ME 375 Dynamics of Machines and Systems (3)
- ME 402 Dynamics Systems Laboratory (2)
- ME 422 Heat Transfer (3)
Graduate Study

Outcomes
- Demonstrate mastery of the methodology and techniques specific to the field of study.
- Communicate both orally and in writing at a high level of proficiency in the field of study.
- Conduct research or produce some other form of creative work.
- Perform in their field of study at a professional level.

The department offers graduate programs leading to MS and PhD degrees in mechanical engineering, with areas of concentration in thermal and fluid sciences (heat and mass transfer, thermodynamics, combustion, thermal environmental engineering, biotechnology), in materials/manufacturing (nano, composite and smart materials, mechanical properties, failure analysis, electrochemistry and corrosion, processing, marine materials), and in mechanics design, systems, and controls (robotics, structures, dynamics, control, continuum mechanics, renewable energy, autonomous systems, biomedical). For qualified graduate students, teaching assistantships, research assistantships, and scholarships are available.

Master’s Degree
Applicants for admission to the MS program must have completed a BS degree in engineering or its equivalent from a reputable institution.

Requirements
Students are required to follow the Plan A (thesis) program. However, under special circumstances, a petition to follow Plan B (non-thesis) may be granted by the graduate faculty. A minimum of 30 credit hours is required for graduation, including 1 credit hour for seminar. Plan A students must take 8 credit hours for thesis, 12 credit hours in the ME 600 course series, and 9 credit hours in technical electives. Technical elective courses must be at the 400 level or above, selected from engineering, mathematics, or physical sciences approved by the student’s thesis committee. For graduation, each candidate must present an acceptable thesis (research report for Plan B) and must pass a final oral examination based on the thesis for Plan A or on the course work and the research report for Plan B.

Doctoral Degree
Applicants for admission to the PhD program must have completed the requirements for the MS in engineering, science, or related areas from a reputable institution. A direct PhD degree option is also available for applicants with a BS degree in engineering, science, or related areas.

Requirements
Intended candidates for the PhD are required to pass an oral qualifying examination within the prescribed period of time, by taking 4 credits of ME 699. The purpose of the qualifying examination is to judge students’ ability to pursue research. After passing the qualifying examination, the student will be admitted to the status of candidate in the PhD program. At the discretion of the qualifying examination committee, students who fail the qualifying examination will be dropped from the program. Students must satisfactorily complete a minimum of 50 credit hours in course work beyond the BS level. They are required to select a major within the following three areas of concentration: materials/manufacturing, mechanics/design/systems/controls, or thermal/fluid sciences.

Students who enter the program with a MS degree may, with the approval of the graduate chair, be credited with up to 30 credits for equivalent work to be counted toward their PhD-credit-hour requirement. Up to 8 of these 30 credit hours may be assigned for prior MS thesis work. Students who possess a second MS degree may be credited with up to 9 additional credit hours for equivalent work. Up to 9 credit hours may be assigned for course work taken as an unclassified graduate student. All courses shall be selected by students but must be approved in writing by their committees. These courses must form an integrated education plan. A minimum of 2 credit hours in ME 691 or its equivalent must be included in every PhD program.

Students who desire teaching experience may, with the approval of the PhD committee chair, request that the department chair assign them teaching responsibility for a particular undergraduate course. The department chair will determine whether students are qualified to teach the course in question, and, if they are deemed qualified, they may be given the teaching assignment. Students who teach a course or courses will be assigned a maximum of 3 credit hours toward their PhD course work requirements.

For direct PhD students with a BS degree, instead of 8 thesis credits, 4 credits should be taken as ME 799 (Directed Instruction) and the other 4 credits should be taken as ME 699 while taking the comprehensive examination.

Comprehensive Examination
PhD candidates must pass an oral comprehensive examination to demonstrate their comprehension of the chosen areas of study relevant to their dissertation proposals and basic knowledge of courses taken at graduate level. Students who fail the comprehensive examination may, at the discretion of the graduate faculty concerned, repeat it once after at least six months. Students who fail the examination a second time will be dropped from the program.

Final Examination
Students are required to complete a satisfactory doctoral dissertation and to pass an oral final examination based primarily upon the dissertation. The final examination will be administered by the respective PhD committee. A student passes the final examination upon the favorable recommendation of a majority of the PhD committee.
Administration
Spalding Hall 454
2540 Maile Way
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Dean: Maenette K. P. Ah Nee Benham

Centers and Programs
- Kawaihuelani Center for Hawaiian Language
- Kamakakūokalani Center for Hawaiian Studies
- Ka Papa Loʻi o Kānewai Hawaiian Cultural Garden
- Native Hawaiian Student Services

Degrees and Certificates Offered:
Undergraduate Certificate in Hawaiian; minor in Hawaiian language immersion education; BA in Hawaiian; BA in Hawaiian studies; MA in Hawaiian; MA in Hawaiian studies

General Information
Hawai‘inui‘akea School of Hawaiian Knowledge is comprised of three units that offer an integrated curriculum leading to baccalaureate and graduate degrees, certificates, and minors in their respective units.

The mission of the Hawai‘inui‘akea School of Hawaiian Knowledge is to pursue, perpetuate, research, and revitalize all areas and forms of Hawaiian knowledge, including its language, origins, history, arts, sciences, literature, religion, and education; its law and society; its political, medicinal, and cultural practices; as well as all other forms of knowledge. We recognize the unique status of the Native Hawaiian people and recognize their unique connection to these forms of knowledge by encouraging, supporting, facilitating, and ensuring the incorporation of Native Hawaiians at all levels of the university. We seek to accomplish this mission with a Native Hawaiian perspective that recognizes the holistic aspects of this knowledge, its diversities, and the importance of practical applications. Our mission is to apply this knowledge to provide service and support to the Hawaiian community, as well as extending this knowledge outward from the academy and the community, into the Pacific and other international domains.

Advising
Kawaihuelani Center for Hawaiian Language
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Advisor: Dr. Kamuela Ka‘Ahanui

Kamakakūokalani Center for Hawaiian Studies
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Tel: (808) 956-0642
Fax: (808) 973-0988
Email: lehua.nishimura@hawaii.edu
Advisor: Lehua Nishimura

Academic advisors in the respective departments assist students with clarifying academic and career goals, learning about educational options and campus resources, planning a program of study, understanding academic policies and procedures and degree requirements, and assessing their academic progress toward their degrees.

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Faculty
* K. R. K. Oliveira, PhD (Director)—innovative instruction of Hawaiian language through various cultural activities, Hawaiian place names and land tenure
* K. L. Wong, PhD (Graduate Chair)—revitalization of Hawaiian language and people
C. Baker, PhD—Hawaiian grammar, construction of Hawaiian identity through language, Hawaiian language theatre, linguistic anthropology

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* Graduate Faculty
K. de Silva, MA—Hawaiian language and literature, revitalization of language and identity through mass media
R. Koga, MA—Hawaiian and English language and literature, language teaching and learning
*R. Lopes Jr., PhD—innovative instruction of Hawaiian language through cultural means such as hula and music
K. K. Lucas, MEd—Hawaiian language learning and instruction
*K. Makekau-Whittaker, PhD—Kana'a Maoli education during the Hawaiian Kingdom period, Hawaiian language immersion education, Hawaiian culture and ceremony in language learning
R. K. NeSmith, PhD—language teaching and learning, communicative language teaching, incorporation of Hawaiian culture in language teaching
F. P. Nicholas—Hawaiian language and culture, native Hawaiian language speaker from Ni‘ihau
*M. R. Nogelmeier, PhD—innovative instruction of Hawaiian language and literature, translation, poetry, composition, creative writing
M. L. K. Saffery, MEdT—place-based Hawaiian curriculum; development of culturally appropriate interdisciplinary Hawaiian language undergraduate and graduate curriculum
*R. Solis, PhD—Hawaiian language learning and instruction, Hawaiian religion, newspaper translating and broadcasting
S. L. Warner, PhD—Hawaiian language, Hawaiian language immersion education, evaluation, curriculum development and second-language acquisition, educational psychology
*A. K. Wong, PhD—Hawaiian language and culture, immersion education, curriculum development, native Hawaiian language speaker
M. K. Wong, MA—Hawaiian language and culture, Paniolo practices and lifestyle.

Degrees and Certificates Offered: Undergraduate Certificate in Hawaiian, minor in Hawaiian, minor in Hawaiian Immersion Education, BA in Hawaiian, MA in Hawaiian

The Academic Program

Kawaihuelani Center for Hawaiian Language (HAW) offers an undergraduate certificate, a minor in Hawaiian, a minor in Hawaiian Immersion Education, and bachelor and master’s degrees in Hawaiian. The center conducts research in relevant fields of study and offers four years of language study as well as courses on immersion education, curriculum development, and topics of relevant Hawaiian cultural content. In partnership with Ho‘okūlāwi: ‘Aha Ho‘ona’a‘auo O‘wiwi (Center for Native Hawaiian and Indigenous Education), Kawaihuelani trains teachers for Hawaiian immersion schools, public schools with Hawaiian language courses, Hawaiian charter schools, and the UH Mānoa program. The faculty and staff of Kawaihuelani create and implement projects and programs that promote Hawaiian language, culture, history, and traditions such as: Ka Hālau Hanakeaka, Ho‘okūlāwi: ‘Aha Ho‘ona’a‘auo O‘wiwi (Center for Native Hawaiian and Indigenous Education), Ho‘ōlaupa‘ia: Hawaiian Newspapers Resources, Kaua‘ikulalaha, Kaulakahi Aloha, Ke Aolama, Mary Kawena Pukui Hale, Ka Waihona a ke Aloha, and Mauiakama.

Undergraduate Study

BA Degree in Hawaiian

Requirements

Students pursuing a BA in Hawaiian must complete 120 non-repeated credit hours, including the General Education Requirements (see the “Undergraduate General Education Requirements” section), Hawai‘inui‘Akeha undergraduate school requirements, and Hawaiian major requirements.

School Requirements

In addition to completing major requirements, all undergraduate majors of Hawai‘inui‘Akeha (HAW, HWST, double, and concurrent majors) must complete the following 15 credits of school required course work from both Kamakahōokalani Center for Hawaiian Studies and Kawaihuelani Center for Hawaiian Language that represent the foundation of our field of Hawaiian knowledge and also fulfill General Education Requirements of UH Mānoa. These school requirements do not apply to students pursuing a minor or certificate in Hawaiian.

HWST 107, 270 and HAW 100, 301, 302 with a GPA of 3.0 or better

Major Requirements

GPA of 2.0 in all UH Mānoa registered credit hours
33 credit hours above HAW 202 with a GPA of 3.0 or better, including:

- 24 core credits:
  - HAW 321, 331, 332, 401, 402, 433, and 452
  - 1 course (3 credits) from this list of mele (poetry, song, dance, chant) courses: HAW 383, 384, 427, 483, or 484
- A maximum of 3 credit hours from HAW 284, MAO 102, SAM 102, TAHT 104, MUS 312, MUS 412, MUS 413, SLS 430, LING 445 may be counted towards the electives
- If majors choose to take a repeatable HAW class for a second time (HAW 321, 345, 383, 433, 470, 485, 486, 499), the highest grade and credits will be counted towards the major while the lower grade and credits will only count towards their UH electives, NOT the major.
- Students must earn a grade of C or better for all Hawaiian Language courses that serve as prerequisites for other Hawaiian Language courses. Students who do not meet this requirement will not be permitted to register for the next level of Hawaiian Language.
- For Hawaiian Language majors, a grade of B- or better is required for 300-400 level Hawaiian courses counted towards the Hawaiian Language major.
- Students admitted to the BA program prior to Fall 2015 should consult an advisor to review changes that may affect their programs.
- For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Minor

Kawaihuelani offers two undergraduate minors. One in Hawaiian and one in Hawaiian Immersion Education.

Minor in Hawaiian

The overall purpose of the minor in Hawaiian is to provide an undergraduate learning opportunity tailored to classified students who are interested in Hawaiian Language as a second discipline of specialization that will complement their major studies, support their future work in and for the Hawaiian community, and/or empower their growth and development as Native Hawaiians. Acceptance into the minor follows:

- Completion of 25 credits of university work with a 2.0 cumulative and major GPA
- Admission to an appropriate academic major
- Successful completion of HAW 101, 102, 201, and 202.
Requirements

- 18 credit hours of non-introductory Hawaiian Language courses (beyond 202) including:
  - 12 credit hours in continuing Hawaiian language study (HAW 301, 302, 401, and 402)
  - 6 credit hours from HAW elective courses at the 300-400 level in various content areas
- A 3.0 GPA in courses leading to the minor
- A grade of B- or better is required for all Hawaiian Language courses counted towards the Hawaiian Language minor.

Minor in Hawaiian Immersion Education

In collaboration with Ho’okulāwi: Aha Ho’ona’aua ʻŌiwi (Center for Native Hawaiian and Indigenous Education) housed within the College of Education, Kawaihuelani administers a minor in Hawaiian Immersion Education to prepare secondary subject area teachers for the Hawaiian Language Immersion Program in the Department of Education. If you are interested in this minor, please contact Kawaihuelani’s director. For more information on dual teaching licensure, please contact the College of Education’s Office of Student Academic Services.

Certificates

On recommendation of the Center for Hawaiian Language, UH Mānoa confers certification of achievement in Hawaiian language.

Requirements

- 15 credit hours beyond the intermediate level in Hawaiian, including:
  - 6 credit hours in continuing language study
  - 9 credit hours in language, literature, or structure courses selected to complement the major field of study
- A 3.0 GPA in courses leading to the certificate is required
- A grade of B- or better is required for all Hawaiian language courses counted towards the Hawaiian language certificate.

Graduate Study

Master’s Degree

The graduate program in Hawaiian is designed to provide broad, in-depth education in the Hawaiian language, culture, and literature and is an integral part of the efforts to revitalize Hawaiian as a living language. The program is designed to create scholarship in Hawaiian in new domains, including advanced study of literature; to strengthen and expand the understanding and use of various styles of Hawaiian; to develop curriculum and resources and teacher training for the Kula Kaiapuni (Hawaiian medium schools); and to provide support to graduate students in related fields. The MA in Hawaiian is intended for students who have a broad background in Hawaiian language and culture, but want more depth in their knowledge. The three areas of the curriculum that are available are:

- Mo’olelo. The Mo’olelo curricula focuses on Hawaiian history and literature through the analysis, critique, creation and presentation of Hawaiian language resources.
- Kumu Kula Kaiapuni. The Kumu Kula Kaiapuni curricula focuses on the educational, linguistic, and cultural tools that teachers need to perform better in Hawaiian medium schools. Students producing curriculum and developing their own teaching skills will also be able to work closely with the newly established Mary Kawena Pukui Hale: Center for the Survival and Promotion of Hawaiian.
- Kālai’ōlelo. The Kālai’ōlelo curricula focuses on the linguistic analysis of Hawaiian.

Admission Requirements

All potential graduate students must submit an application to the Office of Graduate Education. Applicants to the MA in Hawaiian must have completed a bachelor’s degree and submitted the following to the graduate chair prior to admission: official transcripts from each school attended; 18 upper-division credit hours in Hawaiian and HAW 402 (or equivalent); a statement of objectives written in Hawaiian; and three letters of recommendation.

In addition, a written and oral examination in Hawaiian will be administered by the graduate chair, and an interview will be conducted by an admissions committee of Hawaiian language faculty.

Degree Requirements

- Students must complete 33 credits with a GPA of 3.0 or better and must include at least 24 credits at the 600 level or higher.
- With pre-approval from the graduate advisor, a student may include a limit of 9 credits that are not taught in Hawaiian but are related to their research.
- Students must receive a B- or better in ALL courses counted towards their degree.

Core requirements:

- HAW 601 Kākau Mo’olelo (Narrative Writing)
- HAW 602 Kākāʻōlelo Oratory (Hawaiian Speech Styles)
- HAW 604 Haku Palapala Noi Lae’o/Write a Hawaiian Master’s Proposal
- Choose one of the two courses below:
  - HAW 605 Ka Hana Noi’i (Research Methods)
  - HAW 612 Nā Mana’o Politika Hawai’i (Hawaiian Political Thought)
- HAW 615 Kuana’ike (World View)
- HAW 652 Pilina ʻŌlelo (Grammar)
- Thesis (Plan A) and Project/Non-thesis (Plan B) options are offered.

Students completing a Plan A thesis are required to take 6 credits of HAW 700. A student must write a thesis in Hawaiian on a topic approved by the student’s advisor and committee. The total number of 699 and 700 credits applied toward degree requirements shall not exceed 12 credits.

Students completing a Plan B project/non-thesis will enroll in 6 credits of HAW 695. This capstone course is the culminating experience where the student will display the knowledge he or she has researched into a form of his or her choice with the approval of the advisor and committee. Students may also choose the internship/hauhmäna relationship with a mānaleo (native speaker), kupuna (elder), or other cultural practitioner where the student will observe, learn, participate, and document the experience. A maximum of 9 credits of 699 may be applied toward degree requirements.

For more information on the MA in Hawaiian, contact the graduate chair through the departmental office.

Dual Master’s Degree Program

Students may pursue a Master’s in Hawaiian and a second master’s concurrently in Library and Information Science. Students enrolled in either program may apply for admission in
the other degree program. The dual master’s option allows sharing of many elective courses. For more information, contact the HAW graduate chair or a LIS advisor.

**Credits for Previous Hawaiian Language Experience**

**Back Credits Policy & Procedures**

Please refer to the Hawaiian and Second Language Policy on Back Credits available in the “General Education” section of the Catalog.

**Definition:** Back credits are credits received for previous language experience that do not qualify as transfer credits.

**Eligibility:** All students (including native speakers of a language and non-UH System students) with experience in Hawaiian language may be eligible to earn 3 to 16 back credits.

**One Language:** Back credits may be earned for ONLY ONE language and will be based on the first instance of taking a course for a letter grade in that language at UH Mānoa.

A repeated or backtrack course is NOT eligible for back credits.

Students who wish to earn back credits for Hawaiian language shall:

1. Make arrangements with Kawaihuelani’s academic advisor to take the Hawaiian language placement exam.
2. Complete the Hawaiian language placement exam in order to determine the appropriate level HAW course for the student.
3. Enroll (for letter grade) in the Hawaiian language course that the student was placed into after completing the Hawaiian language placement exam.
4. Earn a grade of C or better (not C-) in the Hawaiian language course that the student was placed. Back credits will not be awarded if a student does not receive a grade of C or better for the class the student was placed. The grade of C or better must be earned on the first time the course was taken.

A grade of C/NC is not eligible for back credits.

5. Make arrangements to complete forms with Kawaihuelani’s academic advisor to receive back credits. Back credits are not automatically awarded. To receive back credits, students must complete a petition form with Kawaihuelani’s academic advisor. Submit the petition form the semester after the student’s satisfactory completion of the language course, but no later than one semester before graduation.

6. Kawaihuelani’s academic advisor shall award from 3 to 16 back credits based on the course the student successfully completed with a grade of C or better. Back credits are earned with no grade assigned.

**Transfer Credits Policy and Procedures**

Please refer to the UH Mānoa Policy for Transfer Credits. Access: manoa.hawaii.edu/admissions/undergrad/policies.html#credits.

**Definition:** Transfer credits are credits received for previous language courses completed at another institute of higher education that articulate with UH Mānoa language courses. Transfer credits accepted for language courses completed at another institution of higher education are not eligible for back credits.

**Eligibility:** Majors and non-majors may request an evaluation of their Hawaiian language transfer credits, however, the request cannot be formally processed and approved until a student has been admitted to a program leading to a degree and has confirmed their intention to enroll.

1. Students shall submit to Kawaihuelani’s academic advisor:
   a. a completed “Request for Evaluation of Transfer Credits” form available at the Office of Admissions; as well as (b) supporting documents for each course requesting to be evaluated (include syllabus, course description, final product/assignment, and textbook(s)/reading(s) used). If supporting documents are not available, the Kawaihuelani Curriculum Committee may request a short interview with students to assess their Hawaiian language proficiency and to ask them about the courses in question (what was learned, what did you do, etc.).

2. The advisor will review the transfer credit petition to assure all required forms and supporting documents (listed above) are included and will check and printout the student’s transcript on STAR.

3. The advisor will then send the entire transfer credit petition (forms, documents, and transcript) to Kawaihuelani’s Curriculum Committee for review and decision-making on a case-by-case basis. The Curriculum Committee is encouraged to include faculty with specific expertise when needed. The committee will review requests twice a semester, or as needed.

4. Possible outcomes of the committee review may include:
   a. the outside course has already been articulated with UH Mānoa, so the credits will transfer and count as the articulated HAW course;
   b. the outside course is deemed equivalent to a HAW course even though it has not been officially articulated, so the credits will transfer and count as the equivalent HAW course;
   c. UH Mānoa does not have an equivalent course, but committee finds the outside course valuable and in line with the scope/mission of the program/degree, so the credits will transfer and count for an HAW upper-division elective;
   d. the outside course is not equivalent to an existing HAW course and does not align with the scope/mission of the program/degree so credits will not be counted towards any HAW course.

5. Final decisions of the Curriculum Committee will be communicated to the director and academic advisor, who will notify the student of the decision and guide them with finalizing the transfer credits process.

**Honors and Awards**

**Lokomaika‘iokalani Snakenberg Hawaiian Language Graduate Scholarship**

Offered to encourage graduate-level research and study for students specializing in Hawaiian language and related fields, this scholarship provides an award of up to $5,000 per semester to students registered in graduate programs at UH Mānoa.

**Dorothy M. Kahananui Scholarship in Hawaiian Language**

This scholarship is offered to students who have successfully completed at least the intermediate level of Hawaiian language, with preference given to doctoral or master’s degree candidates who plan to teach the language. The minimum amount of the award is resident tuition at UH Mānoa.
Red Mandarin and Lady Yi-suen Shen Scholarship in Hawaiian Studies

Offered to undergraduate students in Hawaiian studies at UH Mānoa, this scholarship covers tuition for the academic year. It is awarded to a degree candidate who demonstrates exceptional promise and achievement. Applicants must be pursuing a program of study that shows a central commitment to Hawaiian studies, including Hawaiian language.

To Apply for These Scholarships
1. Connect to www.star.hawaii.edu;
2. Log in with your username and password or ID number;
3. Select scholarship tab;
4. Search for scholarships;
5. Follow the directions for each scholarship.

Kamakakūokalani Center for Hawaiian Studies

2645 Dole Street
Kamakakûokalani 209A
Honolulu, HI 96822
Tel: (808) 956-0555
Fax: (808) 973-0988
Email: chsuhm@hawaii.edu
Web: manoa.hawaii.edu/kamakakuokalani/

Faculty

*L. Kame‘eleviha, PhD (Director)—Hawaiian and Polynesian mythology, history, land tenure, literature, genealogies, traditional navigation
*R. P. H. Kaaloa, MEd (Graduate Chair)—educational technology, distance education, Indigenous education
*C. L. Andrade, PhD—traditional navigation, Mālama 'Āina: traditional resource management, indigenous geography, Hawaiian music
*I. H. Andrade, MFA—Native Hawaiian visual culture, customary practices and contemporary arts, museum studies
*J. Armitage, PhD—Native Hawaiian literature, creative writing, children’s literature, Pacific and Indigenous literature and cultural production, Indigenous economies
*K. Baclayon, MA—Hawaiian medicinal herbs, advanced Hawaiian medicinal herbs, aquatic medicine and mahi l’a lapa’au (medical farming)
*K. Beamer, PhD—Indigenous agency, Native Hawaiian land tenure, sustainability, land and resource law of the Hawaiian Kingdom
*A. A. H. Dreixel, MFA—Native Hawaiian visual culture, customary practices and contemporary arts, politics of “imaging,” history, mythology, land tenure, cultural studies
*A. Freitas, MURP—implements educational initiatives in areas of student services, program development and strategic planning, grant writing, faculty/staff development, assessment and evaluation
*P. E. Kaula, MA—Hawaiian studies
*L. O. M. A. Keawe, PhD—comparative politics, indigenous studies; political “myths,” rhetorical tropes and “imaging,” body politics of Kanaka Maoli identity and culture; educational administration, leadership, and mentoring
*S. K. Kikiloi, PhD—Hawaiian resource management, traditional society genealogies, cultural revitalization and empowerment
*J. Osorio, PhD—politics of identity in the Hawaiian Kingdom, colonization in the Pacific, Hawaiian music
*W. K. Perry, JD—comparative politics, Hawaiian law
N.K. Ryan, MA—Hawaiian studies, hula, oli and mālama ‘āina

*S. N. K. Valeho-Novikoff, MLISc—Hawaiian librarianship, Hawaiian organization and knowledge systems, digital collections, information literacy, and advocating for Hawaiian information services
R. C. Williams Jr., PhD—history; Hawaiian studies; Hawaiian history; Pacific island studies

Emeritus Faculty
H. Trask, PhD—native political movements in Hawai‘i and the Pacific, literature and politics of Pacific island women, Hawaiian history and politics, third world and indigenous history and politics

Degree Offered: BA in Hawaiian studies, MA in Hawaiian studies

The Academic Program

Kamakakūokalani Center for Hawaiian Studies (HWST) recognizes its kuleana to nurture and educate the next generation of community leaders, teachers, and scholars who will lead Hawai‘i into the future. Kamakakūokalani offers bachelor’s and master’s degrees that reflect the breadth and interdisciplinary nature of Hawaiian ancestral knowledge. Our BA graduates have moved forward to earn advanced degrees in anthropology, art, botany, business, communications, counseling, education, engineering, English, geography, law, linguistics, medicine, ocean science, Pacific Island studies, political science, psychology, social work, theater, and urban and regional planning.

The master’s of art degree builds on the BA program by addressing crucial issues such as the sustainability and resource management of the environment that is consistent with the geography and history of Hawai‘i, indigenous pedagogy and epistemology, and a political and governmental infrastructure for a Hawaiian nation. The MA also provides professionals in government, law, criminal justice, education, social work, and various health fields, the specialized knowledge in Hawaiian history and culture needed to adequately serve an array of communities.

Undergraduate Study

Bachelor’s Degree

Students design their program around a selected area of concentration. Third-year fluency in Hawaiian language is required, as well as familiarity with Hawaiian history and literature, culture and creative expression, politics and integral components of governance, resource management and sustainability, and comparative indigenous studies.

A Native Hawaiian perspective is emphasized in the major. Students design their program around a selected area of concentration. The following are the student learning objectives for the undergraduate program of study:

Students will understand our genealogical ties to Papahānukomoku’ākea, our mother earth, and ko Hawai‘i pae ‘aina as our ancestral homeland.

Students can explain that Kanaka Maoli are one lāhui connected by our ancestors Hāloa and Haumea across nā kai ‘ewalu.

Students can discuss the story, culture, and politics in academic and non-academic settings.

Students can explain the interconnectedness of all knowledge contemporary and ancestral from a Kanaka Maoli perspective.

Students are capable of Kanaka Maoli applications, protocols, and disciplines.
Students can discuss, practice, and advance Kanaka Maoli experiences in the context of world indigenous peoples.

Students pursuing a BA in Hawaiian Studies must complete 120 non-repeated credit hours, including the General Education Requirements (see the “Undergraduate General Education Requirements” section), Hawai‘i‘ino’ikea undergraduate school requirements and Hawaiian Studies major requirements.

School Requirements
In addition to completing major requirements, all undergraduate majors of Hawai‘i‘ino’ikea (HAW, HWST, double, and concurrent majors) must complete the following 15 credits of school required coursework from both Kamakakūokalani Center for Hawaiian Studies and Kawaihuelani Center for Hawaiian Language that represent the foundation of our field of Hawaiian knowledge and also fulfill General Educational Requirements of UH Mānoa. These school requirements do not apply to students pursuing a minor or certificate in Hawaiian.

- HWST 107, 270 and HAW 100, 301, 302 with a GPA of 3.0 or better

Major Requirements
- GPA of 2.0 in all UH Mānoa registered credit hours
- A GPA of 3.0 in all courses for the major
- Total of 29 credit hours
- 17 credit hours in the following required courses:
  - HWST 207 or 281 or 285 or 351
  - HWST 222 or 224 or 225 or 372 or 478
  - HWST 341
  - HWST 342
  - HWST 343 or 390 or 490
  - Senior Capstone (2 credits)
- 12 credit hours of approved courses in ONE of these areas of concentrations:
  - Hale‘au o Laka: Native Hawaiian Creative Expression
  - Kūkulu Aupuni: Envisioning the Nation
  - Kumu Kahiki: Comparative Hawai‘i‘ino’ikea and Indigenous Studies
  - Mālama ʻĀina: Hawaiian Perspectives on Resource Management
  - Mo‘olelo ʻŌiwi: Native History and Literature

Before beginning work on the major, students should have completed HAW 101, 102, 201, and 202; HWST 107 or 107A; HWST 270. Course enrollment should be determined through consultation with the academic advisor. Majors should be interviewed by the academic advisor by the end of the sophomore year.

Students admitted to the BA program prior to Fall 2015 should consult the academic advisor to review changes that may affect their programs.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Graduate Study

Master’s Degree
The Master of Arts degree in Hawaiian Studies builds on the BA program’s areas of concentration and features an interdisciplinary curriculum that draws from faculty strengths in indigenous knowledge as well as other academic fields. It addresses crucial issues such as the sustainability and resource management of the environment that is consistent with the geography and history of Hawai‘i, indigenous pedagogy and epistemology, and a political and governmental infrastructure for a Hawaiian nation. The MA also provides professionals in government, law, criminal justice, education, social work, and various health fields, the specialized knowledge in Hawaiian history and culture needed to adequately serve an array of communities.

Program Student Learning Objectives
Upon completion of the Hawaiian Studies master’s program students should be able to:

- Demonstrate knowledge of Indigenous research methodologies and develop a Native Hawaiian epistemology from sources in comparative Indigenous thought.
- Demonstrate understanding of Hawaiian archival research and familiarity with the rich historical primary sources existent in various archives.
- Demonstrate critical analysis of Hawaiian literature and an understanding of the significance of secondary sources in Hawaiian topics.
- Demonstrate critical thoughts and synthesis through the development of a research proposal and the completion of their thesis or practicum project (Plan A or Plan B).
- With high scholarly ability, contribute to Hawaiian research and knowledge through publications, presentations, and/or community service.

Prerequisites
The following 15 credits of prerequisite coursework are required for applicants who are not Hawaiian Studies BA degree recipients from UH Mānoa. These courses represent the educational foundations of our field and are required prerequisite courses to enroll in upper division undergraduate and graduate level courses. Although, students taking these prerequisites may enroll concurrently in graduate level Hawaiian studies courses, enrollment is only allowed by the consent of the instructor.

- HWST 107 Hawai‘i: Center of the Pacific
- HWST 270 Hawaiian Mythology
- HWST 341 Hawaiian Genealogies
- HWST 342 Chiefs of Post-Contact Hawai‘i
- HWST 343 Myths of Hawaiian History or HWST 390 Issues in Modern Hawai‘i or HWST 490 Senior Seminar in Hawaiian Studies

Applicants to the MA program must have satisfactorily completed HAW 302 or the equivalent at the time of entry. Any remaining prerequisite coursework that was not completed prior to admission must be completed within in the first year.
Courses in directed research/reading (e.g. HWST 499/699) are not to be used to make up any prerequisite courses.

**Degree Requirements**

Students must complete a total of 33 credits (not to include prerequisites) of which 18 credits must be at the 600 level or higher and have completed or tested out of HAW 402. Students are required to complete, within the program, four HWST core courses (12 credits), two HWST area of concentration courses (6 credits), and a HWST thesis or practicum research course (6 credits). The remaining (9 credits) may be made up of elective coursework.

**Major Required Courses**

There are four core classes that all MA students are required to take. They form the foundation of the MA program:

- HWST 601 Indigenous Research Methodologies
- HWST 602 Hawaiian Archival Research
- HWST 603 Review of Hawaiian Literature
- HWST 604 Writing a Hawaiian Thesis

**Areas of Concentration**

MA candidates will choose two of the five areas of concentration to focus their research. Candidates will be required to integrate the two areas of concentration into a thesis (Plan A) or a non-thesis (Plan B).

- **Hâlau o Laka: Native Hawaiian Visual Culture**
  - HWST 620 ‘Ike Pono-Visual/Cultural Knowledge
  - HWST 621 ‘Ike Maka-Visual/Cultural Knowledge

- **Kûkulu Aupuni: Envisioning the Nation**
  - HWST 690 Kûkulu Aupuni: Envisioning the Nation
  - HWST 691 Kûkulu Aupuni: Sovereign Hawaiian State, Domestic Kingdom Law, Governance and Politics

- **Kumu Kahiki: Comparative Polynesian and Indigenous Studies**
  - HWST 670 Kumu Kahiki: Comparative Hawaiian and Tahitian Cosmogonies
  - HWST 671 Kumu Kahiki: Life Narratives in Mixed Media & Literature

- **Mālama ‘Āina: Hawaiian Perspectives on Resource Management**
  - HWST 650 Hawaiian Geography and Resource Management
  - HWST 675 Huaka‘i Hele Heiau Hawai‘i‘i‘ina‘i‘kea: Study Abroad on Polynesian Temples

- **Mo‘olelo ‘Oīwi: Native History and Literature**
  - HWST 640 Mo‘olelo ‘Oīwi: Historical Perspectives

**Admission Requirements**

Admission to the Hawaiian Studies program is only for the fall semester. Students must meet the requirements set by the Graduate Division. In addition to the requirements of the Graduate Division, prospective students must also submit the following application materials directory to the Hawaiian Studies department:

1. Hawaiian Studies Graduate Application Information Form
2. Writing Sample: a five to ten page research paper done for a class and for which the applicant received a grade and credit as an undergraduate (any course, any topic). Paper must be a clean copy with no comments from professor. In lieu of such a document, applicants may write an original essay five to ten pages in length as an overview that conveys the nature of the applicants’ undergraduate major field of study.
3. A two-page statement of intent describing the applicant’s proposed thesis topic and its basic relationship to the interdisciplinary field of Hawaiian Studies.

4. 3 current letters of recommendation from the applicant’s former professors of which at least 1 must be from either a Hawaiian Studies faculty member (not to include GTAs, lecturers, or academic advisors) or from the Hawaiian Studies graduate chair after an interview (if applicant is unable to obtain a recommendation from a Hawaiian Studies faculty member).

**Note:** Application materials are available on the department website or from the Native Hawaiian Student Services Office in Room 211.

**Dual Master’s Degree Program**

Students may pursue a Master’s in Hawaiian Studies and a second master’s concurrently in Library and Information Science. Students enrolled in either program may apply for admission in the other degree program. The dual master’s option allows sharing of many elective courses. For more information, contact the HWST graduate chair or a LIS advisor.

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**Ka Papa Lo‘i o Kānewai**

2645 Dole Street
Kamakakūokalani 211B
Honolulu, HI 96822
Tel: (808) 956-0546
Fax: (808) 973-0988
Email: kanewai@hawaii.edu
Web: manoahawaii.edu/hshk/ka-papa-loi-o-kanewai/
Director: Makahiapo Cashman

Ka Papa Lo‘i o Kānewai is a Hawaiian cultural research and outreach program organizationally housed in Hawai‘i‘ina‘i‘kea School of Hawaiian Knowledge at UH Mānoa. In the ahupua‘a of Waikiki, Kānewai is the only centrally located venue in Honolulu that provides a culturally place-based experiential learning center and a pu‘uhonua.

In 1980, several students from UH Mānoa re-discovered the abandoned ‘āwaiwai at Kānewai and restored its flow of water, after which they planted kalo and other native plants in the areas surrounding the lo‘i.

The group became known as Ho‘okahawai Ho‘olulu ‘Āina based on the philosophy “make the water flow, make the land productive.” Along with the guidance of kūpuna such as Uncle Harry Kūhihi Mitchell and ‘Anakala Eddie Kaanana, the traditional practices have been perpetuated for future generations to experience.

By serving as a cultural resource center, Kānewai focuses its work on perpetuating and preserving Native Hawaiian customary and traditional practices of natural resource management. Activities like first Saturdays, UH classes, school, and community groups visit on a regular basis to engage in mālama ‘āina at the lo‘i and preserve many Hawaiian kalo varieties.

Kānewai has formed a partnership with Kamehameha Schools ‘Āina ‘Ulu program. Through this program, Kānewai opened a sister site in Punalu‘u, within the Ko‘olau district of O‘ahu, which provides an alternative site for participants and students to experience lo‘i at a grander scale.
Native Hawaiian Student Services (NHSS)

Kamakakūokalani Center for Hawaiian Studies
2645 Dole Street
Kamakakūokalani 211
Honolulu, HI 96822
Tel: (808) 956-0546
Fax: (808) 973-0988

Queen Lili‘uokalani Center for Student Services
2600 Campus Road
QLCSS 104
Honolulu, HI 96822
Email: nhss@hawaii.edu
Website: manoa.hawaii.edu/nhss

Throughout our programs and services, NHSS creates experiences that intentionally engage Hawaiian identity because we believe it is integral to supporting student success. As such, we strive to provide co-curricular learning experiences that help to build leadership, life balance, and community among our students. Whether you are thinking about college, already in college, ready to return to college, or preparing to enter into the workforce, we are here to help you succeed. We are here to support you.

NHSS maintains two student Resource Centers at UH Mānoa. The two spaces provide similar services and programs our students have come to value and enjoy: academic and wellness counseling; math, writing and Hawaiian language tutoring; PC and Mac computer and printing access; Promethean Smart Board technology; launa (socialize, relax) and meeting space; programs and services referrals; academic enrichment, career development and technology workshops; cultural and community engagement opportunities. Our Student Resource Centers continue to serve Native Hawaiians on campus with resources that connect them to one another.

Scholarships

Gladys ‘Ainoa Brandt Scholarship Fund
The scholarship will support degree-seeking undergraduate and graduate students in the area of Hawaiian Studies at the UH Mānoa’s Hawai‘inui‘ākea School of Hawaiian Knowledge.

Karen Elaine Chandler Endowed Hawai‘inui‘ākea Scholarship Fund for Hawaiian Studies, Dance and Music
This scholarship supports degree-seeking undergraduate students in Hawaiian Studies or Hawaiian Language at UH Mānoa’s Hawai‘inui‘ākea School of Hawaiian Knowledge.

Chris Grootaert Endowed Hawai‘inui‘ākea Scholarship Fund
This scholarship supports degree-seeking undergraduate and graduate students in Hawaiian Studies or Hawaiian Language at UH Mānoa’s Hawai‘inui‘ākea School of Hawaiian Knowledge.

John Dominis Holt Scholarship
This scholarship supports degree-seeking undergraduate and graduate students in the area of Hawaiian Studies at UH Mānoa’s Hawai‘inui‘ākea School of Hawaiian Knowledge.

Na Lei ‘Oiwi Scholarship
This scholarship supports degree-seeking undergraduate and graduate students in Hawaiian Studies or Hawaiian Language at UH Mānoa’s Hawai‘inui‘ākea School of Hawaiian Knowledge.

Pacific Islands Institute Hawaiian Studies Graduate Scholarship
This scholarship supports degree-seeking graduate students enrolled in Hawaiian Studies at UH Mānoa’s Hawai‘inui‘ākea School of Hawaiian Knowledge.

To apply for these scholarships
1. Connect to https://www.star.hawaii.edu
2. Log in with your username and password or ID number
3. Select scholarship tab
4. Search for scholarships
5. Follow the directions for each scholarship
General Information
The College of Health Sciences and Social Welfare is made up of three professional schools—medicine, nursing and dental hygiene, social work, and public health studies. It was established to provide a coordinated interdisciplinary approach to the solution of problems common to the four fields. Interdisciplinary courses, colloquia, institutes, and practicum experiences permit students to become acquainted with one another and with trends and developments in the professions represented. The college is governed by an executive committee composed of the deans.

The degree programs of each field are summarized in this Catalog and in separate bulletins published by the units, available through their student services offices. These bulletins are available through the student services office of each school.

Mission
The mission of the college is to serve society by increasing, refining, disseminating, applying, and sharing knowledge, wisdom, and values relating to the health and social welfare concerns of the public. It carries out this mission through research, instruction, and service in medicine, nursing, public health, social work, and related health and biomedical sciences.

Degrees and Certificates
For information on degree and certificate offerings, refer to the Catalog sections on the John A. Burns School of Medicine (currently incorporates the Office of Public Health Studies degree information and course offerings), School of Nursing and Dental Hygiene, and Myron B. Thompson School of Social Work.
Aging and Gerontology

Degrees and Certificates Offered: BA in interdisciplinary studies (emphasis on aging), see the “Undergraduate Education” section of the Catalog for more information.

Cell and Molecular Biology Graduate Program

John A Burns School of Medicine
BSB 222
651 Ilalo Street
Honolulu, HI 96813
Tel: (808) 692-1514
Fax: (808) 692-1968
Web: www.hawaii.edu/cmb/CMB/Home.html

Graduate Faculty
M. J. Berry, PhD (Co-chair)—selenoprotein synthesis
M. Gerschenson, PhD (Co-chair)—infectious diseases, HIV mitochondrial medicine

Biochemistry
A. Bachmann, PhD—pharmacology
D. M. Jameson, PhD—energetics and dynamics of protein interactions; fluorescence spectroscopy
H. L. Ng, PhD—structure based drug design and membrane protein crystallography
S. E. Seifried, PhD—molecular recognition and transcriptional control
A. Yanagihara, PhD—biochemistry of neurotoxins, neuroactive compounds in cnadarians

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professionals in medical technology, government, and related fields who wish to obtain broad training in modern cell biology to advance their credentials in their chosen fields. The completion of the MS Plan A serves as a qualifying examination for students who intend to continue toward the PhD in cell and molecular biology. It may also serve as a terminal degree for those who wish to pursue careers as research technicians, either in the public or private sector.

Advising
For complete details regarding the program, contact Lyn Hamamura at msbiosci@hawaii.edu or visit the website at www.hawaii.edu/cmb/CMB/Home.html.

Graduate Study
Applicants are expected to have at least a bachelor’s degree emphasizing biological or physical sciences with courses in calculus, organic chemistry, biochemistry, and cellular and molecular biology. Applicants with MD degrees are welcome. Results of the Graduate Record Examination (GRE) general test should be submitted with the application, and students whose native language is not English are required to take the Test of English as a Foreign Language (TOEFL). Three letters of recommendation from former instructors or research supervisors, a CMB program graduate express form, and transcripts from previous universities or colleges attended must also be submitted.

Master’s Degree
The curriculum core of the CMB program is a specialized lecture class, spanning two semesters (CMB 621-622). Additional required courses are CMB 611 Seminar in Biomedical Science and CMB 626 Ethics in Biomedical Research. The remaining credit requirements can be fulfilled by specialized courses, seminars, and research units as recommended by the particular committee and research advisor each student picks to guide their academic program. Following the completion of the two semester core course, the student is expected to pass a qualifying exam, form a committee, and then propose, complete, and defend an original research project (MS Plan A) or study plan and research paper (MS Plan B).

Doctoral Degree
PhD candidates do not need to have completed a master’s degree. If an MS was not earned through the CMB program, the core lecture class is required (CMB 621-622). Formal course requirements beyond the core include additional courses specified by the dissertation committee, including CMB 611 Seminar in Biomedical Science, CMB 626 Ethics in Biomedical Research, and three laboratory rotations. The student is expected to form a committee, propose, complete, and defend an original research project and publish at least one paper in a peer-reviewed journal during their graduate career.

Neuroscience Specialization
The Cell and Molecular Biology Graduate Program participates in the interdisciplinary “Area of Concentration in Neuroscience.” This is a graduate “specialization” rather than a free-standing graduate program. CMB students interested in this specialization will take normal requirements for CMB plus additional coursework as determined by the Neuroscience Specialization. They will be eligible for graduate degrees in Cell and Molecular Biology (Neuroscience), presuming that their dissertation research includes an emphasis on application.

The Academic Program
The Cell and Molecular Biology Graduate Program (CMB) in biomedical sciences represents an interdisciplinary approach to graduate education with faculty in many sub-disciplines of biology dedicated to helping qualified students pursue original research using modern approaches to cell and molecular biology. The CMB graduate program brings together faculty from three colleges and various research institutes. Planning for collaborative research is emphasized in this program, as well as solid training in a variety of laboratory techniques.

The CMB graduate program provides fellowships for PhD students in their first year, and additional support in the way of research or teaching assistantships are available for qualified applicants in subsequent years. The program is intended to prepare students for careers in academia, research institutes, and in expanding areas of biotechnology in the private sector.

Master’s students fall into two categories, depending on whether they opt for a Plan A (thesis) or Plan B (non-thesis). The MS Plan B is usually a terminal degree, appropriate for professionals in medical technology, government, and related...
of Cell and Molecular Biological techniques to a Neuroscience research issue (or vice versa).

**Selected Specialized Courses**

**Cell Biology**
- MBBE 620 Plant Biochemistry
- TPSS 614 Molecular Genetics of Crops
- TRMD 604 Concepts in Immunology and Immunopathogenesis
- TRMD 671 Advanced Medical Parasitology
- TRMD 690 Seminar in Tropical Medicine and Public Health
- ZOOL 610 Topics in Development and Reproductive Biology

**Molecular Biology**
- CMB 625 Advanced Topics in Genetics
- CMB 654 Genetics Seminars
- MICR 625 Advanced Immunology
- MICR 671 Bacterial Genetics
- MBBE 680 Methods in Plant Molecular Biology
- MBBE 691 Advanced Special Topics in MBBE

**Neurobiology**
- CMB 606 Introduction to Neurosciences
- CMB 705 Special Topics in Neuroscience
- PHYL 606 Human Neurophysiology
- ZOOL 712 Topics in Nerve/Muscle Physiology

**Communication and Information Sciences**

2550 McCarthy Mall
Honolulu, HI 96822
Tel: (808) 956-5813
Fax: (808) 956-5835
Email: cis-chair@lists.hawaii.edu
Web: www.hawaii.edu/cis

**Graduate Faculty**
R. S. Ganz, PhD (Chair)—social aspects of information technology
N. Asato, PhD—Japanese/Japanese American print cultures; Asian librarianship; censorship
A. Auman, PhD—journalism, media ethics
K. Baek, PhD—computer vision, neural computation, machine learning
D. Bhawuk, PhD—organizational behavior, international management
E. S. Biagoni, PhD—networking protocol design
K. A. Binsted, PhD—artificial intelligence, software design for mobile devices, human-computer interaction
W. Buente, PhD—information and communication technologies
T. X. Bui, PhD—electronic commerce, information policy
P. Buskirk, MFA—transmedia storytelling, digital convergence, indigenous representation
H. Casanova, PhD—high performance computing, distributed systems
H. M. Chen, PhD—e-business, service engineering, business/IT alignment, electronic customer relationship management, multimedia database systems, software engineering, enterprise architecture, MIS
D. Chin, PhD—artificial intelligence, natural language processing, user modeling, intelligent agents, intelligent user interfaces, intelligent software maintenance, empirical evaluation, geographic information systems
F. Dalisay—communication effects, social capital, civic engagement
W. G. Chismar, PhD—information technology, telecommunications, medical informatics
M. E. Crosby, PhD—human-computer interaction, cognitive science, interface design for searching
E. J. Davidson, PhD—social cognitive aspects of information systems development methods
V. H. Harada, PhD—library management, information literacy
P. Jacso, PhD—digital libraries, webometrics, database content evaluation
P. M. Johnson, PhD—software engineering, high-tech entrepreneurship
R. Kazman, PhD—software engineering, human-computer interaction
T. Kelleher, PhD—public relations, online media, communication campaigns, mass communication, organizational communication
H. K. Kramer, PhD—intercultural communications
J. Leigh, PhD—big data visualization, virtual reality, high performance networking, human augmentics, video game design
D. Li, PhD—enhance privacy and security of internet of things, smart grids, software-defined networks
L. Lim, PhD—database systems
R. Montague, PhD—enquiry and learning communities, social justice and school library media
B. Oppegaard, PhD—mobile place-based media
R. R. Panko, PhD—risks in information systems, organizational communication and technology
D. Pavlovic, PhD—security, software, search and networks, quantum computation
G. Poisson, PhD—cognitive informatics, bioinformatics, machine learning
D. Port, PhD—software economics, management information systems, software engineering
L. Quiroga, PhD—information filtering systems, virtual collaboration, information retrieval, databases, library systems
N. Reed, PhD—artificial intelligence, autonomous agents
S. Robertson, PhD—human-computer interaction, digital government and digital democracy
P-M. Seidel, DrEng habil—formal methods, computer arithmetic, computer architecture, algorithms
N. Sitchinava, PhD—algorithms and data structures, parallel and distributed computation, I/O- and cache-efficient computation
J. Stelovsky, DrTechSc—computer hypermedia, human-computer interaction, cognitive science
S. Still, PhD—bioinformatics/theoretical biology, information theory, machine learning
D. Struveler, PhD—medical informatics, international public health, issues in the electronic medical record and in telemedicine
K. Sugihara, DrEng—algorithms, distributed computing and database systems, visual languages
D. Suthers, PhD—human-computer interaction; social informatics; technology-enhanced learning
A. Wertheimer, PhD—information science, library history, Japanese-American print culture
J. S. Winter, PhD—communication policy and planning (Asia-Pacific)
R. G. Worthley, PhD—statistics, information technology management
B. Xiao, PhD—human-computer interaction, social media, social-networking, dark side of information technology, data reduction, visualization

**Cooperating Graduate Faculty**
J. C. Ady, PhD—organizational communication, sojourner adjustment, international negotiation, conflict management
D. L. Alden, PhD—marketing communications
R. Doktor, PhD—international business, organizational behavior, strategy
C. P. Ho, PhD—instructional technology
M. P. McGranaghan, PhD—computer cartography, geographical information systems
N. Ordway, PhD—real estate
J. R. Wills, DBA—technology marketing

**Degree Offered:** PhD in communication and information sciences

**The Academic Program**

The Interdisciplinary Doctoral Program in Communication and Information Sciences (CIS) offers a PhD degree integrating and drawing faculty from the fields of communication, computer science, library and information science, and management information systems. Because of the broad knowledge base required to support this interdisciplinary approach, the program also draws on such fields as political science, economics, engineering, operations research, and behavioral sciences.

Recipients of the PhD will undertake careers in colleges and universities, industry, government, and private organizations.

Complete details on this program are outlined on the website, www.hawaii.edu/cis/.

**Admission Requirements**

Requirements in addition to those set by Graduate Education are:

- Master’s degree in business administration, communication, library and information science, information and computer sciences, or a closely related field
- GRE or GMAT scores
- Knowledge of computing
- Demonstrated potential for conducting independent research
- Proficiency in English. Minimum TOEFL scores of at least 6600/250/100 (paper/computer/Internet based TOEFL) are required for admission.

**Application Requirements**

In addition to the information required by Graduate Education, the following must be sent directly to the CIS program, see www.hawaii.edu/cis/?page=application:

- CIS Preliminary Express Application
- CIS Supplementary Application, including a statement of purpose, samples of relevant published or unpublished work, and skills applicable to teaching or research assistantships
- Three letters of recommendation

**Program Requirements**

The student will select one primary and two secondary areas of emphasis from those currently supported: see www.hawaii.edu/cis/?page=focus. At this printing, the areas are: biomedical informatics, communication and information theories, communication policy and planning, human-computer interaction, information systems and services, management information systems, and social informatics.

Students must pass comprehensive exams in the chosen three areas of emphasis, publish a research paper, and complete and defend an original dissertation.

**Course Requirements**

All students are required to complete the following three core courses with a grade of at least a B:

- CIS 701 Communication/Information Theories (3)
- CIS 702 Communication/Information Technologies (3)
- CIS 703 Communication/Information Research Methods (3)

In addition, all students must:

- pass at least one approved research methods or data analysis course (in addition to CIS 703) with a grade of B or better
- enroll in CIS 699 while working with a faculty research mentor to publish a research paper
- enroll in CIS 720 Interdisciplinary Seminar in CIS (1) every semester until graduation
- enroll in CIS 800 the final semester before graduation.

Courses to be taken in preparation for the comprehensive exams are to be selected from graduate offerings in related disciplines as directed by the focus area examination committees. Recommended courses as of this printing are listed below. See the program website for other directed readings required by some committees.

**Biomedical Informatics**

- ICS 614 Medical Informatics I (3)
- ICS 675 Bioinformatics: Sequences Analysis (3)

**Communication/Information Theories**

- CIS 701 Communication/Information Theories (3)

**Communication Policy and Planning**

- COM 633 Information and Communication Technologies (3)

**Human Computer Interaction**

- ICS 464 Human Computer Interaction I (3)
- ICS 664 Human-Computer Interaction II (3)
- ICS 667 HCI Design Methods (3)
- ICS 668 Social Informatics (3)
- LIS 677 Human Dimension in Information Systems (3)

**Information Systems and Services**

- LIS 663 Database Searching (3)
- LIS 671 Digital Librarianship (3)
- LIS 678 Personalized Information Delivery (3)
- ICS 624 Advanced Data Management (3)

**Management Information Systems**

- BUS 630 Managing Information Technology for Strategic Advantage (3)
- ITM 660 Current Topics in Information Systems (3)
- ITM 685 Electronic Commerce (3)
- ITM 704 Doctoral Seminar in Information Systems (3)

**Social Informatics**

- ICS 668 Social Informatics (3)
- ICS 669 Social Computing (3)
- COM 634 Social Media (3)

**Environmental Studies**

**Degrees and Certificates Offered:** Undergraduate Certificate in Environmental Studies, BA in interdisciplinary studies (emphasis on environmental studies). See the “Colleges of Arts and Sciences” section of the Catalog for more information.
Global Health Protection and Security

Office of Public Health Studies
Biomedical Sciences T103
1960 East West Road
Honolulu, HI 96822
Tel: (808) 956-6263
Email: globhlth@hawaii.edu
Web: manoa.hawaii.edu/publichealth/certificates

Graduate Faculty
D. V. Canyon, PhD, DBA, MPH, FACTM (Chair)—global health security
E. Hurwitz, PhD—epidemiology
A. Katz, MD—infectious disease
Y. Lu, PhD—environmental health
J. Maddock, PhD—social and behavioral sciences
W. Zhang, PhD—sociology

Affiliate Graduate Faculty
J. Campbell, PhD, MPH—global health security

Adjunct Faculty
S. Canyon, PhD, MBBS—infectious disease
J. Hii, PhD—global health and vector-borne disease

Certificate Offered: Graduate Certificate in Global Health Protection and Security

Program Purpose and Goals

Purpose: To promote awareness, knowledge, skills and attitudes conducive to protecting the health of populations and managing global health security issues.

Goals: Within a global context, health protection is broadly linked to global security since emerging, re-emerging and pandemic infectious diseases, major chronic diseases, natural disasters and various forms of resource scarcity including food, water and energy pose innumerable threats to human health. These public health challenges slow developmental progress, disrupt or even reverse national economic development, abrogate cooperation on treaties and agreements, exacerbate civil unrest, de-stabilize regional security and lead to the collapse of governments. The GHPS certificate provides the framework for students to critically assess the effects of major global health protection challenges on demographic trends, examine the threat and intent in bioterrorism, and how the public health sector can better monitor, plan, respond and prepare for health security events.

Background

The GHPS was first established in 1969 as a graduate certificate in population studies, but shifted its focus to global health in 2009 and to global health security in 2014. The certificate appeals to students interested in how major global health challenges impact national, regional, and health security. Students find the global perspective and flexible educational approach of the GHPS a fascinating departure from more traditional public health disciplines.

The GHPS graduate certificate is used by public health and health protection professionals who seek to pursue a career in health protection or who choose to remain in their field, to further develop knowledge and skills in health protection and security. Practitioners in health protection commonly come from varied backgrounds including doctors who practice international medicine, nurses in local health protection units, epidemiologists at regional and national units and environmental health officers at local, regional, and national levels, and health security specialists. Those interested in health protection and security often complete public health training, but the health security aspect of this program is not often included. Furthermore, the health protection workforce is aligned with other professional groups whose roles include an element of health protection, but who are not health security specialists. For instance, nurses who specialize in hospital infection control, occupational health, health emergency planners, environmental health scientists, microbiologists, outbreak controllers, etc. This certificate also provides a means to qualify those already working within the sector.

Requirements

A total of 15 credits are required to graduate, 9 of which are at the graduate level

Required Courses (9 credits):
- PH 690 Global Health Challenges (3 credits-available online)
- PH 653 Global Health and Human Security (3 credits-available online)
- GHPS 695 Independent Study Project (3 credits)

Elective Courses (6 credits)
- Graduate courses from public health or other departments may be used as electives provided that they are relevant to global health security such as emerging infectious diseases, climate change, displaced populations, transnational health, national instability, disaster management, humanitarian aid, global economics and food security are recommended.

Double Counting Credits

Students enrolled in a graduate degree may double count approved major and elective credits in their masters or doctorate towards this graduate certificate.

Graduate Interdisciplinary Specializations

Graduate specializations offer graduate students the opportunity to complete a course of study utilizing courses and faculty from several different fields. Participants must apply for admission and be admitted to a ‘regular’ graduate program.
Ecology, Evolution, and Conservation Biology

St. John 101
3190 Maile Way
Honolulu, HI 96822
Tel: (808) 956-9636
Fax: (808) 956-3923
Email: eecb@hawaii.edu
Web: www.hawaii.edu/ecsb/

Graduate Faculty
C. W. Morden, PhD (Chair)—molecular systematics and evolution of Hawaiian plants
L. Arita-Tsutsuki, PhD—behavioral ecology of insects
K. E. Barton, PhD—evolutionary ecology
B. Bowen, PhD—phylogeography, evolution and conservation, genetics of marine vertebrates
R. L. Cann, PhD—conservation genetics and molecular evolution
K. S. Cole, PhD—evolution of sexual patterns, behavioral ecology
R. H. Cowie, PhD—evolutionary biology and conservation of land and freshwater snails
C. C. Daehler, PhD—invasive plants, plant-insect interactions
M. J. deMaintenon, PhD—evolution of gastropod organogenetic patterns
D. Drake, PhD—plant ecology, conservation biology, plant-animal interactions
D. C. Duffy, PhD—conservation biology (basic and applied)
L. A. Freed, PhD—evolutionary ecology, behavioral ecology and conservation biology
M. Hixon, PhD—marine ecology and conservation biology
B. S. Holland, PhD—molecular ecology, systematics and conservation genetics
T. Idol, PhD—forest soils and nutrient cycling
K. Y. Kaneshiro, PhD—sexual selection and biology of small populations
S. C. Keeley, PhD—plant molecular systematics and evolution
C. A. Lepczyk, PhD—wildlife ecology, landscape ecology, human dimensions of natural resources
C. M. Litton, PhD—ecosystem ecology and biogeochemistry of forested systems
W. J. Mautz, PhD—environmental physiology, environmental toxicology, ecological energetics, respiration physiology, and herpetology
M. D. Merlin, PhD—biogeography, ethnobotany, Pacific natural history
R. Ostertag, PhD—community structure and nutrient dynamics of tropical forests
D. K. Price, PhD—evolutionary genetics of behaviors
D. Rubinoff, PhD—insect systematics, conservation biology, and the evolution of ecological traits
A. R. Sherwood, PhD—evolution, systematics and population genetics of Hawaiian algae
C. M. Smith, PhD—physiological ecology of marine macrophytes, marine ecology
A. D. Taylor, PhD—population and community ecology and environmental statistics
A. Teramura, PhD—environmental stress physiology, global climate change, ecosystem analysis and biodiversity
R. Thomson, PhD—evolutionary biology, phylogenetics, and conservation
T. Ticktin, PhD—ethnoecology and conservation biology
R. Toonen, PhD—population biology and larval ecology of marine invertebrates
T. Tricas, PhD—behavior and sensory biology of sharks, rays and reef fishes

Affiliate Graduate Faculty
A. Allison, PhD—systematics and population biology
C. Birkeland, PhD—coral reef ecology and management, marine community ecology
E. Campbell, PhD—invasive species
J. E. Canfield, PhD—conservation biology, plant ecology
D. Carlon, PhD—population regulation, life-history evolution and speciation
S. Conant, PhD—conservation biology, life history and ecology of Hawaiian birds
N. L. Evenhuis, PhD—systematics and evolution of Diptera
D. Foote, PhD—ecosystem ecology
A. M. Friedlander, PhD—nearshore fisheries
F. G. Howarth, PhD—evolutionary biology of cave ecosystems and insect conservation
R. A. Kinzie, PhD—aquatic ecology, coral reefs and tropical streams
J. E. Maragos, PhD—human impact on marine ecosystems and coral reefs
D. Ragone, PhD—Pacific Island ethnobotany, especially conservation and use of traditional crops, focusing on breadfruit

The Academic Program

The objectives of the interdisciplinary graduate specialization in ecology, evolution, and conservation biology (EECB) are to:

- Use the unique opportunities that Hawai‘i offers to integrate tropical population biology and natural history studies with modern laboratory techniques;
- Provide the interdisciplinary, conceptual, and technical training that will allow our graduates to participate in academic and research programs in ecology, evolution, and conservation biology; and
- Foster scholarly training in research programs involving expertise in ecology, evolution, and conservation biology.

Modern theories of ecology, evolution, and conservation biology share a core of concepts and techniques that span classical academic disciplines. This common core, coupled with the emergence of powerful new technologies, invites cross-disciplinary approaches that generate many of today’s most exciting scientific advances.

The EECB program provides opportunities for students at UH Mānoa to expand their knowledge and gain experience in this integrative discipline. Our interdisciplinary graduate program brings together faculty members from graduate programs in the departments of Anthropology, Botany, Cell and Molecular Biology, Geography, Microbiology, Natural Resources and Environmental Management, Oceanography, Plant and Environmental Protection Sciences, Tropical Plant and Soil Sciences, and Zoology—with all their skills and technologies—to provide the training students need to contribute effectively to this research area.

EECB is implemented as a “specialization” within existing graduate programs of the departments whose faculty participate in this program. This means that the primary duties and responsibilities of each EECB student are to satisfy the requirements of their own home academic department. The EECB specialization serves to allow students to expand beyond the traditional departmental boundaries in terms of formulating research questions, choosing thesis/dissertation committee members and taking academic courses. EECB graduate students can be enrolled in either the doctor of philosophy or master of science degree in their home department.

Students accepted to the EECB graduate specialization must already have been accepted into the graduate program of
the various departments participating in the EECB program. Course work in statistics, organic chemistry, biochemistry, genetics, evolution, and ecology are considered most important for preparing students for graduate studies.

Details on the EECB program and application forms can be found at the EECB website www.hawaii.edu/eecb/.

Admission Procedures and Policy

Only students that have been accepted and are currently enrolled in a graduate program in one of the cooperating academic departments at UH Mânoa can be admitted. New students applying to UH Mânoa will be considered

All applicants must submit (by email directly to the EECB Chair):

- Letter expressing your interest in EECB (up to 3 pages), including, at a minimum
  - information on past academic experience
  - goals for graduate study in general and graduate study in EECB in particular
  - what you feel you can contribute to EECB
  - what you expect to gain by participation in EECB
- Letter of support from your EECB faculty sponsor

Students enrolled at UH Mânoa may be admitted to EECB in either the fall or spring semester. Application deadlines are February 1 and October 15. Successful applicants are admitted the following semester.

Your original UH Mânoa application may be obtained directly by the EECB office from Graduate Education and does not need to be submitted with your application to EECB.

Admission Criteria

Details can be found on the EECB website: www.hawaii.edu/eecb/.

Course Requirements for Specialization in Ecology, Evolution and Conservation Biology

Course requirements for ALL EECB graduate students:

- Complete all degree requirements of the home academic department
- Participate in EECB activities, particularly the Evoluncheon seminar series
- One course in ecology at the 600 or 700 level (at least 2 credits with an A or B grade)
- One course in evolution at the 600 or 700 level (at least 2 credits with an A or B grade)
- One course in conservation biology at the 600 or 700 level (at least 2 credits with an A or B grade)

Acceptable graduate (600-700 level) courses currently being offered are listed below. Because some offerings change from semester to semester, consult the EECB webpage for an updated list.

In addition to course requirements for the specialization in EECB, each academic department has its own course requirements. Courses from the EECB course list that are taken to fulfill departmental requirements can also be used to fulfill EECB requirements, however, a single course can only satisfy one of the three EECB requirements.

Course Offerings

(Updated October 2013)

New courses or one-time offerings not listed here but approved by the EECB curriculum committee may also count towards the ecology, evolution, or conservation biology requirement. Please check the EECB website for updates and consult with the graduate education committee for exceptions.

Ecology

- ANTH 606 Anthropology of Infectious Disease (3)
- BOT 644 Ethnoecological Methods (3)
- BOT 651 Invasion Biology (3)
- BOT/ZOOL 652 Population Biology (3)
- BOT 676 Environmental Physiology Seminar (2)
- IS 650 Principles of Applied Evolutionary Ecology (3)
- MICR 680 Advances in Microbial Ecology (3)
- NREM 680 Ecosystem Ecology (3)
- NREM 682 Restoration Ecology (3)
- OCN 626 Marine Microplankton Ecology
- OCN 627 Ecology of Pelagic Marine Animals (3)
- OCN 628 Benthic Biological Oceanography (4)
- OCN 629 Molecular Methods in Marine Ecology (2)
- PEPS 671 Insect Ecology (3)
- ZOOL 606 Principles of Animal Behavior (2)
- ZOOL 606L Principles of Animal Behavior Lab (1)
- ZOOL 620 Marine Ecology (3)
- ZOOL 623 Quantitative Field Ecology (3)
- ZOOL 652 Population Biology (3)

Evolution

- ANTH 604 Physical Anthropology (3)
- BIOL 603 Molecular Ecology (3)
- BOT 661 Hawaiian Vascular Plants (3)
- BOT 669 Molecular Phylogenetics and Evolution (3)
- CMB 625 Advanced Topics in Genetics (2)
- CMB 650 Population Genetics (3)
- MICR 671 Bacterial Genetics (3)
- PEPS 662 Systematics and Phylogenetics (3)
- PEPS 691 Biogeography Seminar (2)
- TPSS 615 Quantitative Genetics (3)
- ZOOL 606 Principles of Animal Behavior (2)
- ZOOL 606L Principles of Animal Behavior Lab (1)

Conservation Biology

- ANTH 620H Ecology (3)
- BOT 651 Invasion Biology (3)
- BOT/ZOOL 690 Conservation Biology (3)
- OCN 621 Biological Oceanography (3)
- PEPS 675 Biological Control of Pests (3)
- TCBES 600 (UH Hilo) Conservation Biology and Environmental Science (3)

Content Varies (but may be count towards a specific area, depending the topic)

- ANTH 620 Theory in Social and Cultural Anthropology (3)
- BOT 612 Advanced Botanical Problems (V)
- BOT 620 Perspectives in Modern Botany (2)
- BOT 654 Advances in Plant Ecology (2)
- BOT 750 Topics in Conservation Biology (V)
- GEOG 750 Research Seminar: Biogeography (3)
- GEOG 752 Research Seminar: Resource Management (3)
- GEOG 758 Research Seminar: Cultural Geography (3)
- NREM 691 Advanced Topics in NREM (3)
- PEPS 691 Special Topics (V)
- ZOOL 714 Topics in Animal Behavior (V)
- ZOOL 719 Topics in Systematics and Evolution (V)
- ZOOL 739 Topics in Ecology (V)
- ZOOL 750 Topics in Conservation Biology (V)
Neurosciences Graduate Specialization

Graduate Faculty
R. Nichols, PhD (Chair)—Neuroscience specialization
M. Berry, PhD—cell and molecular biology
D. C. Blanchard, PhD—cell and molecular biology
T. Blank, PhD—cell and molecular biology
L. Chang, MD—medicine
A. Dunn, PhD—Bekesy Laboratory of Neurobiology
T. Ernst, PhD—medicine
A. Fleig, PhD—cell and molecular biology
M. Gerschenson, PhD—medicine
D. Hartline, PhD—Bekesy Laboratory of Neurobiology
V. Nerurkar, PhD—tropical medicine and medical microbiology
H. Petrovitch, MD—geriatric medicine
G. Webster Ross, MD—medicine and geriatric medicine
C. Shikuma, MD—medicine
B. Shiramizu, MD—medicine/pediatrics
A. Stenger, PhD—medicine
L. Takahashi, PhD—psychology
L. White, MD, PhD—pediatrics

Neuroscience
The purpose of this specialization is to allow graduate students pursuing masters and doctoral degrees in various disciplines (e.g., medicine, psychology, engineering, computer science, molecular bioscience, etc.) to formally specialize in neuroscience. This is accomplished by taking a minimum of 4 courses plus participate in a “journal club” focusing on neuroscience as approved by the Graduate Chair.

Courses
- CMB 606 Introduction to Neurosciences (4)
- CMB 621 Cell Molecular Biology I (4)
- CMB 622 Cell Molecular Biology II (4)
- CMB 626 Ethics in Biomedical Research (2)
- CMB 705 Special Topics in Neurosciences (V)
- CMB/PHRM 640 Neuropharmacology (2)
- PSY 622 Animal Learning (3)
- PSY 626 Cognitive Psychology (3)
- PSY 631 Comparative Psychology (3)
- PSY 642 Cognitive Development (3)
- PSY 719 Research in Psychometrics (3)
- TRMD 607 Neurovirology (1)
- ZOOL 642 Cellular Neurophysiology (3)
- ZOOLL 712 Topics in Nerve/Muscle Physiology (V)

Interdisciplinary Studies

Degree Offered: BA in interdisciplinary studies. See the “Undergraduate Education” section for more information.

International Cultural Studies

UHM/EWC International Cultural Studies Graduate Certificate Program
Burns Hall Rm 2069
1601 East-West Road
Honolulu, HI 96822
Tel: 808-944-7593
Fax: 808-944-7070
Email: culture@hawaiiedu
Web: manoa.hawaii.edu/internationalculture/

Faculty
W. Dissanayake, PhD (Director)—media studies
C. Andrade, PhD—Hawaiian studies
A. Arno, PhD—anthropology
C. Bacchilega, PhD—English
T. Bigalke, PhD—EWC education
E. Buck, PhD—EWC
G. Chan, PhD—art and art history
H. Chapman, PhD—geography
M. Das Gupta, PhD—ethnic studies
K. Ferguson, PhD—political science and women’s studies
C. Franklin, PhD—English
C. Fujikane, PhD—English
V. Gonzalez, PhD—American studies
T. Gonzalves PhD—American studies
N. Goodyear-Ka’opu’a, PhD—political science
D. Grace, PhD—education
J. Hamilton, PhD—art and art history
D. Hanlon, PhD—history
M. Helbling, PhD—American studies
J. Henry, PhD—English
V. Hereniko, PhD—Pacific Island studies
P. Ho, PhD—ethnic studies
P. Hoffenberg, PhD—history
R. Hsu, PhD—English
K. Kane, PhD—political science
J. Kaomea, PhD—curriculum studies
N. Koikari, PhD—women’s studies
K. Kosasa, PhD—American studies
F. Lau, PhD—music
J. Logan, PhD—languages and literatures of Europe and the Americas
L. Lyons, PhD—English
P. Lyons, PhD—English
R. Mabanglo, PhD—Philippine studies
R. Nettell, PhD—English
J. Okamura, PhD—ethnic studies
J. Osorio, PhD—Hawaiian studies
K. Pauka, PhD—theater
R. Parkinson, PhD—American studies
R. Rath, PhD—history
S. Reiss PhD—history
J. Rieder, PhD—English
A. Robillard, PhD—sociology
S. Shankar, PhD—English
M. Shapiro, PhD—political science
M. Sharma, PhD—Asian studies
N. Sharma, PhD—ethnic studies and sociology
N. Silva, PhD—political science
C. Sinavaiana, PhD—English
N. Soguk, PhD—political science
R. Sullivan, PhD—English
T. Tengan, PhD—ethnic studies and anthropology
R. Trimillos, PhD—Asian studies
M. Wessendorf, PhD—theatre and dance
T. Wesley-Smith, PhD—Pacific Island studies
Certificate Offered: Graduate Certificate in International Cultural Studies

The Academic Program

The Graduate Certificate in International Cultural Studies offers an interdisciplinary course of study that enhances existing degrees in Arts and Sciences, area studies, and the professional schools.

Given that the language of culture is increasingly heard in debates about issues as diverse as nationalism, human rights, immigration, trade, the environment, education, media, and the arts, the certificate program develops tools for a more informed and critical understanding of the role of culture in public debates and policy.

Hawai‘i’s location at the intersection of local, U.S., and Asian spheres of influence provides an important vantage point from which to take up the social and cultural transformations taking place in today’s era of economic globalization and restructuring. Issues of cultural identity and politics are sharply drawn in the distinctive mix of indigenous, local and international communities in Hawai‘i today. Program courses and activities support a variety of approaches to analyzing and understanding the significance of culture, and of cultural difference, as global flows of people, culture, and capital increase the heterogeneity and flux of everyday life throughout the world.

The certificate program brings together faculty whose research and teaching focus on the politics and production of culture in the context of local, national, and international relations. Faculty research methods and styles emphasize the interpretive approaches of the humanities and social sciences.

Certificate Requirements

The certificate program combines course work with directed research and, where possible, community involvement.

- A core of three courses (7 credits), including:
  - CUL 609 Faculty Seminar Series
  - CUL 610 International Cultural Studies: History and Theory
  - CUL 750 International Cultural Studies: Research Project. The Capstone Experience is an individual research project supervised by a participating faculty member.
- Three electives (9 credits), including two taken outside the student’s department and no more than one undergraduate course.

Marine Biology

Marine Biology Graduate Program
2525 Correa Road, HIG 132
Honolulu, HI 96822
Tel: (808) 956-5651
Email: mbiograd@hawaii.edu
Web: www.hawaii.edu/mbiograd

Graduate Faculty

S. Karl, PhD (Chair)—HIMB
T. C. Tricas, PhD (Chair)—biology
G. Aeby, PhD—HIMB
R. Alegado, PhD—oceanography
H. Ako, PhD—MBBE/CTAHR
W. W. L. Au, PhD—HIMB
J. H. Bailey-Brock, PhD—biology
J. Beets, PhD—marine science/UH Hilo
R. Bidigare, PhD—HIMB
P. Bienfang, PhD—oceanography
B. Bowen, PhD—HIMB
S. Callahan, PhD—microbiology
M. Church, PhD—oceanography
K. Cole, PhD—biology
H. G. de Couer, PhD—biology
S. Donachie, PhD—microbiology
M. Donahue, PhD—HIMB
J. Drazen, PhD—oceanography
E. Franklin, PhD—HIMB
R. Gates, PhD—HIMB
E. Goetze, PhD—oceanography
G. Grau, PhD—biology
M. Hadfield, PhD—biology/PBRC
M. Hixon, PhD—biology
K. Holland, PhD—HIMB
C. Hunter, PhD—biology
P. Jokiel, PhD—HIMB/biology
D. Karl, PhD—oceanography
J. Lemus, PhD—HIMB
P. Lenz, PhD—Bekesey Lab/PBRC
J. Leong, PhD—HIMB
P. Marko, PhD—biology
M. McManus, PhD—oceanography
A. Moran, PhD—biology
P. E. Nachtigall, PhD—HIMB
C. Nelson, PhD—oceanography
B. Popp, PhD—geology and geophysics
M. Rappe, PhD—HIMB
R. Richmond, PhD—Kewalo Marine Lab, PBRC
T. B. Ron, PhD—HNFAS/CTAHR
K. Selph, PhD—oceanography
A. Sherwood, PhD—botany
C. Smith, PhD—botany
C. Smith, PhD—oceanography
G. Steward, PhD—oceanography
M. Takabayashi, PhD—marine science/UH Hilo
F. I. Thomas, PhD—HIMB
R. J. Toonen, PhD—HIMB
L. Watling, PhD—biology
K. Weng, PhD—oceanography

Degrees Offered: MS in marine biology, PhD in marine biology

The Academic Program

Marine biological studies at UH Mānoa have a long history of excellent research and graduate training in the internationally recognized graduate programs in oceanography, zoology,
botany, and microbiology. The School of Ocean and Earth Science and Technology and the College of Natural Sciences together sponsor a new graduate program that offers PhD and MS degrees in marine biology. This program takes advantage of the 44 regular faculty at the university whose research interests span the study of marine organisms, ecosystems, biogeochemical processes, reefs, oceanic fisheries, and human/marine interactions. It also offers research and internship opportunities with partners at state and federal agencies such as NOAA’s Pacific Islands Fisheries Science Center, the Hawai’i Department of Land and Natural Resources, and the Department of Business, Economic Development, and Tourism.

The faculty and students in this program have access to one of the largest coral reef habitats in the U.S. including the Pahānaumokuākea Marine National Monument, the main Hawaiian Islands, and the U.S.-Affiliated Pacific Islands. The unique location of the Hawaiian Archipelago in the central North Pacific Ocean makes it one of the most remote locations in the world allowing the processes that govern the marine environment to be studied with minimal anthropogenic influence. The program emphasizes scientific training in marine biology as a high demand occupation for the future.

The goal of the program is to produce scientists who are experts in their research areas with a broad-based understanding of the biology, ecology, evolution, and life processes of marine organisms. This program also addresses the growing need, locally and globally, for technically trained scientists, managers, and policy makers who are needed to understand the many processes that govern tropical marine ecosystems. Sound management of marine resources is becoming critical as these resources come under mounting pressure for exploitation from human populations and increasing stress from global climate change.

Admissions Requirements
Requirements in addition to those set by Graduate Education are:
- A strong undergraduate or MS training in biological oceanography, environmental science, marine science, marine biology, zoology microbiology, botany, biology, or other life sciences
- A minimum cumulative GPA of 3.2
- A GRE General Test
- A strong undergraduate background in math, chemistry and physics is highly recommended

Application Requirements
Please see www.hawaii.edu/marine_biology/graduate/admissions.html for additional program application requirements.

Program Requirements
The student will either be admitted to the MS or PhD program, then advance to a track upon completion of the first year of core courses. Students who fail to pass the core courses will be dismissed from the program.

Master’s Degree
Only a thesis (Plan A) program is available. In addition to the thesis, a minimum of 30 credits is required, including at least 18 credits of coursework and between 6 to 12 credits of Research (699) or Thesis (700) work and completion of the core courses with a grade of B or above.

Doctoral Degree
Applicants can be admitted with or without having completed a master’s degree. In addition to the Graduate Education’s requirements for doctoral candidates, students in the PhD track will need to complete the core courses with a grade of B or above, and complete additional relevant coursework as indicated by the dissertation committee. Students entering without a MS degree will be required to take a minimum of 30 graduate course credits, including at least 18 credits of formal coursework and between 6 to 12 credits of Research (699) or Dissertation (800). All PhD candidates will be required to demonstrate teaching experience (e.g. Teaching Assistantship) during at least one semester of graduate study.

Course Requirements
- MBIO 601* Marine Biology-Environments and Organisms (4)
- MBIO 602* Marine Biology-Processes and Impacts (4)
- One statistics or Biometry course
*Students must pass with a B or better.

Please check the program’s website for the most up to date requirements, course offerings, and admission information at www.hawaii.edu/mbiograd.

Peace Studies
Degrees and Certificates Offered: Undergraduate Certificate in Peace Studies, BA in interdisciplinary studies (emphasis on peace studies). See the “Colleges of Arts and Sciences” section for more information.
Resource Management

Saunders Hall 107
2424 Maile Way
Honolulu, HI 96822
Tel: (808) 956-7381

Certificate Offered: Graduate Resource Management Certificate

The Academic Program

The Graduate Resource Management Certificate is a cooperative program primarily involving the College of Social Sciences, Department of Urban and Regional Planning (anthropology, economics, geography), College of Tropical Agriculture and Human Resources (natural resources and environmental management), and East-West Center (Program on Environment, Program on Resources: Energy and Minerals). Because of its diverse topical components, multidisciplinary faculty, and practical application throughout Asia and the Pacific, the program is ideal for students who are pursuing graduate studies in traditional disciplines and also seeking expertise in environmental resource management.

This program provides students with specialized training in an area that augments their primary field and develops their pragmatic problem-solving and decision-making skills through analysis of real-world problems. Any student who has previously been admitted as a classified graduate student at UH Mānoa is eligible to apply for admission to this certificate program. Interested applicants should contact their advisor or any representative of the program in the collaborating departments and institutions.

To earn this certificate, students are expected to complete 15 credit hours, at least 9 of which are at the graduate level. For more information, contact the Department of Urban and Regional Planning.
School of Law

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in legal and related fields. The school also offers an LL.M. for

dents for the bar examination, admission to the bar, and careers

as the first professional degree in law. A JD degree prepares stu

gram culminating in the Juris Doctor (JD) degree, also known

h numbers at the attorney general, public defender, prosecuting

cil. In addition, graduates of the school are found in significant

positions, including governor of Hawai'i; lieutenant governor; presi
dent of a Hawai'i university; a federal magistrate; Hawai'i
Supreme Court, intermediate court of appeals, circuit, district, family, and per diem court judges; partners in major law firms; and members of the state Legislature and Honolulu City Coun
cil. In addition, graduates of the school are found in significant numbers at the attorney general, public defender, prosecuting attorney offices, private law firms, and non-profit organiza
tions.

The law school offers a three-year, post-baccalaureate pro
gram culminating in the Juris Doctor (JD) degree, also known as the first professional degree in law. A JD degree prepares stu
dents for the bar examination, admission to the bar, and careers in legal and related fields. The school also offers an LL.M. for international students.

Student Body

Many of the students (over 300) in the law school either are from Hawai'i or have other ties to the state or region. The school also welcomes students from the continental U.S., Asia, and the Pacific. Many students from other states express an interest in the school’s exceptional Pacific-Asian, Native Hawai
tian, or environmental law areas of emphasis. Each entering class (approximately 90 day students and 24 evening part-time students) typically reflects the ethnic diversity of Hawai'i and includes individuals of African American, Caucasian, Chinese, Filipino, Hawaiian, Japanese, Korean, and Pacific Island ancestry. Law students from the Asia Pacific region represent China, Guam, Japan, the Northern Mariana Islands, and American Samoa.

Approximately half of the students are female, and about 20 percent have completed other graduate degrees before enrolling in the law school.

Mission

The William S. Richardson School of Law is a collaborative, multicultural community preparing students for excellence in the practice of law and related careers that advance justice and the rule of law. We develop highly qualified, ethical professionals through excellence in teaching, scholarship, and public service. We embrace Hawai'i’s diversity and values and recognize a special responsibility to our state and the Pacific region. We lead in environmental law, Native Hawaiian law, and Pacific-Asian legal studies.

In carrying out this mission, the school’s graduates fill a demand for qualified attorneys who are sensitive to Hawai'i’s special needs and who will serve government and the public interest as well as private entities.

Students are encouraged to study law and legal institutions as integral parts of larger social, political, economic, and ecological systems. A number of law students concurrently seek other graduate degrees at UH Mānoa (such as the MBA at the Shidler College of Business) while undertaking the JD program.

Accreditations

The School of Law is fully approved by the American Bar Association (ABA); this accreditation enables Richardson gradu
tes to present a JD degree acceptable to the bar examiners in every state.

In 1989, the School of Law was admitted to full membership in the Association of American Law Schools (AALS).

Degrees Offered: juris doctor (JD), LL.M.
Advising/Careers

Students have access to academic, personal, and career counseling throughout law school. Academic counseling assists students in defining a program that will satisfy both personal interests and professional development.

Career counseling and information on job opportunities are provided to students for part-time, clerkship, and entry-level positions. About 40 Honolulu legal employers representing the private, public, and public-interest sectors participate in the on-campus interview program for law students. The law school also presents informational programs on career choices and alternatives and preparation for the job search.

Admission Requirements

Admission to the law school is a highly competitive process, which is based on an applicant’s academic achievement, aptitude for the study of law, and professional promise. Included among the specific factors evaluated are undergraduate grade point average, results of the Law School Admission Test (LSAT), academic work beyond the bachelor’s degree, academic rigor, writing ability, work experience, and volunteer and civic activities. The admission committee also takes into consideration the diversity of the class and unusual accomplishments or achievements. Residency in Hawai’i or special experience relevant to Hawai’i, the Asia Pacific region, or the law school’s specialty programs is also a significant admission criterion.

All applicants must have earned, by the entrance date, a baccalaureate degree from an accredited institution of higher learning in the U.S. or a foreign degree that is fully equivalent. Other requirements include the LSAT results, submission of transcripts, two letters of recommendation, and a completed law school application to the Law School Admissions Council (LSAC).

Application Deadlines

Applications for admission must be filed with the School of Law and must be submitted online. Check the law school website for up-to-date deadlines and application requirements. Incomplete applications are not considered. Applicants by the February priority deadline are usually notified of the admission decision in late March/early April for August entry.

Ulu Lehua Scholars Program

The initiative, now known as the Ulu Lehua Scholars Program, was established in 1974, the year after the school’s founding. The program selects students from legally underserved communities who have overcome adversity and demonstrated academic potential, leadership ability, commitment to social justice, and provides an opportunity for them to obtain a legal education. Ulu Lehua Scholars are fully matriculated into the JD Program and benefit from participation in a small, supportive learning community within the law school. In their first semester, Ulu Lehua Scholars, like all first-year (1L) law students, typically take Contracts, Civil Procedure, and Legal Practice. In place of a doctrinal 1L class (e.g., Torts or Criminal Law), which they take later in summer or in their second year, however, Ulu Lehua 1Ls take American Legal Systems. In addition to providing participants with structured and individualized instruction in legal reasoning, legal writing, law school study techniques, and other foundational legal skills, this course introduces Lehua students to critical legal theory and to other interdisciplinary perspectives on the relationship between law and social change. Ulu Lehua 1Ls and first-semester 2Ls also benefit from a structured program of tutoring in civil procedure, contracts, torts, real property, and constitutional law, led by upper division Lehua students who excelled in those courses. Ulu Lehua Scholars participate in the life of the law school, assuming leadership roles in such organizations as the Hawai’i Law Review, the ‘Ahahui o Hawai’i, the Asian-Pacific Law and Policy Journal, and the school’s award-winning moot court teams. Upon graduation, they become part of a large and influential Lehua alumni community, which includes many current judges, government leaders, social justice advocates, business administrators, and prominent attorneys. The Ulu Lehua Program extends the mission of its predecessor, the Pre-Admissions Program, founded to address the under-representation of disadvantaged communities.

The law school seeks candidates who will contribute to fulfilling the goals of the program, including: (1) addressing the legal and related needs of communities under-served by the legal profession in Hawai’i and the South Pacific; (2) representing communities that are presently under-represented in the law school and the Hawai’i Bar; (3) serving as role models for and mentors to others who are striving to overcome adversity and to reach their full potential as community leaders in Hawai’i and the South Pacific; and (4) bringing distinctive viewpoints and life experiences to the law school community, enriching the understanding of all who work and study here.

Degree Programs

Full-Time Program

The JD program is a 3-year, full-time course of study that begins in August with a 3-day orientation for new students. The JD degree is awarded upon completion of the satisfactory completion of 89 credit hours, including a selection of required courses. Completion of the program must be attained within seven years of the date of first registration. Full-time study is defined as registration for a minimum of 12 credit hours per semester plus regular and punctual attendance at scheduled class meetings. In addition, all law students must complete 60 hours of pro bono legal service in order to graduate. Visit the law school website for a detailed description of the degree requirements.
The first-year curriculum offers a conventional format of required substantive courses and intensive small group seminars in legal writing, research, and advocacy. The program for the second and third years is primarily elective and includes writing and research seminars, clinical workshops (some of which involve students in actual litigation under the Supreme Court’s Student Practice Rule), and a variety of courses in both traditional and new areas of law.

**Part-Time Program**

In the fall of 2008, the law school launched a part-time evening program, leading to a JD degree. Part-time students share the same competitive qualities of the full-time student body and graduation requirements are the same for both programs.

A student in the part-time program typically takes between 8-11 course credits over 3-4 evenings per week. The first 2 years of the part-time program are structured to allow students to complete most of the required courses. Making steady part-time progress, including summers, a student should be able to graduate in 4 to 5 years. There is no separate application for admission; applicants may indicate on their application a desire to be considered for the part-time program. Students admitted to the part-time program may continue to hold a full-time job.

**Advanced JD Program for Foreign Law Graduates**

The Advanced JD allows graduates of foreign law schools to complete their U.S. law studies and earn a JD degree in as little as 2 years. Under this program, qualified foreign law graduates may be admitted with advanced standing and awarded up to 29 credits for their previous law study. The decision on the number of credits to be granted will be made when the application is considered, and successful applicants will be notified at the time of admission how many credits they will receive for their foreign study.

Most students admitted to this program will complete the first-year required JD curriculum in their first year of study, then take their choice of elective courses in the second year of study. We work with all students to design an individual program suited to their background and interests, including participation in our programs in environmental, international, and business law.

Our 2-year JD program provides foreign law graduates with the best preparation for bar admission and for the successful practice of law. Advanced JD students are full members of our law school community. Students admitted to the accelerated JD program receive the same degree as other JD students and are eligible to take the bar examination in all U.S. jurisdictions, if they meet the other requirements for admission. For more information, email: kimurasp@hawaii.edu.

**LL.M. Program for International Students**

The LL.M. program is a 1-year course of study open to foreign legal professionals and law graduates who wish to gain a broader understanding of U.S. and international legal issues. The program begins in August; no students will be admitted mid-year. To graduate, students must complete at least 24 credit hours. Students are free to design their own course of study in consultation with the LL.M. director and may select a range of courses and seminars in areas such as business and commercial law, environmental law, and international and comparative law. Their program may (but need not) include first-year courses, which serve as an introduction to U.S. law and methods of study. With the consent of the instructor and the LL.M. director, LL.M. students also may enroll in courses offered by schools or departments outside the School of Law or participate in legal externships.

The Introduction to American Law course is required and restricted to LL.M. students, but LL.M. students will take all other classes with American JD students and will have ample opportunity to interact with them. The small size of the LL.M. program and of most School of Law classes promotes close interaction, and LL.M. students are encouraged to participate in all aspects of law school life.

For more information on the LL.M. program, visit our website at www.law.hawaii.edu or contact the LL.M. director at kimurasp@hawaii.edu.

**Additional Information**

For complete information on admission to the law school’s degree programs, contact the Office of Admissions at 2515 Dole Street, Honolulu, HI 96822 or online at www.law.hawaii.edu/admissions.

**Special Programs**

**The Center for Excellence in Native Hawaiian Law**

The Ka Huli ‘ao Center for Excellence in Native Hawaiian Law was established in 2005 at the law school through a grant under the Native Hawaiian Education Act. The center focuses on education, research, community outreach, and the preservation of invaluable Hawaiian historical and legal materials. It also offers new courses and supports law students as they pursue legal careers and leadership roles in the Native Hawaiian community. Center faculty have expertise in many aspects of Native Hawaiian rights, water law, Federal Indian law, and traditional and customary rights issues. With assistance from the Office of Hawaiian Affairs (OHA) and other generous community supporters, the center supports a Post-JD Research Fellowship program; awards Summer Fellowships allowing law students to work for Native Hawaiian organizations over the summer; awards student scholarships; and produces guides to Native Hawaiian legal resources. Students may receive a Certificate in Native Hawaiian Law by taking a series of courses in this specialization.

**Dual Degree and Graduate Certificate Programs**

Law students may integrate their law school work with other graduate work at UH Mānoa and receive both the JD degree and a graduate degree. The most popular dual degree programs have been the JD–MBA, the JD–master of urban and regional planning, and the JD–MA in Asian studies, although other dual degrees may be approved in consultation with the law school. Students may also pursue graduate certificate programs including ocean policy, resource management, or gerontology.

Students interested in dual degree or certificate programs must apply separately and be admitted to both the School of Law and the graduate or certificate program. Admission to one program does not guarantee admission to the other.

**Elder Law Program**

The UH Elder Law Program (UHELP) consists of two components: the Elder Law course and the Elder Law legal services project. The course is part of the law school’s educational program for training law students in the rapidly expanding field of elder law. The Elder Law legal services project provides direct delivery of limited civil legal services to older persons who are
socially and economically needy. It also provides education, training and advice to older persons, their families, and caregivers regarding the often complex legal aspects of caregiving. This direct legal services project is an important source of cases assigned to law students in the Elder Law Clinic.

Pro Bono Program

The Pro Bono Program at the William S. Richardson School of Law was one of the first law school pro bono programs and is thought to be the first student-initiated mandatory program in the nation. Students are required to locate and to provide 60 hours of law-related pro bono work under the supervision of an attorney, law school faculty or dean, or other supervisor, as approved by the law school Pro Bono Program director. The definition of law-related pro bono work includes law related work in the public interest with private practice and non-profit attorneys as well as international, federal, state, or local government agencies, courts, or legislatures. Law students are encouraged to provide a portion of their pro bono service for indigent clients. The pro bono requirement began with the entering class of August 1992 and successful completion of the pro bono service requirement is a condition for graduation.

Environmental Law Program

Recognizing the challenges that Hawai‘i faces in developing an environmentally sustainable economy, the law school has developed a vibrant and diverse Environmental Law Program (ELP). ELP offers a significant number of exciting and varied courses in environment law and related fields. The centerpiece of ELP is the Certificate in Environmental Law. The certificate program recognizes the increased student interest in this area, the expertise of a substantial number of our faculty, and growing opportunities in the field. Students interested in the certificate might also want to consider pursuing a Graduate Ocean Policy Certificate, which is offered at UH Mānoa and is part of our dual degree program. The ELP certificate is available only to UH law students. For more information on ELP, visit our website at www.law.hawaii.edu/elp.

Pacific-Asian Legal Studies

In keeping with Hawai‘i’s location, culture, and history, the law school has long featured a Pacific-Asian Legal Studies Program (PALS). We now offer an exceptional range of courses on Pacific and Asian law: students may take general Asian and comparative law courses or choose from specialized courses on China, Japan, Korea, and the Pacific. Our PALS faculty members are actively engaged in current Asian-Pacific issues and bring an unusual depth of expertise to their courses. They are recognized nationally and internationally for their scholarship, which they combine with extensive real-world experience. We also invite distinguished visitors from Asia and the Pacific to visit the law school and teach short-term specialized courses to supplement the regular curriculum. To recognize students who concentrate in Pacific-Asian law, we award a PALS certificate. We actively support student participation in externships in Asia and the Pacific as part of their law school program, which will also count toward certificate credit. Students may also benefit from some of the many exchange relationships the law school maintains with law schools throughout the Asia-Pacific. For more information, visit our website at www.law.hawaii.edu/pals.

Student Organizations

Law student organizations include:
‘Ahahui o Hawai‘i
Advocates for Public Interest Law
American Bar Association-Law Student Division
Asia Pacific Law & Policy Journal
Black Law Students Association
Client Counseling Team
Delta Theta Phi Legal Fraternity
Environmental Law Society
Environmental Moot Court Team
Ete Bowl
Federalist Society
Filipino Law Student Association
Hawai‘i Women Lawyers
Hispanic Moot Court Team
Intellectual Property Moot Court Team
International Negotiations Team
James S. Burns Aloha Chapter, American Inns of Court IV
La Alianza
LAMBDA Law Student Organization
Law and Business Organization
Lawyers Against Sexual Violence
Law for Youth Empowerment
Native American Law Students Association Hawai‘i Chapter
Native American Moot Court Team
Pacific-Asian Legal Studies Organization
Phi Delta Phi International Legal Fraternity, Richardson Inn
Philip C. Jessup Moot Court Team
Space Law Moot Court Team
Student Animal Legal Defense Fund
Student Bar Association
Students for Public Outreach & Civic Education
Students with Keiki
University of Hawai‘i Law Review
William S. Richardson Literary Journal: A Creative Outlet
Adminstration
John A. Burns School of Medicine
651 Iilalo Street
Honolulu, HI 96813
Tel: (808) 692-0899/0881
Fax: (808) 692-1247
Web: www.jabsom.hawaii.edu/
Dean: Jerris R. Hedges, MD, MS, MMM
Director of Admissions: Ivy Nip Asano, MD, MAT/Ed
Associate Dean of Clinical Affairs: Roy Magnusson, MD, MS
Associate Dean of Medical Education: Richard Kasuya, MD, MEd

General Information
The John A. Burns School of Medicine (JABSOM) strives to improve the quality, effectiveness, and equity of health care delivery in Hawai‘i and the Pacific region. The school provides opportunity for qualified residents of Hawai‘i and the Pacific Islands, including students from various underrepresented socio-economic and minority groups to qualify for an MD degree; provides MD graduates with competency to enter postgraduate programs; and provides residency training programs with emphasis on primary-care specialties.

The school also administers graduate research and professional programs that lead to MS and PhD degrees in the basics medical sciences and health-related fields; BA, MS, MPH, and DrPH degrees in Public Health; MS degree in Communications Sciences and Disorders; and, BS and a post-baccalaureate certificate in medical technology. Medical school faculty participate in undergraduate courses for majors in nursing, dental hygiene, biology, nutrition, and related fields. In addition, the medical school, in partnership with the Hawai‘i Medical Association and the Hawai‘i Consortium for Continuing Medical Education, sponsors continuing medical education for physicians in the state of Hawai‘i.

The school provides instruction for five major categories of students:
1. Candidates for the MD degree who are admitted directly by the school’s own admissions committee;
2. Candidates for MS degrees in biomedical sciences (with concentrations in cell and molecular biology, clinical research, physiology, and tropical medicine), public health, or in communication sciences and disorders apply through both the JABSOM admissions committee and the Graduate Education of UH Mānoa;
3. Candidates for the MPH or DrPH degree who apply through Graduate Education of UH Mānoa;
4. Candidates for PhD degrees in biomedical sciences with concentrations in clinical research, cell and molecular biology, epidemiology, physiology, and tropical medicine who apply through Graduate Education of UH Mānoa; and
5. Candidates for undergraduate degrees in medical technology and public health, who apply through the Admissions Office.

In addition, a post-baccalaureate certificate for medical technology clinical training is offered.

The Kaka‘ako Waterfront Complex
In 2005, the John A. Burns School of Medicine relocated to a new 9.898 acre site in Kaka‘ako, on the water’s edge, between Waikiki and downtown Honolulu. The school’s previous location, the 43-year-old Biomedical Sciences building on the Mānoa campus, continues to be occupied by the Office of Public Health Sciences, Department of Medical Technology, and by various research units. The school complex functions as an economic engine for the state that will create quality employ-

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ment opportunities, increase biomedical research activity, and be a stimulus for the biotechnical industry in Hawai‘i.

Target areas of research, which include innovations in problem-based learning medical education, are retrovirology/infectious diseases/AIDS, molecular biology/genetics/neuroscience, genomic medicine, proteomics, and bioinformatics/computational biology.

The campus includes an incubator center (leaseable research space) to provide biotechnology and bioscience companies a campus-like environment enabling collaboration with academic researchers. A major medical research center, with surrounding space for such companies, as well as Honolulu's technology infrastructure and ties to Asia and the Pacific, will make the city of Honolulu a prime environment for the growing technology and biomedical research industries.

The school is accredited by the Liaison Committee for Medical Education (LCME) of the Association of American Medical Colleges and the Residency and Fellowship Programs are accredited by the Accreditation Council on Graduate Medical Education (ACGME).

Additionally, all civilian postgraduate medical education programs in Hawai‘i hospitals are accredited as UH John A. Burns School of Medicine-sponsored residency programs by the ACGME. Approximately 250 physicians (employees of Hawai‘i Residency Programs, Inc.) within 10 training programs serve as house staff members in these hospitals under the direction of medical school faculty from eight clinical departments. Oversight is provided by the Designated Institutional Official (DIO). Continuing Medical Education (CME) programs are accredited by the Hawai‘i Consortium for Continuing Medical Education (HCCME), a liaison committee between the Hawai‘i Medical Association and JABSOM, while the public health degrees are accredited by the Council on Education for Public Health (CEPH), Medical Technology (MEDT) and Communication Sciences and Disorders (CSD) are accredited by National Accrediting Agency for Clinical Laboratory Sciences and American Speech-Language-Hearing Association respectively.

Affiliations

The school maintains affiliations with facilities for medical student and resident clinical training that include the following: Castle Medical Center, Hawai‘i State Hospital, Hilo Medical Center, Kalākaua Health Center, Kaiser Permanente Moanalua Medical Center & Clinic, Kapiolani Medical Center for Women and Children, Kapiolani Medical Center at Pali Momi, Kona Medical Center, Waimea Valley Health Center, Kua‘aui Health Systems, Leahi Hospital, Maui Memorial Medical Center, The Queen’s Medical Center, Queen Emma Clinics, Rehabilitation Hospital of the Pacific, Shriners Hospital for Children, Spark Matsunaga VA Medical Center, Straub Clinic and Hospital, Tripler Army Medical Center, Wahiawa General Hospital, and The Physician Center.

Degrees

Bachelor’s Degrees: BS in medical technology, BA in public health

Master’s Degrees: MS in biomedical sciences (cell and molecular biology, clinical research, physiology, and tropical medicine); MPH and MS in public health; MS in communication sciences and disorders

Professional Degree: MD

Doctoral Degrees: PhD in biomedical sciences (cell and molecular biology, clinical research, and tropical medicine); PhD in developmental and reproductive biology; PhD in epidemiology; DrPH in public health

Advising

Premedical advising is available through the Pre-Health/Pre-Law Advising Center, Sinclair Library 108.

Academic Policies

Undergraduate and graduate students in the School of Medicine must adhere to the academic policies of UH Mānoa. Medical students are exempted from certain UH Mānoa policies and instead must follow academic policies germane to the MD program. Copies of relevant policies are available in JABSOM’s Office of Student Affairs.

MD Program

The MD program follows a problem-based curriculum, the “MD Program,” which was implemented in fall 1989 and includes the following key features: knowledge is acquired in problem-based modules; self-directed learning is fostered in small group tutorials; students are involved actively in the learning process, not simply passive recipients of information; the small group leaders function as facilitators of learning; content experts function as resources to the learning process; laboratory exercises, demonstrations, the library and audiovisual-computer centers supplement faculty input; basic sciences are learned primarily in the context of solving clinical problems; students are trained to think critically and to evaluate new information and research data; and evaluation of students is based on competence in a variety of problem-solving exercises.

The learning activities in the first two years of the curriculum take place in the school’s state-of-the-art Medical Education Building and in community health sites. The advanced clinical instruction that constitutes the bulk of the second two years of instruction takes place in affiliated community hospitals and clinics.

Admission Requirements/Application Process

Candidates for MD training must complete a minimum of 90 college-level semester credit hours of which the following specific science coursework is required for entry into the MD curriculum.

- 8 semester credit hours of biology with lab
- 8 semester credit hours of general physics with lab
- 8 semester credit hours of general chemistry with lab
- 8 semester credit hours of organic chemistry with lab
- 3 semester credit hours of biochemistry (no lab required)
- 3 semester credit hours of cell and molecular biology (no lab required)

Each course should be acceptable for students majoring in the above science disciplines. Additional enrichment in the biological and social sciences is encouraged. Applicants must also be fully competent in reading, speaking, and writing the English language.

Applicants are required to apply through the American Medical Colleges Application Service (AMCAS). The service permits an applicant to file a single web-based application, which is forwarded to participating medical schools as designated on the AMCAS application. AMCAS will implement a criminal background check on applicants applying to medical
schools. The AMCAS application is available from June 1 at the AMCAS website: www.aamc.org. The deadline to transmit the application to AMCAS is November 1 for regular admission (EST) or August 1 (EST) for Early Decision.

Applicants must also take the nationally administered Medical College Admissions Test (MCAT), which deals with knowledge of the biological and biochemical foundations of living systems; chemical and physical foundations of biological systems; psychological, social, and biological foundations of behavior; and critical analysis and reasoning skills. The Medical College Admissions Test (MCAT) must be taken within three years of an applicant’s anticipated matriculation to medical school. The latest MCATs screened or re-screened in the admissions process is September of the year of application (May for Early Decision).

Applicants who achieve the required screening cut-off points will be requested to submit additional materials and invited for interviews. Seventy MD candidates are accepted to the entering first-year class.

Inquiries regarding admissions should be directed to the Office of Admissions, John A. Burns School of Medicine, 651 Ilalo Street, MEB 3rd floor, Honolulu, HI 96813 or via email medadmin@hawaii.edu. Further information may be obtained on the web at jabsom.hawaii.edu.

Honors and Awards

Alpha Omega Alpha is the honorary society for medical students. Delta Omega is the honorary society for public health students.

Graduate Medical Education Programs

Graduate medical education programs in Hawai`i hospitals are in family medicine, sports medicine, internal medicine, geriatric medicine, obstetrics and gynecology, orthopaedic surgery, pathology, pediatrics, neonatal-perinatal medicine, developmental-behavioral pediatrics, psychiatry (adult, child and adolescent, geriatric, addiction), general surgery, surgical critical care, cardiology, and transitional year. Also offered are a fellowship in maternal-fetal medicine accredited by the American Board of Obstetrics and Gynecology, and a fellowship in addiction medicine leading to certification by the American Board of Addiction Medicine. The UH John A. Burns School of Medicine acts as the institutional sponsor for these residency training programs. Approximately 250 physicians are involved in training, which lasts one to seven years. These physicians serve as members of the house staff in the affiliated hospitals while studying their chosen specialty.

The medical school also conducts a graduate medical education program at Chubu Hospital in Okinawa for graduates of Japanese medical schools.

Graduate Programs

Refer to the department/program sections of the Catalog for more information on each graduate program. Note: Information on the clinical research program is listed under the Department of Complementary and Alternative Medicine and information on the cell and molecular biology graduate program is located in the “Interdisciplinary Programs” section of the Catalog.

Graduate program inquiries should be directed to the appropriate program chair. General information is available on the web at jabsom.hawaii.edu/ed-programs/masters-phd/.

Biomedical Sciences

Cell and Molecular Biology
Mariana Gerschenson, PhD
Phone: (808) 692-1518
Email: gerschen@hawaii.edu
Marla Berry, PhD
Phone: (808) 692-1506
Email: mberry@hawaii.edu
Web: www.hawaii.edu/cmb

Clinical Research
Rosanne Harrigan, EdD
Phone: (808) 692-0909
Email: mscri@hawaii.edu
Web: jabsom.hawaii.edu/ed-programs/masters-phd/#clinRes/

Epidemiology
Eric L. Hurwitz, DC, PhD
Phone: (808) 956-7425
Email: eehurwitz@hawaii.edu
Web: manoa.hawaii.edu/publichealth/

Developmental and Reproductive Biology
Yusuke Marikawa, PhD
Phone: (808) 692-1411
Email: marikawa@hawaii.edu
Web: www3.jabsom.hawaii.edu/Grad_DRB/index.html

Tropical Medicine
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Phone: (808) 692-1607
Email: sandrac@hawaii.edu
Web: manoa.hawaii.edu/tropicalmedicine/

Public Health
Kathryn L. Braun, DrPH
Phone: (808) 956-8267
Email: pubhlinth@hawaii.edu
Web: manoa.hawaii.edu/publichealth

Communication Sciences and Disorders
Henry Lew, MD, PhD, CCC-A
Phone: (808)692-1582
Email: spauh@hawaii.edu
Web: manoa.hawaii.edu/csd/
Undergraduate Programs

For information on medical technology, refer to the respective section of the Catalog.

Special Programs

Hawai‘i/Pacific Basin Area Health Education Center (AHEC)

The Hawai‘i/Pacific Basin Area Health Education Center (AHEC) supports health professions training experiences in rural and under-served areas of Hawai‘i and the U.S.-Affiliated Pacific Islands (Guam, American Samoa, Commonwealth of the Northern Mariana Islands, Republic of the Marshall Islands, Republic of Palau, and Federated States of Micronesia). Training experiences can be preceptorships, clerkships, electives, cultural immersion experiences, or interprofessional training experiences such as the Rural Health Training Initiative in collaboration with the VA. AHEC supports continuity of rural training for students wishing to perform training experiences in a particular rural or under-served area during multiple years of their training. AHEC staff perform and support health careers recruitment programs across the state, support use of video teleconferencing for health education purposes, and hold the Hawai‘i Health Workforce Summit and Jobfair every September. Finally, AHEC is conducting a statewide physician workforce assessment and students can participate in studying aspects of the workforce, such as migration patterns and use of telehealth.

AHEC is funded by the U.S. Department of Health and Human Services, Health Resources and Services Administration. The federal mandate is to improve the diversity, distribution, and quality of the health professions workforce. The mission of Hawai‘i/Pacific Basin AHEC is: To improve the health of the under-served through education. Activities focus on five primary areas: 1) Health education and recruitment to health professions for students across the state from kindergarten through college; 2) Educating health professions students in rural and under-served areas, often in interdisciplinary teams; 3) Recruitment, retention, and continuing education of practicing health professionals in medically under-served areas; 4) Providing community health based and community driven health education in over a dozen community learning centers across the state; and, 5) Providing video connectivity for health education, communication, and other health care services to rural and under-served areas across the state. Contact Dr. Kelley Withy for more information at withy@hawaii.rr.com, (808) 692-1060.

Overseas Programs

The school plays an extensive training role at locations outside Hawai‘i and expects that its involvement in the Pacific and Asia regions will continue. In the scattered islands of Micronesia, the school has trained medical officers (MOs) and physician assistants to bring primary care to a widely dispersed population. The curricula were relevant to the clinical and community health needs of the Pacific Basin. Graduates of the MO program received a Diploma in Community Health, Medicine, and Surgery. Training of other health professionals in the Pacific Basin area continues. On Okinawa, the school conducts a residency training program for graduates of Japanese medical schools. This program is financed by the Okinawa prefectural government. The school conducts a medical student exchange program with affiliated medical schools and hospitals in Korea, Thailand, the Philippines, Japan, Indonesia, Taiwan, Australia, and New Zealand.

Anatomy, Biochemistry, and Physiology

John A. Burns School of Medicine
651 Ilalo Street, BSB 110
Honolulu, HI 96813
Tel: (808) 692-1446
Web: jabsom.hawaii.edu/departments/abp/

Faculty

*S. Lozanoff, PhD (Chair)—renal and craniofacial morphogenesis
*V. B. Alarcon, PhD—mammalian developmental biology
*R. Alssopp, PhD—telomerase biology
K. Cummins, MS—physiology
*B. Fogelgren, PhD—cell and molecular biology of kidney diseases
*K. S. K. Fong, PhD—neural tube and craniofacial genetics and development
S. Labrash, CFSP—plastination, willed body program, continuing education
*Y. Marikawa, PhD—mammalian embryogenesis, cell differentiation, and body pattern formation
*T. Matsui, MD, PhD—cardiovascular research
*D. Merritt, PhD—aging and exercise physiology
*S. Moisyadi, PhD—mammalian transgenesis
Z. Stoytcheva, PhD—transcriptional regulation of renal development
J. Urschitz, PhD—gene therapy, obesity, pregnancy
*M. Ward, PhD—sperm physiology and genetics, assisted reproduction technology
*W. S. Ward, PhD—DNA structure, embryogenesis, and sperm biology
*Y. Yamazaki, DVM, PhD—oocyte development, primordial germ cell biology

Cooperating Graduate Faculty

R. V. Cooney, PhD—role of nitrogen oxides in carcinogenesis

Adjunct/Clinical Faculty

H. Davis, PhD
R. Dunn, PhD
T. Nomura, MD, PhD
K. Nonaka, DDS, PhD
C. Stickley, PhD
S. Tunali, PhD, MD
C. F. T. Uyehara, PhD
J. Wu, PhD
S. Yang, MD

Degree Offered: MS in developmental and reproductive biology, PhD in developmental and reproductive biology

The Academic Program

The Department of Anatomy, Biochemistry, and Physiology supports the interdisciplinary nature of modern biomedical research and exposes both medical and graduate students to the type of research environment they will encounter in their professional career. The department was formed in acknowledgment of the MD program’s ongoing need for discipline-based expertise in the areas of anatomy, physiology, and reproductive biology, which provides a broad base of knowledge in biological structure and function from the molecular level to the body

*S Graduate Faculty
as a whole, as well as biochemistry, which involves the study of the chemistry and physics of living systems and is fundamental to the understanding of many of the disciplines of medical, biological, and agricultural sciences.

The department offers upper- and lower-level courses in biochemistry and physiology as preparatory coursework for prospective medical students as well as 500-level electives in human anatomy and physiology for medical students that supplement knowledge gained in the tutorials. The training of medical students and post-graduate training of physicians would not be possible without the department’s Willed Body Program.

Students seeking health-related careers in areas such as dentistry, medicine, nursing, nutrition, physical therapy, public health, and the social sciences need many of the department’s physiology courses. Formal programs of study leading to MS and PhD degrees in developmental and reproductive biology are also offered. These students may elect to conduct research at the molecular or cellular level, on organs such as the lungs, or on the whole animal or person. Through the interdisciplinary Cell and Molecular Biology Graduate Program, qualified graduate students have the opportunity to work with faculty from other JABSOM departments and programs within the university system as well.

The MS (Plan A) program in developmental and reproductive biology requires a combination of course work and original research, the latter forming the basis of the student’s thesis. The MS (Plan B) degree serves as training for teaching positions at the high school, community college, or four-year college level. It may also be a prelude to a medical or dental education. Candidates for the MS Plan B degree are required to prepare a written paper and give an oral presentation as well as fulfilling course requirements (total of 30 credits). The MS concentration in exercise physiology provides adequate preparation for a career in sports medicine and training and in health and fitness programs in hospitals and private businesses.

The PhD degree in developmental and reproductive biology prepares students for teaching careers in universities, community colleges, and high schools, as well as for research careers at universities, hospitals, government laboratories, and large pharmaceutical companies. Candidates must take a written qualifying examination, an oral comprehensive examination, and submit an acceptable outline of their proposed dissertation research. They must also submit and defend their dissertation. PhD graduates usually obtain postdoctoral positions elsewhere as further preparation for a career in teaching and research at the university level.

Applicants must submit three letters of recommendation together with either GRE or MCAT scores. All applicants are expected to have adequate backgrounds in biology, chemistry, mathematics, molecular biology, and physics. The course requirements for admitted students vary with their degree and specialization, but all candidates for the MS and PhD degrees must take a written qualifying examination.

The department’s anatomy and reproductive biology faculty are world-renowned for their research in the areas of fertilization, reproductive endocrinology, and neurobiology of sexual behavior. Department faculty established the Institute for Biogenesis Research and pioneered the successful “Honolulu Technique” cloning technology, which provides scientists with a new and valuable tool for researching the molecular processes involved in embryo formation, cell differentiation, aging, and disease. The biochemistry faculty offer laboratory and research experience either through formal courses or through participation in funded research programs in areas such as clinical biochemistry, bioenergetics, biochemistry of reproduction, and chemical carcinogenesis. Department faculty also have appointments in the Pacific Biosciences Research Center and the University of Hawai’i Cancer Center.

**Cell and Molecular Biology**

John A. Burns School of Medicine
BSB 222
651 Ilalo Street
Honolulu, HI 96813
Tel: (808) 692-1514
Fax: (808) 692-1968
Web: www.hawaii.edu/cmb

**Faculty**

*M. J. Berry, PhD (Chair)—selenoproteins, antioxidants and human diseases*

*F. P. Bellinger, PhD—selenoproteins in brain function*

*R. L. Cann, PhD—molecular and evolutionary genetics*

*M. Gerschenson, PhD—infectious diseases, HIV mitochondrial medicine*

*D. S. Haymer, PhD—molecular evolution and developmental genetics*

*P. Hoffmann, PhD—selenoproteins in asthma and inflammation*

*D. M. Jameson, PhD—fluorescence spectroscopy; biomolecular dynamics and interactions; ribosomal proteins*

*O. LeSaux, PhD—genetic disorders; dystrophic calcification*

*S. Moisyadi, PhD—mammalian transgenesis*

*R. A. Nichols, PhD—neuropharmacology, neuroscience and physiology*

*J. Panee, PhD—selenoproteins and natural products as antioxidants*

*M. D. Rayner, PhD—structure-function relationships in voltagegated ion channels*

*S. E. Seifried, PhD—macromolecular interactions, transcription factor recognition of specific DNA sequences, protein subunit assembly*

*A. Stokes, PhD—biochemistry and physiology of ion channel proteins*

*C. Todorovic, PhD—neurobiology*

**Adjunct Faculty**

A. Bachmann, PhD—cancer, pharmacology

T. A. Donlon, PhD—human genetics

A. Fleig, PhD—electrophysiology (patch-clamp); calcium signaling in muscle cells; regulation of calcium signaling; cellular neuroimmunology

K. Pellegrin, PhD—pharmacy, psychology, research training

R. Penner, PhD—electrophysiology (patch-clamp); intra- and intercellular signal transduction; regulation of calcium signaling; cellular neuroimmunology

J. Pezzuto, PhD—pharmacy, drug discovery, natural products

H. Turner, PhD—immunogenetics, cannabinoid receptors, cell signaling

**The Academic Program**

Faculty in the Department of Cell and Molecular Biology have ongoing research programs in areas such as genetics, cell biology, biochemistry, and neurophysiology. The department also provides instruction in the basic principles and concepts of genetics, biochemistry, and molecular biology to medical students, graduate students from various disciplines, and undergraduates.

The faculty also participate in the training of PhD and MS graduate students in the interdisciplinary Cell and Molecular Biology Graduate Program, qualified graduate students have the opportunity to work with faculty from other JABSOM departments and programs within the university system as well.

* Graduate Faculty
Biology Program. This program brings together faculty with expertise in biochemistry, cell biology, cell signaling, developmental biology, genetics, immunology/retrovirology, neurobiology/neurophysiology, plant molecular physiology, and reproduction function for collaborative teaching and research activities. Information on the Cell and Molecular Biology (CMB) Graduate Program can be found in the “Interdisciplinary Programs” section of this Catalog, on the CMB website, or interested applicants can contact:

Lyn Hamamura
John A. Burns School of Medicine
Cell and Molecular Biology Graduate Program
651 Ii'alo Street
Honolulu, HI 96813
Tel: (808) 692-1514
Email: lynh@hawaii.edu

Communication Sciences and Disorders

677 Ala Moana Blvd., Suite 625
Honolulu, HI 96813
Tel: (808) 692-1581
Fax: (808) 566-6292
Email: keithy@hawaii.edu
Web: manoa.hawaii.edu/csd

Faculty
*H. Lew, MD, PhD (Chair)—audiology
*A. Davis, PhD—speech-language pathology
*E. Hirohata, AuD—audiology
*A. Lower, MS—speech pathology

Affiliate Faculty
S. Ching, AuD—audiology
K. Maemori, MS—speech-language pathology
K. Prunsinski, MS—speech-language pathology
G. Wallace, PhD—speech-language pathology

Adjunct Graduate Faculty
C. Bell, MD, PhD—geriatric medicine
J. Hiu, MS—speech-language pathology
R. Ito, AuD—audiology
H. Kaniho, MS—speech-language pathology
P. Mashima, PhD—speech-language pathology
K. Muemori, MS—speech-language pathology
K. Mays, MS—speech-language pathology

Degrees Offered: MS in communication sciences and disorders

The Academic Program

The study of communication sciences and disorders focuses on the basic understanding in speech, language, swallowing, cognitive-communication, and hearing processes, as well as disorders in these areas. The Department of Communication Sciences and Disorders (CSD) prepares students to become a speech-language pathologist, a health-allied professional who evaluates and treats individuals with speech, language, cognitive-communication, and swallowing disorders across lifespan, from infants to the elderly. The practice of speech-language pathology (SLP) requires a minimum of a master’s degree in specialized area such as CSD and obtaining clinical certifica-

* Graduate Faculty
Complementary and Alternative Medicine

John A. Burns School of Medicine
651 Ilalo Street
Honolulu, HI 96813
Tel: (808) 692-0909

**Faculty**

- R. Harrigan, EdD (Chair)—women’s health, health disparities
- N. Apau, MD, MS—asthma
- A. Brown, PhD—nutrition
- M. Carbone, MD
- E. C. Christenson, MD
- E. Christenson, MD
- K. Cászar, PhD—ethnobotanicals, molecular biology
- J. Davis, PhD
- P. Deleon, PhD
- T. Hoffman, MD
- T. Huynh, MD
- H. Liu, MD
- G. Lohaugen, PhD
- M. Long, MD
- K. Lye, MD
- J. Panee, PhD
- M. Perez, PhD

B. Rodriguez, MD
T. Shintani, JD, MD, MPH—nutrition
J. Skranes, MD
R. Sloan, MD
K. Withy, MD—health services research, workforce development
S. Wu, PhD
I. Zunin, MD

**The Academic Program**

The State of Hawai‘i is an environment with the unique, rich blend of cultures and ethnicities and many healing traditions, some of ancient origins. Complementary and Alternative Medicine (CAAM) takes on increased significance in Hawai‘i because the diverse population of the state uses these treatment modalities frequently.

The department is committed to conducting both basic and applied research related to complementary and alternative therapies in Hawai‘i and the Pacific region, especially dietary supplements; educating the next generation of physicians and other healthcare personnel about the potential risks and benefits of complementary and alternative therapies; providing culturally competent care for people within the state of Hawai‘i; understanding the use of patterns of complementary care used by the Hawaiian population; facilitating the study of medicinal plants, including varieties unique to Hawai‘i and/or the Pacific Rim; and promoting health service research to assess the clinical and financial benefits—or lack thereof—of CAAM therapies for the Hawaiian population.

Models of integrative care teams strategically placed in Hawai‘i’s major hospitals, large medical groups, and/or health maintenance organizations together with the development of relevant educational materials for clinicians, researchers, educators, and consumers of health care is another major goal. Collaborations with other UH Mānoa programs such as Chinese studies and the School of Hawaiian Knowledge faculties will energize progress towards this goal to reduce and eliminate health disparities in Hawai‘i and improve the health of Hawai‘i’s people.

**Graduate Study**

A graduate program leading to the MS in clinical and translational science is offered, with emphasis on development, of multidisciplinary research teams composed of clinicians, researchers, educators, and community members. Clinical and translational science is the study of methods used to investigate clinical problems in medicine. Available in Plan A (thesis), the program requires a combination of course work and original research, the latter forming the basis of the master’s thesis.

Students enrolled in the program acquire skills in biostatistics and epidemiology, and master the scientific principles that underlie clinical research methods. They develop the ability to identify and resolve ethical issues in clinical research, to ensure the safeguarding of human subjects, and to understand the workings of Institutional Review Boards and other relevant requirements. In addition, students increase their capacity in obtaining research funding from agencies such as the National Institute of Health.

In addition to offering knowledge and skills needed for careers in clinical research, the program functions as a supportive mechanism for newly trained investigators, actively facilitating career development and encouraging research collaborations, particularly those related to research on health disparities. By
providing high quality training to doctoral and post-doctoral candidates, the program aims to increase the mass of clinical researchers at UH Mānoa, including minority investigators. Targeting junior faculty, fellows, residents, and doctoral candidates from biomedical sciences, nursing, social work, psychology and public health, the interdisciplinary nature of the program broadens students’ perspectives and increases opportunities for innovative, cross-disciplinary collaborations in clinical research.

Graduates of the program pursue teaching careers in academia; as well as research careers in academia, government laboratories, and pharmaceutical companies. In addition, some graduates find employment in hospitals or private businesses.

The department also has a doctoral program leading to a PhD in biomedical sciences with a concentration in clinical research.

Family Medicine and Community Health

The Physician Center at Mililani
95-390 Kuahelani Avenue
Mililani, HI 96789
Tel: (808) 627-3245
Fax: (808) 623-7872
Web: www2.jabsom.hawaii.edu/FamilyMedicine/

Faculty
A. L. Hixon, MD (Chair)—family medicine and community health
L. Aggarwal, MD—family medicine and community health
L. E. Buenoconsejo-Lum, MD—family medicine and community health
S. Hankins, MPH, MD—family medicine and community health
W. M. Izumigawa, MBA—Director of business affairs
G. Maskarinec, PhD—medical anthropology
A. W. Nichols, MD—family medicine, sports medicine
J. S. Omori, MD—family medicine and community health
N. A. Palafox, MD, MPH—family medicine and community health
S. Riklon, MD—family medicine and community health
M. Tubianosa, MD, MSPH—family medicine and community health
C. W. Tseng, MD, MPH—family medicine and community health
S. Yamada, MD, MPH—family medicine and community health

Degree Offered: MD

The Academic Program

The Department of Family Medicine and Community Health (DFMCH) is focused on community-based collaborations to improve patient outcomes across the lifecycle through direct clinical care, primary care workforce development, and research. The department has a particular focus on caring for cross-cultural, rural, and under-served communities in Hawai‘i and throughout the Pacific. The department, in conjunction with our partner hospitals, sponsors a three-year ACGME accredited Family Medicine Residency Program and a one-year ACGME accredited Sports Medicine Fellowship.

Teaching goals for students, residents, and fellows are based on a philosophy of contextualized care that understands health and illness in relation to the individual, family, and community, and responds not only to episodes of illness, but also attempts to understand and address the broader social determinants of health. Medical student instruction focuses on basic conceptual tools and clinical strategies in real world settings through community based preceptorships.

The Sports Medicine Fellowship Program is affiliated with the DFMCH Residency Program and provides clinical, research, and educational exposure to athletes, patterns of athletic injuries, and rehabilitation. The program serves as a resource for the dissemination of sports medicine and exercise science-related information for UH Mānoa and the state of Hawai‘i.

Geriatric Medicine

John A. Burns School of Medicine
347 N. Kuakini Street HPM-9
Honolulu, HI 96817
Tel: (808) 523-8461
Fax: (808) 528-1897

Faculty
K. H. Masaki, MD (Chair)—geriatric medicine
S. Ahsan, MD—geriatric medicine
C. Bell, MD, PhD—geriatric medicine
S. Cholitkul, MD—geriatric medicine
S. Cholitkul, MD—geriatric medicine
R. Fernandes, MD, MPH—geriatric medicine
D. Fischberg, MD—pain and palliative medicine
M. Inaba, MD, PhD—geriatric medicine
K. Lubimir, MD—geriatric medicine
L. Okamoto, MD—geriatric medicine
O. Pishchalenko, MD—geriatric medicine
B. Rodriguez, MD, PhD—epidemiology
C. Takenaka, MD—geriatric medicine
B. Tamura, MD—geriatric medicine
A. Wen, MD—geriatric medicine
B. Willcox, MD—geriatric medicine

Degree Offered: MD

The Academic Program

Geriatric medicine is dedicated to the care of older people and to healthy aging throughout life, so that the frailties and disabilities common in older years can be prevented. To provide comprehensive care, geriatrics is often interdisciplinary, and clinical instruction takes place in a wide variety of settings, including outpatient, acute hospital, nursing home, retirement community, home care, rehabilitation, and palliative care settings. As an age-based specialty like pediatric medicine, geriatric medicine includes aspects of internal medicine, pharmacology, psychiatry, adult development, family medicine, neurology, urology, gynecology, rehabilitation, and palliative medicine.

The Department of Geriatric Medicine provides education for: medical students; residents in internal medicine, family medicine, psychiatry, and other specialties; fellows in Geriatric Medicine and Geriatric Psychiatry; practicing physicians; and allied health professionals and students in the field of aging. The fully accredited Geriatric Medicine Fellowship Program is for physicians who are graduates of either internal medicine or family medicine residency programs. The first year of fellowship training is designed to lead to eligibility for board certification in geriatric medicine. Additional years of fellowship are devoted to research, consultative medicine, medical education, and medical administration.
The Division of Palliative Medicine is located in the department, and many faculties have double board certifications in Geriatric Medicine and Palliative Medicine.

The Department of Geriatric Medicine is involved in an extensive array of funded research programs, thus providing training and experience in research for students at all levels.

Medical Technology
Biomedical Sciences C-206
1960 East-West Road
Honolulu, Hi 96822
Tel: (808) 956-8557
Web: www.hawaii.edu/medtech/Medtech.html

Faculty
D. Y. Teshima, MPH (Chair)—medical technology
S. M. Gon, MPH—medical technology
J. S. Ha, PhD—clinical biochemistry
C. Ying, BS—medical technology

Degree and Certificate Offered: BS in medical technology

The Academic Program
Medical technology (MEDT) is a health-care profession in which medical technologists (medical laboratory scientists) perform laboratory procedures used for the promotion of health and the diagnosis, monitoring, and treatment of diseases. Technical skills needed to carry out the tasks include microscopy, venipuncture, manipulation of various labware and operation of automated instruments. Results of these procedures are essential to the delivery of quality health care. The field is broad and involves several disciplines: chemistry, hematology, immunohematology (blood banking), immunology, and microbiology.

Medical technology is a constantly evolving profession. Advances in healthcare and new career opportunities have fueled the demand for medical laboratory scientists. Employment opportunities are in hospitals, physician’s offices, reference labs, DNA labs, research, veterinary clinics, and other labs. Education and training in medical technology also enables graduates to pursue careers as physicians, forensic scientists, researchers, educators, health administrators, consultants, and many more.

Admission Requirements
The curriculum is a career-pathway structure that begins with medical lab technician (MLT) associate degree at a community college and culminates in a BS degree in medical technology. Students master the basic skills and knowledge in medical laboratory as MLT, then clinical applications and problem solving skills that are required of the baccalaureate level practitioners are learned at UH Mānoa. Kapiolani Community College (KCC) offers an associate degree in MLT; 4303 Diamond Head Road, Honolulu, HI 96816; URL: www.kapiolani.hawaii.edu/academics/programs-of-study/medical-laboratory-technician-program/; (808) 734-9270.

Among eligible candidates, 10 to 15 students will be selected by the Admissions Committee to be admitted. Eligibility criteria are:
- Associate degree in Medical Laboratory Technician (MLT).
- National certification as an MLT.
- Cumulative GPA of at least 2.5 in the MLT program.

While at KCC, students are encouraged to select courses applicable to UH Mānoa General Education, major requirements and prerequisites. Students considering matriculating to UH Mānoa should seek academic advising from advisors on either campus.

Medical technologists perform various procedures that directly impact patient care, so it is important that all applicants be able to perform certain essential functions. With appropriate accommodations, if needed, everyone must be able to perform the activities listed below. These skills are assessed in the MLT program. Additional professional skills are taught in courses after admission.
- Manipulate labware to transfer or prepare reagents and samples (e.g., charge hemocytometer, prepare blood smear).
- Operate simple instruments according to instructions (e.g., cell counter, centrifuge, spectrophotometer).
- Perform microscopic examinations on various specimens and report the results (e.g., leukocyte differential count, cell morphology, urinary sediments).
- Follow written and verbal directions to perform laboratory tests and report results.

Other Requirements
Medical technology majors are required to have professional liability insurance, which costs about $40 per year. Immunization for Hepatitis B virus is highly recommended. Clinical affiliates, for those who opt to participate in the post-graduate clinical training, may have additional requirements (e.g., vaccinations, CPR/AED training, criminal background check).

Advising
Students are encouraged to see a medical technology advisor as soon as possible and prior to each registration period. Appointments can be made through the department office.

Clinical Training
Clinical training at affiliated clinical labs in Hawai‘i follows graduation. Alternatively, as certified MLT, students may qualify for medical lab scientist (MLS) certification through work experience.

Accreditation
The program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences, 5600 N. River Rd. Rosemont, IL 60018, phone (773) 714-8880, www.nacls.org.

Certification and Licensure
After clinical training, students are eligible to take a national certification exam. In Hawai‘i, state licensure is also required for employment.

Undergraduate Study
Bachelor’s Degree

Requirements
- Complete the degree requirements that satisfy UH Mānoa’s General Education Core requirements and program requirements. Second language is not required.
- Earn a minimum cumulative GPA of 2.0
- Submit by the specified deadline an application for graduation to the Cashier’s Office during the semester preceding the awarding of the degree.

* Graduate Faculty
Curriculum for Medical Technology
MEDT 151(2) is offered at UH Mānoa for those who start at UH Mānoa. MLT curriculum is offered at KCC.

Junior Year
- Semester 1: †MEDT 301 (3); †MEDT 331 (3); CHEM 272/L (3/2); PHYL 301 (4)
- Semester 2: †MEDT 431 (3); †MEDT 471 (4); CHEM 273 (3), BIOL 172 (3); PHYL 302 (4); TRMD 431 (2)

Senior Year
- Semester 1: †MEDT 451/L (1/2), †MEDT 472 (4), †MEDT 477 (2); †MICR 461 (3)
- Semester 2: †MEDT 464 (3); †MEDT 478 (2); †MEDT 481 (1); †MICR 463 (3), BIOL 275 (3)

Post-baccalaureate Study

Certificate for Clinical Training
†MEDT 591 (28)
†Note: Grade of C or equivalent is required for courses highlighted with a dagger (†).

The Academic Program

Internal Medicine is the medical discipline that specializes in the prevention, diagnosis, and management of illnesses in adults. The Department of Medicine contributes to the general education of medical students, and provides post-doctoral and continuing education in the discipline of Internal Medicine and its sub-specialties. Faculty also maintain active, funded research programs in HIV/acquired immunodeficiency syndrome (AIDS), cardiology, diabetes, neurology, and respiratory diseases, in addition to patient-oriented, community-based, or medical education research. Faculty also provide direct patient care and medical services in hospital and outpatient settings, particularly to the under-served or under-insured. In delivering medical education, conducting research, and providing patient care, the department helps Hawai‘i meet its health care needs, develop an important work force, and advance our understanding of health disparities in the context of Hawai‘i’s unique ethnic and environmental diversity.

Education
The department provides education for medical students, interns and residents (post-MD students), faculty, and practitioners. In the first two years of medical student education, departmental faculty hold key leadership and teaching roles in Problem-Based Learning, Colloquia, Basic Science Correlations, Clinical Skills Preceptorship, and many BIOM courses. In these early years, the curriculum integrates humanities, social sciences, and the physical and biological sciences. The curriculum also promotes skills in hypothesis formulation, data acquisition and evaluation, clinical problem-solving, and effective communication with patients, their families, and other members of the health team.

For third year students, the department coordinates required clerkships that provide students supervised, formative experiences in the evaluation and management of patients in hospital and outpatient settings. For fourth year medical students, fac-
ulty in general medicine and internal medicine sub-specialties also offer required and elective learning opportunities that focus on particular aspects of internal medicine. In brief, the department helps the learner achieve graduation objectives and helps assure accreditation of the school by the Liaison Committee on Medical Education.

The department also provides the faculty and the educational oversight for interns and residents in the UH Mānoa Internal Medicine Residency Program, which is accredited by the American Council of Graduate Medical Education. Each year, nearly 20 post-MD students complete the 3-year Categorical program. Faculty develop and deliver curricula that address fundamental concepts in general medicine and in each of the Internal Medicine sub-specialties: Allergy and Immunology, Cardiology, Critical Care Medicine, Dermatology, Endocrinology, Gastroenterology, Geriatric Medicine, Hematology, Infectious Diseases, Nephrology, Neurology, Oncology, Pulmonary Diseases, and Rheumatology. The curricula are delivered in inpatient and outpatient sites that provide opportunities for supervised direct patient care and that embody the practical experiences for which the internist must be prepared. They prepare the resident for certification by the American Board of Internal Medicine. Increasing emphasis on medical education and scholarship help assure that residents will learn and teach well beyond their graduation from the Residency. Indeed, post-doctoral residents are integral to the education of our medical students.

As part of the departmental commitment to post-graduate training, the department also educates up to 6 preliminary residents who complete a year of Internal Medicine before focusing in Neurology, Dermatology, and other specialties. It shares in the education of as many as 9 transitional residents who complete a year of medical and surgical training before focusing in programs such as Anesthesiology, Ophthalmology, or Radiology. Finally, our faculty supervises rotations for residents in other disciplines, as required by their respective accrediting Boards. These include Family Practice and Community Medicine, Obstetrics and Gynecology, and Psychiatry.

The department is also accredited by the American Consortium in Continuing Medical Education to provide weekly seminars and special learning activities in topics pertinent to the practicing internist. Through its regular evaluation and discourse with practicing physicians as well as academic researchers, the department shares scientific advances with the community and gains practical insights that help shape the education of our future physicians.

Research
Faculty are principal investigators of and contributors to several federally funded research programs, including the Hawai‘i Center for AIDS, the Center for Cardiovascular Research, Neuroscience and MR Research Program, and Asthma and Immunogenetics Research. Many ongoing translational and clinical research projects help address racial disparities in prevalence, detection, and management of illnesses. Reflecting the collaboration with basic scientists, several faculty also have adjunct appointments in basic science departments and programs. Research in bioethics, medical education, public health, community outreach, and community-based participatory research promote teaching and learning approaches, and advance the health literacy of the medical and public communities. The diverse scientific and scholarly activities provide rich learning opportunities for UH Mānoa undergraduates, JABSOM medical students, UHIMRP residents, and practitioners.

Service
In addition to supporting department, school, and university needs, faculty also provide clinical services in settings that benefit under-served communities and that enhance medical student and post-doctoral learning. The faculty practice provides a continuum in the prevention, diagnosis, evaluation, and management of illness. Complex cases that result from interactions between genetics, environment, and culture benefit from multi-disciplinary inquiry and collegial discussion fostered by the medical school and its faculty.

Native Hawaiian Health
John A. Burns School of Medicine
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Web: jabsom.hawaii.edu/departments/dnhh/

Faculty
J. K. Kaholokula, PhD (Chair)—behavioral scientist, clinical health psychologist
K. Blaisdell, MD—emeritus professor
S. K. Brady, MD, MPH—internal medicine, biostatistics-epidemiology
D. Carpenter, MD—internal medicine, clinical teaching, cultural competence
M. Corley, PhD—biomedical science, epigenomics
C. Harris, MBA—business management, post baccalaureate education
S. Fernandes, MD—pediatrics, student recruitment and retention
C. Ha, PhD—biochemistry, post baccalaureate education
N. Judd, PhD—emeritus professor
M. Kamaka, MD—family medicine, cultural competence
S. Kaulukukui, MS—faculty and student development
M. S. Lee, MD—family medicine, student recruitment and retention
M. Mau, MD, MS—health disparities, Myron Pinky Thompson Endowed Chair
A. Maunakea, PhD—biomedical science, epigenomics
W. K. Mesiona-Lee, MD—pediatrics, post baccalaureate education, student recruitment and retention
R. Miyamoto, PsyD—behavioral science, clinical health psychology
K. Sakamoto, MS—post baccalaureate education, student development
P. M. Tim Sing, MD—internal medicine, post baccalaureate education
S. Tsuhako, MD—anatomy and reproductive biology, post baccalaureate education
K. Voloch, MD—pediatrics, post baccalaureate education
V. Wong, MD—family medicine, faculty and student development

The Academic Program
The mission of the Department of Native Hawaiian Health is to be a center of excellence in education, research, and quality health care practices committed to the optimal health and wellness of Hawai‘i Maoli, their families, and communities that embraces traditional Hawaiian values and practices. To accomplish this mission, the program will actively seek “grass-roots” partnerships with others in the community who share their vision of Ku Pono: Hawai‘i Maoli achieving optimal health and wellness.

Research efforts will be focused on reducing and eliminating health disparities in Native Hawaiians and other Pacific-
based populations. This includes activities such as conducting hypothesis driven research, developing pilot studies, training new researchers and networking with Native Hawaiian communities to disseminate research information via the Center for Native and Pacific Health Disparities Research, the Heart Failure Disparities in Native Hawaiians Study, the PILI ‘Ohana Obesity study, and other NIH funded grants.

Two programs are dedicated to increasing and improving the health workforce serving Hawai‘i, especially in Native Hawaiian communities: the ‘Imi Ho‘ōla Post-Baccalaureate Program and the Native Hawaiian Center of Excellence.

‘Imi Ho‘ōla Post-Baccalaureate Program
‘Imi Ho‘ōla (Hawaiian for “those who seek to heal”) is a post-baccalaureate program designed to provide educational opportunities to students from disadvantaged backgrounds capable of succeeding in medical school. Although ‘Imi Ho‘ōla is not limited to persons of Hawaiian, Filipino, Samoan, Chamorro, and Micronesian descent, a large number of these students have been able to demonstrate that they are from a disadvantaged socioeconomic and/or educational background and have demonstrated a commitment to serve areas of need in Hawai‘i and the Pacific. ‘Imi Ho‘ōla has expanded its outreach efforts and developed partnerships with local high schools, colleges, and community-based health organizations.

Native Hawaiian Center of Excellence (NHCOE)
NHCOE is funded through state, federal, and private funds and focuses on: (1) Enhancing the performance of Native Hawaiian medical students by offering support for USMLE board preparation and collaboration with JABSOM retention efforts; (2) Developing the research and teaching skills of Native Hawaiian faculty by offering one- to two-year fellowships; (3) Addressing information resources by developing Native Hawaiian health resources, cultural competency, and curricula through conferences and workshops; (4) Focusing research by offering an elective for first year medical students on introducing research and topics of Native Hawaiian health issues; (5) Promoting student training in rural areas by serving as a resource for students choosing to do electives in rural Native Hawaiian communities; and (6) Developing a competitive applicant pool through active involvement in the establishment of collaborative efforts with colleges and high schools to develop programs aimed at increasing the numbers of Native Hawaiian medical students.

Obstetrics, Gynecology, and Women’s Health
Kapi‘olani Medical Center for Women and Children
1319 Punahou Street, Room 824
Honolulu, HI 96826
Tel: (808) 203-6500
Fax: (808) 955-2174

Faculty
I. Zalud, MD (Chair)—obstetrics, maternal fetal medicine, gynecologic ultrasound
K. Y. Terada, MD (Vice Chair)—gynecologic oncology
M. C. Aaronoff, MD—obstetrics and gynecology
T. C. Aeby, MD, MEd—obstetrics and gynecology
M. L. Bartholomew, MD—obstetrics, maternal fetal medicine, gynecologic ultrasound
S. S. Brizzolara, MD—obstetrics and gynecology, urogynecology
J. M. Burlingame, MD—obstetrics, maternal fetal medicine
M. E. Carney, MD—gynecologic oncology
A. L. Chang, MD, MPH—obstetrics and gynecology
J. E. Elia, MPH—public health
S. T. Emura, MD—obstetrics and gynecology
W. L. T. Fong, MD—obstetrics and gynecology
M. A. Gaspar-Oishi, MD—obstetrics and gynecology
K. Y. Hiraoaka, MD, MS—obstetrics and gynecology
T. T. F. Huang, PhD—reproductive endocrinology, gynecologic ultrasound
B. E. K. Kaneshiro, MD, MPH—obstetrics and gynecology, family planning
R. M. Kawelo, MD—obstetrics and gynecology
B. Kessel, MD—obstetrics and gynecology, reproductive endocrinology and infertility
R. J. Kim, MD—gynecologic oncology
T. S. Kosasa, MD—obstetrics and gynecology, reproductive endocrinology and infertility
G. G. Li, MD—gynecology
J. P. Lum, MD—obstetrics and gynecology
R. T. McCartin, MD—obstetrics and gynecology
S. M. Minaglia, MD, MBA—gynecology, urogynecology and pelvic pain
I. A. Oyama, MD, MBA—gynecology, urogynecology and pelvic pain
J. L. Sakedo, MD, MPH, MPP—obstetrics and gynecology, family planning
M. C. Savala, MD—obstetrics and gynecology
R. A. Soon, MD, MPH—obstetrics and gynecology, family planning
S. K. Taylor, MD—obstetrics and gynecology, maternal fetal medicine
D. R. Towner, MD—obstetrics, maternal fetal medicine, medical genetics
T. E. Wright, MD, MS—obstetrics and gynecology
G. C. Yokochi, MD—obstetrics and gynecology

Degree Offered: MD

The Academic Program
Instruction in obstetrics and gynecology (OBGN) is divided into five general areas: basic clerkship, student electives, residency training, fellowship training, and continuing medical education. The main objectives of the clerkship during the third year is to give students an overall perspective of the field, an in-depth knowledge of women’s health care and the ability to perform those technical skills necessary for the care of women. The elective experiences are developed to allow interested students the opportunity to acquire detailed knowledge and

* Graduate Faculty
experience in women’s health care or within specific areas of care.

The department directs a four-year residency training program for medical graduates who desire specialty training in the field. The MD education program is closely integrated with residency training to maintain communication and learning experience throughout training. The department has fellowships in Maternal Fetal Medicine and Family Planning. Research is focused in high-risk obstetrics, public health, health disparities, human reproduction, family planning, and human reproduction. The department is divided into the following divisions: endocrinology-infertility, maternal-fetal medicine, obstetrics and gynecology-ambulatory and hospitalist, gynecologic oncology, urogynecology, research, imaging, and family planning.

Pathology
John A. Burns School of Medicine
651 Ilalo Street
Honolulu, HI 96813
Tel: (808) 692-1130

Faculty
A. L. Schiller, MD (Chair)—orthopaedic pathology, autopsy pathology
P. K. Bryant-Greenwood, MD, MBA (Vice Chair)—molecular pathology, anatomic pathology
D. Shimizu, MD (Program Director)—GYN pathology, anatomic pathology
A. Powers, MD (Residency Program Associate Director)—transfusion medicine, clinical pathology
M. Bankowski, PhD—microbiology
D. Horio, MD—anatomic and clinical pathology
B. J. Kaya, MD—neuropathology, anatomic pathology
W. Kim, MD—clinical pathology
C. Lum, MD—dermatopathology, molecular pathology
K. S. Thompson, MD, MS—pediatric pathology, anatomic pathology, genetics
J. H. Uyehara-Lock, MD—neuropathology, anatomic pathology

Degree Offered: MD

The Academic Program
Pathology (PATH) is the study of aberrations or deviations of organs or systems that result in disease. Instruction in pathology is open to undergraduate, graduate, medical students, and residents. All medical students may elect to take PATH 515 as a part of the problem-based learning curriculum. The required PATH 541 provides essential autopsy experience for all third- and fourth-year medical students. Third and fourth-year students may choose electives PATH 545 and 699 that include instruction in laboratory medicine for the practicing physician, clinical pathology, anatomic pathology, clinical immunology, and molecular diagnostics and directed research projects.

The department directs an integrated residency program in pathology. Residents are based at Kaiser Hospital, Queen’s Medical Center, Kapiolani Medical Center for Women and Children, the Honolulu Medical Examiner Office, and the Blood Bank of Hawai’i. Clinical faculty come from all the community hospitals and provide gross and microscopic specimens for demonstration, clinico-pathologic correlations, seminars, and lectures.

* Graduate Faculty

Pediatrics
Kapi‘olani Medical Center for Women and Children
1319 Punahou Street, Room 742
Honolulu, HI 96826
Tel: (808) 369-1200
Fax: (808) 369-1212

Faculty
K. T. Nakamura, MD (Chair)—neonatology
K. K. Abe, MD—pediatric neurology
B. Ackermann, MD—pediatrics
K. M. Ash, MD—neonatology
V. Balaraman, MD—neonatology
T. M. Bane-Terakubo, MD—pediatrics
R. B. Boychuk, MD—emergency medicine
A. G. Britten, MD—critical care
M. O. J. Chang, MD—pediatrics
R. K. S. Chang, MD—critical care
S. S. P. Chen, MD—pediatrics
N. S. Clarke, MD—pediatrics
W. C. M. Credo, MD—emergency medicine
J. R. Di Rocco, DO—pediatrics
P. J. Di Rocco, MD—emergency medicine
P. J. Eakin, MD—emergency medicine
A. K. Feng, MD—critical care
K. K. Fernandez, MD—pediatrics
C. B. Finnegan, MD—pediatrics
P. H. Francisco-Natanauan, MD—pediatrics
G. M. French, MD—developmental/behavioral pediatrics
B. Gangaram, MD—pediatrics
F. J. Garcia, MD—emergency medicine
D. W. Glaser, MD—hematology/oncology
J. J. Harrington, MD—critical care
C. Hirai, MD—neonatology
T. K. F. Hong, MD—emergency medicine
A. S. Inaba, MD—emergency medicine
L. K. Iwaishi, MD—developmental pediatrics
L. M. Iwamoto, MD—neonatology
L. N. L. Kahikina, MD—pediatrics
J. R. King, DO—sports medicine/dance medicine
J. L. King, DO—pediatric gastroenterology
J. S. Kosut, MD—pediatrics
S. Kuo, MD—neonatology
D. K. Kurahara, MD—pediatric rheumatology
M. S. I. Kyono, MD—pediatrics
W. T. Kyono, MD—hematology/oncology
R. L. A. Lau, MD—pediatric nephrology
J. J. Lee-Jayaram, MD—emergency medicine
K. A. Len, MD—pediatrics
J. C. Lin, MD—pediatrics
D. Medeiros, MD—hematology/oncology
J. C. Meister, MD—pediatrics
M. E. Melish, MD—infectious disease
B. D. Mih, MD—pediatrics
B. M. Mizuo, MD—pediatrics
D. T. Murai, MD—neonatology
J. E. Musgrave, MD—pediatric nephrology
I. Y. Nakagawa, MD—emergency medicine
K. Natarajan, MD—pediatrics
C. R. Neal, MD—neonatology
B. M. Nishikawa, MD—pediatrics
C. K. Okado, MD—pediatrics
J. K. Okamoto, MD—developmental/behavioral pediatrics
M. M. Okihara, MD—pediatrics
M. Oliveros, MD—neonatology

* Graduate Faculty
S. Patel, MD—pediatrics
A. M. Perry, MD—emergency medicine
D. V. Reddy, MD—pediatric cardiology
R. Salyer, MD—pediatrics
M. Sato, MD—emergency medicine
A. Schroepl, MD—general psychiatry, child and adolescent psychiatry, pediatrics
L. H. Scarver, MD—genetics
W. P. Sheu, MD—pediatrics
W. K. T. Shim, MD—pediatric surgery
M. L. Shimokawa, MD—pediatrics
B. T. Shiramizu, MD—hematology/oncology
C. C. J. Sia, MD—pediatrics
S. L. Sood, MD—neonatology
L. Y. Tanaka, MD—critical care
M. Uehara, MD—developmental/behavioral pediatrics
R. K. Wada, MD—hematology/oncology
R. W. Wilkinson, MD—hematology/oncology
Y. C. Wu, MD—pediatrics
K. P. Xoinis, MD—critical care
F. Y. Yamamoto, MD—allergy/immunology
K. S. Yamamoto, MD—pediatric rheumatology
L. G. Yamamoto, MD—emergency medicine
R. T. Yanagihara, MD—infectious disease

Degree Offered: MD

The Academic Program

Pediatrics (PED) is the specialty of medical science concerned with the physical, emotional, and social health of children from birth to young adulthood. The discipline deals with biological, social, and environmental influences on the developing child and with the impact of disease and dysfunction on development.

The Department of Pediatrics offers specialty training for the medical student, as well as post-MD residency training and subspecialty experience. The medical student curriculum consists of the core curriculum for pediatrics completed during the third year of the MD program. A wide variety of electives in different sub-specialties are offered during the fourth year of the MD program in addition to sub-internship opportunities in various clinical disciplines. The Post-MD residency program accommodates eight MDs (yearly) in a three year ACGME-accredited curriculum preparing them for a career in pediatrics or furthering their training in a subspecialty within pediatrics. There is also ACGME-accredited training in Neonatal Perinatal Medicine (Neonatology), which is a three year program following the Pediatric Residency Training and is jointly sponsored by Kapi’olani Medical Center for Women and Children and Tripler Army Medical Center as the clinical training sites.

The Department of Pediatrics is very active in clinical and quality improvement research with majority of the activities being done at Kapi’olani Medical Center for Women and Children.

Psychiatry

University Tower, Queen’s Medical Center, 4th Floor
1356 Lusitana Street
Honolulu, HI 96813
Tel. (808) 586-2900
Fax: (808) 586-2940

Faculty

A. Guerrero, MD (Interim Chair)—general child and adolescent psychiatry and general pediatrics, consultation-liaison psychiatry
R. Agoha, MD—general and child and adolescent psychiatry, general pediatrics
D. Alicata, MD, PhD—general and child and adolescent psychiatry, neuroscience and neuroimaging
J. Andrade, MD—general and child and adolescent psychiatry
N. Andrade, MD—general psychiatry
B. Carlton, MD—general and adolescent psychiatry, addiction psychiatry, general pediatrics
J. Chung-Do, DrPH—public health and epidemiology, youth violence prevention research, women’s health
R. Davidson, MD—general psychiatry
M. Fukuda, MSW, LCSW—healthcare planning and administration
A. Ghiasuddin, MD—general and child and adolescent psychiatry and general pediatrics
D. Goebert, DrPH—public health and epidemiology, women’s health, addictions
W. Haning, MD—general and addictions psychiatry
S. Helm, MD—community and cultural psychology
E. Hishinuma, PhD—behavioral research and psychometrics-statistics, youth violence prevention
R. Koli, MD—general child and adolescent psychiatry, women’s health
J. Lee, DO—general and geriatric psychiatry
B. Lu, MD, PhD—general, geriatric, and consultation-liaison psychiatry
S. Luk, DO—general and child and adolescent psychiatry
C. Matsu, MD—general and child and adolescent psychiatry
S. Nishimura, PhD—social work, behavioral and evaluation research, adolescent addictions
J. Onoye, PhD—neuroscience, women’s health, youth violence prevention research
J. Pearce, MD—neurology
A. Serghi—general and consultation-liaison psychiatry
J. Strelitz, MD—general and addictions psychiatry, pain medicine
J. Takeshita, MD—general geriatric and consultation-liaison psychiatry
T. Toohy, MD—general psychiatry
S. Williams, MD—general and child and adolescent psychiatry
M. D. Zuniga, MD—general psychiatry and child and adolescent psychiatry

Degree Offered: MD

The Academic Program

Psychiatry (PSTY) is a branch of medicine that derives its theoretical foundations from the neurosciences, as well as the psychological and social sciences. The investigation of the biological basis of mental illness is one of the most exciting areas of medical research today and is revolutionizing our understanding of mind-body relationships.

The Department of Psychiatry contributes to the overall mission of the School of Medicine by providing leadership in psychiatric training, teaching, research, and services in Hawai’i, Asia, and the Pacific Basin. The department is committed to expanding knowledge within a cross-cultural and bio-psycho-social framework.

* Graduate Faculty
Traditional courses have been replaced with the problem-based learning curriculum. Psychiatric issues are addressed throughout the curriculum but are particularly emphasized in the second year during the brain and behavior sub-unit of Unit MD6 and in the third year Psychiatry Clerkship.

Public Health Sciences
Biomedical Sciences D-204
1960 East-West Road
Honolulu, HI 96822
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Web: manoa.hawaii.edu/publichealth/

Faculty
*K. L. Braun, MPH, DrPH (Chair)—social and behavioral health sciences
*O. V. Buchthal, DrPH—social and behavioral health sciences
*D. V. Canyon, PhD, DBA, MPH, FACTM—health policy and management
*J. J. Chung-Do, DrPH—social and behavioral health sciences
*R. Cooney, PhD—epidemiology, environmental sciences
*T. Delormier, PhD—Indigenous health
*V. Fan, ScD—health policy and management
*A. Grandinetti, PhD—epidemiology
*E. L. Hurwitz, DC, PhD—epidemiology
*A. R. Katz, MD, MPH—epidemiology
*Y. Lu, PhD—environmental health
*E. McFarlane, MPH, PhD—social and behavioral health sciences, health policy and management
*D. C. Nelson-Hurwitz, PhD—Indigenous health
*C. R. Nigg, PhD—social and behavioral health sciences
*C. Pickle, PhD—environmental sciences, health policy and management
*T. L. Sentell, PhD—health policy and management
*M. M. Taulii, MPH, PhD—Indigenous health
*R. J. Williams, MPH, DrPH—social and behavioral health sciences
*Y. Y. Wu, PhD—biostatistics, epidemiology
*V. Yontz, RN, MPH, PhD—social and behavioral health sciences

Emeritus Faculty
G. Baruffi, MD, MPH—social and behavioral health sciences
J. Grove, PhD—biostatistics
*L. Kolonel, MPH, PhD—epidemiology

Cooperating Graduate Faculty
C. A. Albright, PhD—social and behavioral health sciences
K. Cassel, MPH, DrPH—social and behavioral health sciences
J. J. Chen, PhD—biostatistics
J. Davis, PhD—biostatistics
J. Douglas, PhD—epidemiology
P. Fagan, PhD—social and behavioral health sciences
S. N. K. Fernandes, MD—indigenous health, social and behavioral health sciences
L. Garmire, PhD—epidemiology
D. A. Goebert, DrPH—social and behavioral health sciences
J. R. Hedges, MD, MMM—health policy and management
T. A. Herzog, PhD—social and behavioral health sciences
D. T. Juarez, ScD—health policy and management
J. K. Kaholokula, MS, PhD—Indigenous health
L. Le Marchand, MD, MPH, PhD—epidemiology
T. Le, PhD—social and behavioral health sciences
H. R. Lee, PhD—social and behavioral health sciences
F. Li, PhD—epidemiology
G. Maskarinec, MD, MPH—epidemiology
M. Mau, MD, MPH—Indigenous health
A. Maunakea, PhD—Indigenous health
C. M. Nishita, PhD—social and behavioral health sciences
R. Novotny, PhD—epidemiology, social and behavioral health sciences
I. S. Pagano, PhD—epidemiology
B. Rodriguez, MD, MPH, PhD—epidemiology
R. Soon, MD, MPH—social and behavioral health sciences
J. Sugimoto-Matsuda, DrPH—social and behavioral health sciences
A. Sy, DrPH—social and behavioral health sciences
L. R. Wilkens, DrPH—biostatistics
S. Yamada, MD, MPH—epidemiology
R. Yanagihara, MD, MPH—epidemiology
G. Zhang, PhD—biostatistics

Affiliate Graduate Faculty
J. R. Campbell, PhD—global health and population studies
M. Greenwood, PhD—Indigenous health
D. K. Hayes, MD, MPH—epidemiology
J. Reading, PhD—Indigenous health

Degrees and Certificate Offered: BA in public health, MPH, MS in public health, DrPH, PhD in epidemiology, Graduate Certificate in Global Health Protection and Security (GHPS). See the “Interdisciplinary Programs” section for more information on the GHPS program.

The Academic Program
The mission of the Department of Public Health Sciences is to advance the health of the people of Hawai‘i, the nation, and the Asia-Pacific region through knowledge, discovery, innovation, engagement, inclusion, and leadership.

The department offers the bachelor of arts (BA) degree in public health; the master of public health (MPH) with specializations in epidemiology, social and behavioral health sciences, Native Hawaiian and Indigenous health, and health policy and management; the master of science (MS) degree with specializations in epidemiology; the doctor of public health (DrPH) degree with specialization in community-based and translational research; and the doctor of philosophy (PhD) degree in epidemiology. The department also administers the interdisciplinary graduate certificate program in global health protection and security.

Advising
Advising for undergraduate students enrolled or interested in the BA in public health is available through the undergraduate academic advisor; (808) 956-5753; email: phadvise@hawaii.edu; website: manoa.hawaii.edu/publichealth/degrees/undergraduate/advising.

Information, applications, and initial advising regarding all other degree programs in public health are available from the Office of Public Health Student Academic Services, Biomedical Science D-204, 1960 East-West Road, Honolulu, HI 96822; phone (808) 956-8267; email: ophsas@hawaii.edu; website: manoa.hawaii.edu/publichealth/.

Undergraduate Study
The bachelor of arts (BA) degree in public health is designed to educate undergraduates interested in public health and/or health profession training in the broad basic concepts of public health education, practice, and research. The primary focus of public health education is to improve health and quality of life...
through population-based prevention and treatment of disease and other physical and mental health conditions, through surveillance of cases and the promotion of healthy behaviors.

**Admission Requirements**

Students applying to UH Mānoa may declare public health as their major upon entry. Requirements for admission are described in the “Undergraduate Education” section of the Catalog.

For current UH Mānoa undergraduate students seeking a concurrent degree in public health, the requirements for admission include the completion of PH 201 Introduction to Public Health with a B- or better, a minimum cumulative GPA of 3.25, meeting with the undergraduate academic advisor, and an approved Concurrent Undergraduate Degree Application.

Current UH Mānoa undergraduate students who wish to change their major to public health must first complete PH 201 Introduction to Public Health with a B- or better and meet with the undergraduate academic advisor before filing a Major Declaration Form.

**Graduation Requirements**

1. Meet all UH Mānoa and departmental requirements;
2. Complete the public health curriculum, applied learning experience, and capstone seminar for letter grades;
3. Complete a minimum of 120 semester credit hours;
4. Have a minimum cumulative GPA of 2.0 or higher in order to graduate; and
5. Complete an application for graduation in the semester preceding the award of the degree.

**Course Requirements**

A total of 36 major credits (45 credits with public health-related courses) are required to graduate with a bachelor’s degree in public health. All students are encouraged to work closely with the undergraduate advising staff in the Office of Public Health Studies in planning their coursework.

**Public Health Related Courses (9 credits)**

- PSY 100 Survey of Psychology (3) (DS)
- MATH 140 Precalculus or higher (3) (FS)
- Statistics, select one: PH 350, ECON 321, EDEP 429, NREM 310 or SOCS 225/PSY 225 (3)

**Public Health Required Core Courses (24 credits)**

- PH 201 Introduction to Public Health (3) (DS)
- PH 202 Public Health Issues in Hawai’i (3)
- PH 203 Introduction to Global Health (3)
- PH 310 Introduction to Epidemiology (3)
- PH 341 Public Health Biology and Pathophysiology (3) (DB)
- PH 480 Application of Public Health Principles in Research and Practice (3)
- PH 485 Public Health Applied Learning Experience (3)
- PH 489 Public Health Undergraduate Capstone Seminar (3)

**Public Health Elective Courses (12 credits)**

Visit our website at manoa.hawaii.edu/publichealth/courses for a current list of public health courses. Since public health is by nature interdisciplinary, students will be encouraged to take electives in areas outside of the department. The list of recommended electives offered in other departments to complete the 12 credits of advisor-approved upper division public health electives is available on our website at manoa.hawaii.edu/publichealth/degrees/undergraduate/undergraduate-degree-requirements.

Students seeking additional information and advising on our bachelor’s degree program should contact the undergraduate academic advisor at phadvise@hawaii.edu.

**Graduate Study**

**Master’s Degree**

MPH students follow a Plan B (non-thesis) program. MS students follow a Plan A (thesis) degree program.

**MPH Requirements**

- Minimum of 42 credit hours, 18 or more in courses numbered 600-798
- One graduate seminar
- Required and core courses
- Other courses as designated by the student’s program committee
- Field training experience (PH 791)
- Final competency assessment

**MS Requirements**

- Minimum of 31* credit hours for epidemiology, 18 or more in courses numbered 600-798
- One graduate seminar
- Required courses
- 6 credit hours of thesis research (PH 700)
- Other courses as designated by the student’s thesis committee
- Final oral examination conducted by the thesis committee

*Most students will exceed the 31-credit hour minimum to meet their educational objectives.

**Areas of Specializations**

**Epidemiology**

Epidemiology is the study of the distributions and determinants of health-related events in human populations. A basic tenet of epidemiology is that diseases are not randomly distributed in the population. Determining the prevalence and risk factors associated with these events, as well as measuring the magnitude of such occurrences, is the basis of public health action. An essential part of this determination involves the utilization of epidemiologic and biostatistical methods to evaluate the effectiveness of disease control measures.

The master’s program generally requires two years of combined study and field work but may vary depending on academic background, experience, and academic goals of the student. The curriculum provides both breadth and depth. It instills knowledge and skills in epidemiologic methods, biostatistics, the collection and analysis of epidemiologic data, and the epidemiology of chronic and infectious diseases. Each student will have an academic advisor and committee with whom the student will work closely in scheduling and completing the academic requirements of the program.

Students are required to take advanced level training in chronic and infectious disease epidemiology, advanced biostatistics, and research design. There is opportunity for students to choose from epidemiology electives in the following areas: infectious diseases, nutrition, genetics, environment, aging, HIV/AIDS, cancer, and cardiovascular diseases. Course work in specialized statistical applications is also available. Students participate in on-going epidemiological research programs.
needs of Indigenous people, thereby enhancing the quality and effectiveness of those health services and policies. The improved quality and effectiveness of Indigenous health services contributes to the reduction of Indigenous health disparities and the improvement of Indigenous peoples’ health.

Students enrolled in this specialization are required to take advanced level training in Indigenous health policy, ethics and research design. There is opportunity for students to choose from Native Hawaiian and Indigenous health electives in many areas across the campus. Students will participate in on-going research programs with Indigenous communities through a practicum assignment.

For MPH students specializing in NHIH, the following course work is required: 1) Indigenous Seminar; 2) Health Ethics, Law, and Politics; 3) Advanced Native Hawaiian Health Determinants; 4) Indigenous Applied Research Methods; 5) Community Engaged Research and Practice; 6) Indigenous Peoples’ Food Systems, Environment & Health; and 7) Integrative Seminar. MPH students are also required to complete a fieldwork practicum and during their final semester, students will prepare a report on their practicum experience, complete a research-intensive final paper, and deliver a public presentation as a demonstration of mastery of program competencies and present their finding in a capstone presentation.

Social and Behavioral Health Sciences

Over the last century, chronic diseases have replaced infectious diseases as the leading causes of death and, despite advances in medicine and technology, health disparities are increasing in almost every country. Unhealthy lifestyle behaviors such as tobacco use, lack of physical activity, poor nutrition, unsafe sexual practices, substance abuse, and overexposure to the sun are major contributors to disability and death. Social factors, such as discrimination, poverty, dangerous living and work environments, and unequal distribution of resources (including health care resources), also affect health status. In the social and behavioral health sciences specialization, students will examine: a) behavioral and social theories in health promotion; b) behavioral, social, environmental, and political interventions that can promote health; and c) skills required for assessing health problems and for planning and evaluating health programs. Course assignments provide students the opportunity to apply knowledge, to practice skills, to enhance computer literacy, and to improve oral and written communications. Opportunities to participate in university-based and community-based research and service programs are provided.

MPH students specializing in social and behavioral health sciences gain knowledge and skills in public health research methods, biostatistics, theories of health behavior change, needs assessment, planning, and evaluation. The first semester focuses on public health core requirements. In subsequent semesters, students take required and elective course work to meet the social and behavioral health sciences competencies, as well as the student’s professional goals. A required 240-hour field practicum allows students to apply knowledge and skills in a community public health setting. During the final semester, students complete an integrative seminar, prepare a capstone paper, and deliver a public presentation as a demonstration of mastery of program competencies and integration of classroom knowledge and field experience. A student-selected faculty
advisor and program committee guides the student’s course of study, practicum experience, and capstone.

**MPH and MS Requirements**

Applicants will be expected to have the academic background, experience, interests, and commitment for professional training in public health. Applicants must also have computer skills in word processing, spreadsheet construction, and internet applications. Academic preparation for the epidemiology specialization should include one year of coursework in a biological science, chemistry, and at least one semester of calculus. For the HPM specialization, preference may be given to students with training in social science, health, economics, business, or human services. Prior paid or voluntary work experience in the health care or human services fields is preferred, but not required. Academic preparation for the NHIH specialization includes course work in mathematics or statistics, public policy or political sciences, and psychology or sociology. Work or research experience in an applied health/social sciences field which serves an Indigenous population is preferred. Academic preparation for the SBHS specialization includes prior course work in mathematics or statistics, biology, or human development, and sociology or psychology. Experience in an applied health/social sciences field or in health/social sciences research is preferred.

**Doctoral Degrees**

**Doctor of Public Health (DrPH)**

The DrPH program with a specialization in community-based and translational research will prepare students to lead programs and conduct independent investigations addressing public health topics relevant to culturally diverse groups, with a special focus on those in the state of Hawai‘i and the Asia-Pacific region. Translational research is the investigation of how to successfully transform scientific discoveries arising from laboratory, clinical, or population studies into community applications to reduce disease incidence, morbidity, and mortality. Community-based participatory research in health is a collaborative approach to research that equitably involves investigators and members of the community in the research process and recognizes the unique strengths that each brings. This approach increases the likelihood that interventions will be embraced by the community and that the community members will gain knowledge, skills, and other benefits from the research.

**DrPH Requirements**

All DrPH students will complete required and elective coursework in health disparities, evidence-based public health, advance policy, leadership, cultural competence, community-based participatory research, and qualitative and quantitative methods. They also complete a qualifying exam, mentored teaching and research practica, a comprehensive exam, and a three-paper dissertation. DrPH students are expected to publish their work in peer-reviewed journals and present at national and international forums.

A few teaching and research assistantships are available for degree candidates. Qualified students may also apply for East-West Center fellowships. Contact Dr. Kathryn Braun (Chair) for additional details at kbraun@hawaii.edu

**Doctor of Philosophy (PhD)**

The PhD in epidemiology is comprised of graduate faculty from the Department of Public Health Sciences; University of Hawai‘i Cancer Center; Department of Tropical Medicine, Medical Microbiology, and Pharmacology; Department of Microbiology; and the Pacific Biosciences Research Center. Candidates who successfully complete this program will be able to teach in academic and other settings, conduct independent and collaborative epidemiologic research, and provide consultative services to academic, not-for-profit, governmental, and private organizations.

Although applicants to this program are not required to have a master’s degree in epidemiology or a closely related field, all applicants are expected to have a strong background in the natural and/or social sciences. Because we look for applicants who are committed to epidemiologic research and practice, past research and related work experience are important factors in selecting candidates. We encourage applications from candidates who have well-focused research interests and career goals. The Graduate Record Examination (General Test) and three letters of recommendation are required for application. Applicants must also include a written statement with the application indicating why they want to pursue a doctoral degree in epidemiology and why they want to pursue this degree here at UH Mānoa.

**PhD Requirements**

A prospective applicant is expected to communicate with one of our graduate faculty members in his or her area of interest or with the program’s chair and to be accepted as an applicant by a faculty member prior to admission. The faculty member involved will serve as an interim advisor upon the individual’s admission into the PhD program. A listing of the PhD in epidemiology faculty is available at manoa.hawaii.edu/publichealth/faculty-and-staff. All candidates take a qualifying examination upon completion of all required courses in epidemiology and biostatistics and core courses in infectious diseases and chronic disease epidemiology (usually after their first year of enrollment). This is followed by elective courses in the candidate’s area(s) of interest, a teaching practicum, an oral comprehensive examination, and dissertation research. Candidates should refer to the Catalog for procedural and substantive details.

A few teaching and research assistantships are available for degree candidates. Qualified students may also apply for East-West Center fellowships. Contact Dr. Eric Hurwitz (Chair), at ehrwitz@hawaii.edu for additional details.

**Honors and Awards**

Joseph E. Alicata Award in Public Health
Elmer J. Anderson Professional Travel Award
Chin Sik and Hyun Sook Chung Memorial Award
Abraham Kagan, MD Endowed Fellowship
Lawrence Koseki Award for Excellence in Community Service
Frances Ayako Matsuda Sano Fellowship in Public Health
Pauline Stitt Outstanding Student Award
Robert M. Worth Epidemiology Scholarship
Surgery
University Tower, Queen’s Medical Center
1356 Lusitana Street, 6th Floor
Honolulu, HI 96813-2421
Tel: (808) 586-2920
Fax: (808) 586-3022

Faculty
S. K. Steinemann, MD (Interim Chair)—general surgery, surgical critical care, trauma surgery
R. E. Atkinson, MD—orthopedic surgery, hand surgery
A. Bhatt, MD—emergency medicine
R. S. Bueno-Smith, MD—general surgery, minimally invasive/robotic/bariatric surgery
L. P. A. Burgess, MD—otolaryngology
A. H-S. Cheung, MD—general surgery, transplant surgery
G. H. Chow, MD—orthopedic surgery
K. P. A. Christensen, MD—orthopedic surgery
M. B. J. Chun, PhD—specialist
N. L. Furumoto, MD—general surgery
P. Halford, MD—general surgery
J. K. Harpsritre, MD—orthopedic surgery
E. M. Ignacio, MD—orthopedic surgery
J. M. Isa, MD—anesthesiology
D. M. Kan, MD—orthopedic surgery
J. A. Kendall, MD—radiology
D. G. Lattimer, MD—urology
J. Lederer, MD—radiation oncology
W. M. L. Limm, MD—general surgery, transplant surgery
C. S. F. Lorenzo, MD—general surgery, minimally invasive/robotic/bariatric surgery
J. B. Machi, MD, PhD—general surgery, ultrasonography
J. M. Marumoto, MD—orthopedic surgery
E. M. Masuda, MD—vascular surgery, general surgery
M. J. Meagher, MD—radiology
C. E. Moreno-Cabral, MD—thoracic/cardiovascular surgery
S. Y. Morita, MD—general surgery
P. T. Morris, MD—general surgery, thoracic/cardiovascular surgery
M. M. Mugishi, MD—general surgery
S. D. Nishida, MD—general surgery
A. J. Oishi, MD—general surgery
M. Okado, MD—general surgery
F. D. Parsa, MD—plastic surgery
E. Saegusa-Becroft—researcher
W. K. T. Shim, MD—pediatric surgery
D. I. Singer, MD—orthopedic surgery
S. G. Smith, MD—orthopedic surgery, sports medicine
G. A. Suares, MD—emergency medicine
D. M. Takanishi, Jr., MD—general surgery, surgical oncology, surgical critical care
L. L. Wong, MD—transplant surgery, general surgery
R. K. Woo, MD—pediatric surgery
S. L. Woodruff, MD—general surgery
J. S. Yamaguchi, MD—general surgery, transplant surgery
F. L. Yost, MD—general surgery
M. Yu, MD—general surgery, surgical critical care, trauma surgery

Degree Offered: MD

The Academic Program
Surgery emphasizes the use of interventional techniques to treat injury and disease. The educational program encompasses the pathology, pathophysiology, diagnosis, treatment, and perioperative management of surgical disease and trauma.

The department provides instruction to medical students in all surgical disciplines, as well as the related fields of anesthesiology, radiology, and emergency medicine. It directs general surgical and orthopedic residency programs, as well as a surgical critical care fellowship. Research and continuing medical education programs are provided.

Tropical Medicine, Medical Microbiology, and Pharmacology
John A. Burns School of Medicine
651 Ilalo Street
Honolulu, HI 96813
Tel: (808) 692-1600
Email: sandrac@hawaii.edu
Web: manoa.hawaii.edu/tropicalmedicine/

Faculty
* V. R. Nerurkar, PhD (Chair)—pathogenesis of infectious diseases, delineating cellular and molecular mechanisms underlying microbe-host interaction
* S. P. Chang, PhD—immunology, molecular biology, molecular approaches to vaccine development
* J. J. Chen, PhD—biostatistics
* W. L. Gosnell, PhD—host parasite interactions, malaria, immunology
* S. H. Gu, PhD—hantavirology
* V. Hinshaw, PhD—influenza virus epidemiology, pathogenicity, immunology and vaccines
* G. S. N. Hui, PhD—parasitology, immunology, cell biology
* P. H. Kauftusi, PhD—pathogenesis of West Nile virus
* J. F. Kelley, PhD—pathogenesis of flaviviruses
* K. J. Kramer, PhD—parasitology, epidemiology, leprosporiasis, HIV serodiagnosis
* M. Kumar, PhD—virus host interaction
* F. Mercier, PhD—mechanisms controlling neural stem cell proliferation and differentiation in the adult brain
* F. D. Miller, PhD—epidemiology of infectious diseases
* L. Ndhlouvu, MD, PhD—HIV immunology
* B. Shiramizu, MD—pathology of HIV-associated disorders
* D. W. Taylor, PhD—immunology of malaria in pregnant women and newborns
* S. Verma, PhD—molecular, biochemical aspects of viral diseases
* P. Walpita, PhD—paramyxoviruses, virus-like particles, vaccines
* W-K. Wang, DSc—pathogenesis of arboviral and zoonotic viruses
* S. Verma, PhD—molecular, biochemical aspects of viral diseases

Cooperating Graduate Faculty
J. M. Berestecky, PhD—enteric bacteria
L. Chang, MD—application of advanced neuroimaging techniques to study brain changes associated with HIV, substance abuse, brain development and aging
B. Hernandez, PhD—human papilloma virus, hepatitis virus, viral carcinogenesis, epidemiology
Y. Lu, PhD—gene therapy for HIV-1 infection, gene transfer approaches for neuroAIDS, immunodiagnosis of herpesvirus infection of green turtles, aquaculture virology
M. E. Melish, MD—staphylococcal infection and toxins, clinical infectious disease, Kawasaki syndrome
C. Shinuma, MD—neuroAIDS, immunodiagnosis of herpesvirus infection of green turtles, aquaculture virology
E. K. Tam, PhD—inflammation, immunologic mechanisms of pulmonary diseases, genetic and environmental determinants of asthma

* Graduate Faculty
R. Yanagihara, MD—transdisciplinary investigations of emerging and re-emerging infectious diseases, use of infectious agents as biological markers to trace ancient and recent movements of human populations

Adjunct Faculty
V. E. Andsell, MD—tropical and infectious diseases and clinical microbiology
M. J. Bankowski, PhD—clinical and molecular microbiology and infectious disease
S. N. Bennett, PhD—molecular evolution and epidemiology of emerging infectious diseases
B. R. Ellis, PhD—arbovirus and virus-vector interrelationships
A. Imrie, PhD—dengue immunology and epidemiology
J. Kim, MD—HIV vaccine development
A. T. Lehrer, PhD—viral vaccine development
M. M. Lieberman, PhD—arbovirus and vaccinology

Affiliate Graduate Faculty
A. C. Collier, PhD—drug metabolism and pharmacokinetics using in vivo, in vitro and in silico approaches, reproductive pharmacology
K. L. Palmer, PhD—global public health and tropical diseases

Degrees Offered: MS in biomedical sciences (tropical medicine), PhD in biomedical sciences (tropical medicine)

The Academic Program
Tropical medicine is the study of diseases that occur more commonly in the tropical regions of the world. However, in today’s era of globalization and modern transportation, diseases that were once confined to the tropics have spread geographically and played a significant role in the 20th century global resurgence of infectious diseases. As such, research in the area of tropical medicine and medical microbiology has greatly increased in importance in the past 20 years. Tropical medicine faculty conduct studies on infectious organisms and the diseases they cause, including dengue, West Nile, AIDS, hepatitis, viral and bacterial encephalitis, malaria, tuberculosis, and Kawasaki disease. The faculty employs a multidisciplinary approach, including immunology, pathogenesis, ecology, epidemiology, diagnosis, prevention, control, treatment, socio-ecological systems, human ecology, microbial and vector ecology, environmental change, and participatory action research to answer fundamental questions associated with the pathogenesis of these diseases. These studies can be laboratory-based, field-based, clinical-based, or include a combination of all three. The field of tropical medicine requires knowledge of virology, bacteriology, parasitology, entomology, immunology, cell and molecular biology, epidemiology, ecology, behavioral science, and clinical medicine.

Pharmacology is a medical science concerned with the effects of drugs and chemicals on living organisms. The subject embraces knowledge of the chemistry, actions, absorption, fate, excretion, and uses of drugs. Traditionally, the greatest interests in drugs have been with the health professions. Today, however, knowledge of pharmacology and the allied field of toxicology are relevant to all segments of society.

Graduate Study
The department offers courses for undergraduate, medical, and graduate students. Faculty participate in the MD program by providing tutorial and elective courses in medical microbiology, clinical immunology, molecular biology, pharmacology, and clinical aspects of tropical medicine and pharmacology. Electives for medical students are team taught and coordinated with unit objectives throughout the problem-based learning curriculum. In addition, the department plays an important role in the Basic Science Foundation course, and participates in the Pathology Residency Program by offering rotations in selected aspects of medical virology, parasitology, and bacteriology.

Master’s Degree
Graduates with a master’s degree in tropical medicine have gone on to careers in science education at the secondary and college level, technical and research positions in universities, government agencies, and biotechnology companies, or have continued on in PhD and MD training programs at other universities.

Requirements
The MS degree requires 21 credits of course work, nine credits of thesis research, completion of a thesis, and a final oral examination. A general examination, oral or written, is required before a student is advanced to candidacy for the MS (Plan A) degree. Although not encouraged, in very unusual circumstances, a non-thesis MS (Plan B) may be allowed. This program requires 30 credits of course work, a written examination, and participation in a research project.

Doctoral Degree
Graduates with a PhD degree have pursued professional research, teaching, and administrative careers at various academic institutions, state and federal government agencies, international health agencies, and biotechnology companies.

Requirements
The tropical medicine PhD program requires course work as determined necessary by the student’s advisory committee, a qualifying examination, comprehensive examination, drafting a written research proposal, dissertation, and final oral examination/defense of dissertation. Students are encouraged to take course work covering a broad array of the disciplines involved in the field of tropical medicine, including coursework offered by other academic departments as relevant to their area of concentration.

Faculty
Department faculty conduct active research in the following areas:
- virology and epidemiology of dengue, West Nile, and other flaviviruses
- diagnostic assays for flaviviruses
- hantavirus virology and epidemiology
- lentiviruses and polyomaviruses
- epidemiology and pathogenesis of hepatitis-associated viruses
- pathobiology and immunology of HIV and other retroviruses
- molecular epidemiology and evolution of viruses
- vaccines against paramyxoviruses using virus-like particles
- evaluation of hepatitis B infection and vaccination programs
- molecular and clinical epidemiology of streptococcal and staphylococcal infections
- malaria immunology and vaccine development
- malaria in pregnancy, maternal, and childhood immunity to malaria
reproductive and developmental pharmacology
emerging and re-emerging infectious diseases

Collaboration with infectious disease clinicians and international research institutes further expand research opportunities in the areas of HIV, Kawasaki disease, malaria, asthma, dengue, arboviruses, and zoonotic viruses. Research projects take place within the research laboratories in the department and at field sites in Africa, Asia, and the Pacific.

Pharmacology research within the department focuses on drug metabolism and pharmacokinetics. Research into developmental pharmacology in pregnancy and pediatric medicine is also a strong theme. The newly established human organ bank, in partnership with Organ Donor Center of Hawai‘i, is a central part of our translational research effort and provides tissues to researchers throughout the UH Mānoa and JABSOM campuses.

A major goal of the department is to provide Asian and Pacific countries the expertise needed to expand laboratory and epidemiologic capacity in tropical infectious diseases research. The department also has active research programs with several community hospitals and collaborates closely with the State of Hawai‘i Department of Health, providing instruction and expertise in bioterrorism preparedness and diagnosis of infectious diseases using the latest technology.
School of Nursing and Dental Hygiene

Administration
Webster 402
2528 McCarthy Mall
Honolulu, HI 96822
Tel: (808) 956-8522
Fax: (808) 956-3257
Web: www.nursing.hawaii.edu
Dean: Mary G. Boland
Associate Dean for Academic Affairs: Scott R. Ziehm

General Information
The School of Nursing and Dental Hygiene (SONDH) offers programs to prepare students for careers in nursing and dental hygiene primarily for the state of Hawai‘i and the Pacific Basin.

The Department of Nursing offers programs leading to the bachelor of science, master of science, DNP, and PhD nursing degrees. The department admits students to the undergraduate program both directly from high school and after completion of nursing pre-requisites and UH Mānoa General Education Core requirements. The school admits students to the graduate program with a bachelor’s degree or higher.

The Department of Dental Hygiene offers the bachelor of science degree. The program admits students following completion of dental hygiene prerequisite courses and the majority of UH Mānoa General Education Core requirements.

Vision
The leader in nursing and dental hygiene education and research in Hawai‘i with outreach to Asia and the Pacific Basin.

Mission
The SONDH mission is to provide an innovative, caring, and multicultural environment in which faculty, students, and staff work together to generate and transmit knowledge, wisdom, and values to promote quality of life and health for present and future generations. To better reflect Hawai‘i’s unique cultural diversity and heritage, the SONDH is committed to increasing Native Hawaiian and other underserved people in all nursing and dental hygiene programs.

Degrees and Certificates
Bachelor’s Degrees: BS dental hygiene, BS nursing
Master’s Degrees: MS nursing
Doctoral Degree: PhD, DNP

Dental Hygiene
Hemenway Hall 200-B
2445 Campus Road
Honolulu, HI 96822
Tel: (808) 956-8821
Fax: (808) 956-5707

Faculty
C. Kuba, RDH, MEd (Chair)—dental hygiene
A. Akamine, RDH, BEd—dental hygiene
L. Fong, DDS, MS—periodontology
P. Fujimoto, RDH, DDS—oral pathology
G. Lau, RDH, MEd—dental hygiene
M. Lau, RDH—dental hygiene
P. Lee, RDH—dental hygiene
K. Nakasone, RDH, MEd—dental hygiene
M. Oishi, DDS—dental materials, oral histology
J. Omori, RDH, MPH—dental hygiene
A. Ogawa, RDH, DMD—dental anesthesia/radiology
K. Osada, RDH, MEd—dental hygiene
P. Sunahara, RDH, MEd—dental hygiene
W. A. Wakai, RDH, DMD—head and neck anatomy
I. Yamada, DDS, MEd—periodontology

Degree Offered: BS in dental hygiene

The Academic Program
The Department of Dental Hygiene admits students to the bachelor of science in dental hygiene program following completion of a minimum of 29 semester credit hours of prerequisite and the majority of general education courses.

The program at UH Mānoa offers the only baccalaureate dental hygiene educational program in the state. It offers the preparation required by dental hygienists to provide oral health care and education to the people of Hawai‘i, the continental U.S., and the Pacific-Asia region.

Students completing the bachelor of science in dental hygiene qualify for admission to the national and regional dental hygiene examinations for licensure to practice dental hygiene in private, public health, and other dental hygiene settings.

The bachelor of science in dental hygiene provides opportunities for students to continue their education. It offers professional training to broaden and deepen knowledge and skills,
as well as provides a foundation for personal and professional development and opportunities for admission to graduate work.

**Accreditation**

The dental hygiene program is accredited by the Commission on Dental Accreditation, American Dental Association.

Each program accredited by the Commission on Dental Accreditation must post the Notice of Opportunity and Procedure to File Complaints with the Commission on Dental Accreditation. A copy of the appropriate accreditation standards and/or the Commission's policy and procedures for submission of complaints may be obtained by contacting the Commission at:

211 East Chicago Avenue
Chicago, Illinois 60611
Tel: 1 (800) 621-8099, ext. 4653

**Advising**

Department of Dental Hygiene
Hemenway Hall 200-B
Honolulu, HI 96822
Tel: (808) 956-8821

Academic advising is provided by faculty of the Department of Dental Hygiene. Potential applicants as well as students in need of advising should call for appointments.

**Graduation**

All enrolled dental hygiene students are advised to meet with a faculty advisor regarding their progress toward their degree to ensure that all requirements are met at least two semesters before the scheduled graduation date.

An application for graduation must be submitted with a degree fee to the Cashier's Office, QLCSS Room 001. This should be processed during the first three weeks of the semester the student intends to graduate.

**Honors and Awards**

**Dental Hygiene Faculty Award**

An outstanding dental hygiene student who has maintained high scholarship and made contributions to the department is recognized by the faculty of the Department of Dental Hygiene at graduation.

**Sigma Phi Alpha**

Alpha Kappa Chapter of Sigma Phi Alpha is the national dental hygiene honor society at UH Mānoa. Senior dental hygiene students who rank high in scholarship and character and exhibit potential qualities for future growth are recommended by faculty members for election to membership.

**Undergraduate Study**

**Admission Requirements**

To qualify for admission to the Dental Hygiene Program, applicants must complete the following requirements:

1. Admission to UH Mānoa
2. Minimum cumulative GPA of 2.5; inclusion of prerequisite science courses GPA
3. Prerequisite courses or equivalents: PHYL 103/103L; BIOC 241; MICR 130/140L; FSHN 185; COMG 151; ENG 100; SOC 100; PSY 100
4. Near completion of general education courses required for UH Mānoa graduation
5. Recommend completion of PHRM 203; PSY 225 (or equivalent)
6. Interview

There is a path for those students interested in completing a baccalaureate degree, who have graduated from an associate degree or certificate program. To qualify, the applicant must complete the following requirements:

1. Admission to UH Mānoa
2. Minimum cumulative GPA of 2.5; inclusion of pre-requisite science courses GPA
3. Minimum DH GPA of 3.0
4. Passed the National Board Dental Hygiene Examination
5. Completion of courses equivalent to: DH 361, DH 370, DH 389, DH 390/391
6. Near completion of UH Mānoa general education courses
7. Interview
8. Certified in the administration of intra-oral anesthesia (including regional blocks)

**Application Period**

December 1 through February 1 for the upcoming fall semester. Students are admitted only during the fall semester.

Transfer applicants from other universities and colleges/schools must complete the UH System Application form and submit the form to UH Mānoa Office of Admissions. Students enrolled as classified day students at UH Mānoa during the semester immediately preceding the semester of desired entry must complete the Curriculum Transfer Request and the Department of Dental Hygiene application forms.

Applicants must submit transcripts, if applicable, and photocopy of grades if enrolled in courses at any community college or other university during the semester immediately preceding the semester of entry to the program.

**Health Certification and Other Requirements**

Prior to enrollment, accepted students must provide evidence of sound health and meet other requirements as follows:

1. CPR Certification (BLS for Healthcare Providers Course);
2. TB Clearance (Department approved);
3. Immunizations for Tetanus/Diptheria/Pertussis (Tdap) and annual Flu vaccine;
4. Laboratory evidence (positive titer) of immunity to Hepatitis B, Mumps, Rubella (Measles), Rubella (German Measles) and Varicella (Chicken Pox);
5. Health insurance; and
6. Malpractice insurance of $1 million per incident/$3 million aggregate

All requirements must be cleared before registration by presenting photocopies of CPR certification, health insurance policy (card), titer results, Health Clearance Form (vaccination record), and TB clearance to the Department of Dental Hygiene. Students with prerequisite deficiencies may not register for or attend laboratory or clinical classes.

Students must take a tuberculosis screen test or chest x-ray as required. Dental hygiene students who have not taken a TB skin test within the last year must take the two-step TB test. CPR certification must be current.

Students are required to have health insurance. Student medical insurance plan information may be obtained through the University Health Services at (808) 956-8965.
Students enrolled in dental hygiene clinical courses have the potential for exposure to communicable diseases and may sustain injuries in the clinical setting. Limited emergency care will be rendered onsite. Students are financially liable for all care received, including emergency room charges.

Note: All certifications and requirements must be kept current for the duration of program enrollment.

Financial Consideration
Significant costs (e.g., professional education fee; purchase of instruments, supplies, uniforms, and books; examination fees, etc.) not related to tuition and housing are associated with dental hygiene education. The estimated additional cost over a period of three years in the dental hygiene program is approximately $14,000, excluding the professional education fee. Students are encouraged to make appropriate financial arrangements.

Note: School of Nursing and Dental Hygiene students pay a higher fee at registration.

Varied Schedules
Dental hygiene students are expected to participate in clinical experiences at various scheduled times. Therefore, students must make time and arrangements to accommodate a modified daily schedule.

Continued Registration
The minimum academic requirements of UH Mānoa apply to all dental hygiene students. In addition, students must maintain a minimum GPA of 2.0 for all registered credit hours in dental hygiene courses to continue registration in the dental hygiene program.

BS in Dental Hygiene
Students must complete the following:
- General Education Core requirements (see the “Undergraduate General Education Requirements” section in the Catalog)
- Pre-major requirements
- Dental Hygiene major requirements
- Other major requirements and electives

General Education Core Requirements
See the Catalog

Pre-Major Requirements
- BIOC 241 Fundamentals of Biochemistry (3)
- COMG 151 Personal and Public Speech (3)
- ENG 100 Composition I (3)
- FSHN 185 The Science of Human Nutrition (3)
- MICR 130 General Microbiology (3) and MICR 140L Microbiology Laboratory (2)
- PHYL 103/103L Human Physiology and Anatomy/Physiology and Anatomy Lab (5/1)
- PSY 100 Survey of Psychology (3)
- SOC 100 Introduction to Sociology (3)

Major Requirements
- DH 231 Oral Anatomy and Tooth Morphology (2)
- DH 231L Oral Anatomy and Tooth Morphology Lab (2)
- DH 238 Basic Dental Hygiene I (2)
- DH 238L Basic Dental Hygiene I Lab (1)
- DH 239L Basic Dental Hygiene I Lab (1)
- DH 240 Basic Dental Hygiene II (2)
- DH 240L Basic Dental Hygiene Lab/Clinic (1)
- DH 241L Basic Dental Hygiene Lab/Clinic (1)
- DH 242L Basic Dental Hygiene Lab/Clinic (1)
- DH 250 General and Oral Histology and Embryology (2)
- DH 251 General and Oral Histology and Embryology (1)
- DH 281 Dental Radiography (2)
- DH 281L Dental Radiography Lab/Clinic (1)
- DH 361 Health Education and Promotion (2)
- DH 366 General and Oral Pathology (2)
- DH 367 General and Oral Pathology (1)
- DH 369 Dental Materials (1)
- DH 369L Dental Materials Lab/Clinic (1)
- DH 370 Expanded Functions in Dental Hygiene (2)
- DH 370L Expanded Functions Lab/Clinic (1)
- DH 375 Clinical Dental Hygiene I (2)
- DH 375L Clinical Dental Hygiene I Clinic (1)
- DH 376L Clinical Dental Hygiene I Clinic (1)
- DH 377L Clinical Dental Hygiene I Clinic (1)
- DH 378L Clinical Dental Hygiene I Clinic (1)
- DH 380 Clinical Dental Hygiene II (2)
- DH 380L Clinical Dental Hygiene II Clinic (1)
- DH 381L Clinical Dental Hygiene II Clinic (1)
- DH 382L Clinical Dental Hygiene II Clinic (1)
- DH 389 Pain Control and Local Anesthesia in Dentistry (2)
- DH 390 Periodontology I (2)
- DH 391 Periodontology II (2)
- DH 473 Community Health (3)
- DH 475 Advanced Clinical Dental Hygiene II (2)
- DH 475L Advanced Clinical Dental Hygiene I Clinic A (1)
- DH 476L Advanced Clinical Dental Hygiene I Clinic B (1)
- DH 477L Advanced Clinical Dental Hygiene I Clinic C (1)
- DH 478L Advanced Clinical Dental Hygiene I Clinic D (1)
- DH 480 Advanced Clinical Dental Hygiene II (2)
- DH 480L Advanced Clinical Dental Hygiene II Clinic (1)
- DH 481L Advanced Clinical Dental Hygiene II Clinic (1)
- DH 482L Advanced Clinical Dental Hygiene II Clinic (1)
- DH 483L Advanced Clinical Dental Hygiene II Clinic (1)
- NURS 363 Introduction to Nursing Research (3)
- PHRM 203 General Pharmacology (3)
- PUBA 301 Health Care Administration (3) (UH-West Oahu)

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/. 
Nursing
Webster 446
2528 McCarthy Mall
Honolulu, HI 96822
Tel:(808) 956-8523
Fax:(808) 956-5296
Web: www.nursing.hawaii.edu

Faculty
*M. Boland, DrPH (Dean)—nursing workforce, health policy
*S. Ziehm, DNP (Associate Dean for Academic Affairs)—psychiatric
mental health, academic program evaluation
*C. Ceria-Uple, PhD (Department Chair)—adult health, administration
*M. Shannon, PhD (Graduate Chair)—women’s health, HIV/AIDS,
vulnerable populations, stress and aging
*C. Albright, Ph.D—cancer prevention and control, obesity control
E. Ben-Sefer, PhD—maternal child
L. Blue, MSN—maternal child health, mental health
L. Boehm, Ph.D(c), MSN—medical/surgical, mental health, critical care
N. Braginsky, PhD—family health
M. Bray, MSN—public health, critical care
P. Brooks, MS—international health, family health
*J. Casken, Ph.D—administration, public health
P. Clements, MS—medical/surgical nursing
*C. Codier, Ph.D—adult health, emotional intelligence in nursing
C. Constantin, Ph.D—maternal child health, genetics
M. Deutsch, MS—maternal-child health, quality management
L. Dubbs, MSN—nursing administration, veteran care
B. Friedman, MS, MBA—community/public health
P. Gandall-Yamamoto, MS—family health
C. Gazmen, MS—adult health
R. Garcia, PhD—medical/surgical nursing
G. Glauberman, MSN—public health, disaster preparedness
C. Greywolf, DNP—geriatrics, mental health, critical care
M. Guerriero, MSN—mental health
F. Hale, MS—maternal-child health, nursing education, psychiatric mental health
V. Hanashiro, PhD—medical/surgical, geriatrics
*A. Hanberg, PhD—simulation learning
M. Hayashi, MS—medical/surgical nursing, maternal-child health
T. Higa, MS—adult health
L. Hildebrandt, MSN—medical/surgical nursing
H. Ho, MSN—maternal child health, medical/surgical nursing
D. Ing, MSN—pediatric nurse practitioner
R. Jarman, PhD—higher education administration and student services
S. Jensen, MSN—medical/surgical nursing, critical care
S. Kam, MSN—medical/surgical nursing
*M. Kataoka-Yahiro, DrPH—parent-child, family caregiving
M. Koury, PhD—educational planning and management
*S. LeVasseur, PhD—nursing workforce, gerontology
*C. Linhares, PhD—maternal child health
*D. Mark, PhD—evidence-based practice, critical care, veteran care
S. Marshall, MS—oncology, administration, military culture
K. Matsuyama, MS—adult health
*G. Mattheus, PhD—pediatrics
J. McDonald, MS—medical/surgical nursing
G. Mikkalson, MSN—women’s health
*J. Miller, EdD—maternal child health
N. Minton, MA—Native Hawaiian cultural enrichment, clinical psychology
J. Misola, PhD—adult health, nursing administration
*J. Mobley, PhD—statistics, psychology
P. Morrison, MS—adult health, nursing education

Emeritus Faculty
J. Inouye, Ph.D—psychiatric mental health, psychology
B. Kooker, DrPH—nursing administration
J. Lum, Ph.D—pediatrics
L. Magnussen, EdD—maternal child
R. Ryburn, DrPH—pediatrics, complementary care

Clinical Faculty
*J. Nishikawa, DNP—family health
*J. Range, MSN—adult health
*K. Richardson, PhD—maternal-child
V. Saunders, MSN—gerontology
W. Siegman, MSN—medical/surgical nursing
S. Sinclair, PhD—pediatrics
*K. Sullivan, PhD—psychiatric mental health
*A. Sy, DrPH—public health
*K. Tessier, PhD—pediatrics
M. Torris-Hedlund, MSN, MPA—community health
*A. Tse, PhD—pediatrics, community based participatory research
*J. Ueyehara, MSN—maternal health
R. Wada, MD—pediatric hematology, oncology
*C. Wang, PhD—adult health
*L. Wong, PhD—adult health

The Nursing Profession
Nursing is a dynamic profession that brings many rewards and career advancement opportunities to those committed to lifelong learning. The nurse is a valuable member of the health-care team and plays a key role in addressing the increasing demand for safe, high quality, and effective healthcare.

UH Mānoa Nursing offers a continuum of academic programs with a rich nursing curriculum enhanced by innovative, technological resources such as the UH Translational Health Science Simulation Center and web-based distance learning. Highly qualified and clinically competent faculty, valuable clinical practicums, endeavors in research and scholarship, and internship and interdisciplinary study opportunities are an integral part of the UH Mānoa Nursing program experience.

The Academic Program
UH Mānoa Nursing offers multiple pathways and degrees to further one’s career goals, whether you are entering the program directly from high school or as a consortium college student, choosing a second career in nursing, or advancing your nursing career with a graduate degree.

The bachelor of science in nursing degree prepares beginning-level generalist professional nurses to deliver care to individuals in a variety of health-care settings, meet the state requirements for eligibility to take the National Council Licen-
sure Examination-Registered Nurse (NCLEX-RN), and obtain a sound basis for graduate study in nursing. (For more information about the NCLEX-RN, please visit the SON DH website: www.nursing.hawaii.edu/licenseandnclex)

The master of science (MS), nursing major degree program prepares the student for advanced practice in advanced public health or in adult-gerontology health as a clinical nurse specialist. The Graduate Entry Program in Nursing (GEPN) admits the student with a bachelor’s degree in non-nursing areas.

The Doctor of Nursing Practice (DNP) program is designed as a professional (practice) doctorate integrating evidence-based practice, quality improvement, and systems leadership to prepare experts in specialized advanced nursing practice.

The PhD in nursing prepares nursing scholars with particular strength in culturally appropriate clinical research aimed at improving the health of people in diverse societies and to teach in nursing education programs, especially those with underrepresented student populations.

Advising
Office of Student Services
Webster 201
Honolulu, HI 96822
Tel: (808) 956-8939
Email: nursing@hawaii.edu

Potential applicants are highly encouraged to review the program documents posted on our website. Pre-advising is available at both the graduate and undergraduate level for information on application procedures, program description, and degree requirement completion.

Distance Education
A variety of technologies are used in distance education including videoconferencing, HITs, web-based methods, or a combination of technologies. The DNP and PhD degree programs are offered online (web-based) with face-to-face intensive sessions once a year.

For further information, contact the school’s Office of Student Services at (808) 956-8939 or nursing@hawaii.edu. All policies and procedures that apply to UH Mānoa students apply to students enrolled in distance learning opportunities.

Accreditation
The baccalaureate degree in nursing, master’s degree in nursing, and Doctor of Nursing Practice program at UH Mānoa are accredited by the Commission on Collegiate Nursing Education (www.aacn.nche.edu/ccne-accreditation). UH Mānoa’s nursing programs are recognized by the Hawai‘i Board of Nursing.

Special Requirements
Nursing students are expected to participate in clinical experiences in many community agencies at variously scheduled times. Therefore, students must make time and transportation arrangements to accommodate an irregular academic schedule.

Students with prerequisite course deficiencies may not register for or attend clinical courses. Students must satisfy the requirements set forth by the clinical agencies; students with course deficiencies may not attend clinical courses.

Criminal Background Checks And Drug Testing
Hospitals and other clinical agencies require a criminal background check and drug testing of students in order to meet their hospital accreditation requirements. The Department of Nursing will not be collecting this information. It is the student’s responsibility to provide this information to the clinical facilities, if requested.

It is the responsibility of the student to satisfactorily complete affiliated hospital background checks and drug testing requirements in accordance with procedures and timelines as prescribed by the affiliated hospital. Nursing students are required to complete UH prescribed academic requirements that involve clinical practice in a UH-affiliated hospital setting with no substitution allowable. Failure of a student to complete the prescribed UH nursing clinical practice in a UH-affiliated hospital shall be deemed as not satisfying nursing academic program requirements.

If the requirements set forth by the hospital are not met by the individual student, the university is not responsible to provide a substitute clinical facility or clinical experience. Therefore, refusal of a hospital or clinical facility to allow a student in their clinical facility due to negative information will result in the inability of the student to continue in the nursing program.

Health Requirements
Upon entrance into the program, students must have all of the following:

1. Health Clearance:
   - Tuberculosis Clearance (annual)
   - Record of immunity to Hepatitis-B, Tetanus/Diphtheria/Pertussis (TdaP), Mumps, Rubeola, Rubella, and Varicella.

Specific programs may require additional clearances. Upon admission, each student will be contacted by the Office of Student Services to discuss the type and schedule of health clearances required for their program.

2. Health insurance

BLS CPR

Upon entrance into the program, students must have Current BLS/Healthcare Provider CPR Certification. Students must have a valid BLS/Healthcare Provider CPR card while in the program and will need to recertify as needed.

For more information regarding any of these special requirements, please visit the SON DH website at http://www.nursing.hawaii.edu/nursingstudentresources.
Undergraduate Study

With the BS degree, the student is prepared for graduate education and continued career development.

The Department of Nursing’s undergraduate program provides five pathways to the bachelor of science degree:

- High School Direct Entry into Nursing (HS-DEN) Program
- Hawaii Statewide Nursing Consortium (HSNC)
- Hawaii Statewide Nursing Consortium (HSNC) for ADN
- Graduates from participating UH Community Colleges
- RN to Bachelor of Science
- Executive RN to Bachelor of Science

The Pre-Nursing designation is available for students planning to pursue program admission and enroll in prerequisite and General Education requirements at UH Mānoa. Academic advisors in the school’s Office of Student Services guide pre-nursing students on courses and review program application requirements to meet the campus’ mandatory advising requirement. The Pre-Nursing designation does not guarantee admission to the nursing program. A separate application and review is required for admission to the bachelor’s nursing program.

Applicants are strongly advised to attend an informational session at the School of Nursing and Dental Hygiene before submitting an application to the program. For more information, please visit the SONDH website at www.nursing.hawaii.edu.

Bachelor’s Degree

The graduate of the BS program is prepared to:

- Advocate and provide high quality care to improve and maintain the health of a diverse society
- Direct, supervise and collaborate with others to organize care
- Advance the profession through lifelong learning, participate in professional organizations and practice in a confident, competent, compassionate and accountable manner
- Develop culturally appropriate clinical knowledge by examining, processing and disseminating knowledge to improve and maintain the health of a diverse society.

UH Mānoa Nursing, together with UH Kapiolani Community College, UH Maui College, and UH Kauai Community College, offer the “Hawai‘i Statewide Nursing Consortium” curriculum as a unified approach to meet Hawai‘i’s need for baccalaureate (BS) registered nurses. The courses were developed to ensure a seamless education pathway to the bachelor’s degree for UH Mānoa students.

High School Direct Entry into Nursing (HS-DEN)–BS in Nursing Pathway

For Hawai‘i high school graduates

This baccalaureate nursing pathway is designed for Hawai‘i high school graduates and provides an opportunity for admission into the nursing program directly after high school graduation. The pathway includes 1 year of pre-nursing course work followed by 3 years of nursing and General Education courses required for graduation. Students who complete the degree are eligible to take the RN licensure examination (NCLEX-RN).

During their freshman year, students join an intensive learning community designed for the HS-DEN pathway. This will ensure proper registration and provides the opportunity to network with current nursing students, the department, and the nursing community. In addition, students enroll in NURS 200 (1 cr) and NURS 201 (1 cr) to fulfill the 2 credit elective requirement.

Upon successful completion of the first year course work, students take the required nursing courses (as detailed under Hawai‘i Statewide Nursing Consortium BS in Nursing Curriculum) along with remaining general education graduation requirements.

Admission Requirements

The program admits Hawai‘i high school students who are eligible for admission to UH Mānoa and meet the UH Mānoa Nursing requirements noted below.

1. Department of Nursing application (available at NursingCAS www.nursingcas.org)
2. SAT: Critical Reading 510 and Math 510 or ACT: Reading 22 and Math 22
3. High school Grade Point Average (GPA): 3.0 cumulative GPA at the end of the junior year in high school.

Application Requirements

Submit a completed UH System application for UH Mānoa and declare NURSING as your major. Submit a Department of Nursing application (available at NursingCAS www.nursingcas.org). For more information, please visit the SONDH website at www.nursing.hawaii.edu.

Application Deadline

January 2 (Fall admission only)

All documents, including the UH System application, must be received by the Office of Student Services no later than the deadline. It is highly recommended that the UH System Application be submitted 4-6 weeks prior to the SONDH deadline in order to allow ample processing time in the Office of Admissions. Applications received after the deadline will not be accepted. For more information, please visit our website at www.nursing.hawaii.edu.

Hawai‘i Statewide Nursing Consortium (HSNC)–BS in Nursing Pathway

For current UH Mānoa and transferring college students without an RN

Students admitted directly to UH Mānoa’s nursing program complete the 3 year nursing curriculum at UH Mānoa.

Required Nursing Courses /Credits

- NURS 210/210L (3/6)
- NURS 211 (2)
- NURS 212 (3)
- NURS 220/220L (3/6)
- NURS 320/320L (4/6)
- NURS 360/360L (3/6)
- NURS 363 (3)
- NURS 450/450L (2/3)
- NURS 452 (3)
- NURS 453 (3)
- NURS 460/460L (4/6)
- NURS 461 (3)
- NURS 465/465L (3/2)
- Approved nursing elective(s) (2)

For the Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.
Admission Requirements
To qualify for admission to the Department of Nursing, applicants must complete the following pre-nursing requirements by the established deadlines:
1. Classified status at UH Mānoa for the application term (unclassified, graduating, new, returning, and transfer students must complete the UH System Application);
2. Minimum cumulative GPA of 3.0 or better;
3. Department of Nursing application (available at NursingCAS www.nursingcas.org);
4. Minimum grade of C (not C-) in the following prerequisite courses**:
   *1 FW course, *1 FS course, *1 FG course, *2 DS courses from different departments, *1 DP course, PHYL 141/141L, PHYL 142/142L, MICR 130.

*Designated by UH Mānoa as General Education courses. These may be found in the "Undergraduate General Education Requirements" section of this Catalog. Students already holding degrees or certificates are not exempt from these requirements.

**16 credits of prerequisites credits must be satisfactorily completed at the time of application, of which MUST include 1 PHYL lecture/lab and MICR 130. Applicants must have completed or are currently enrolled in all remaining prerequisites at the time of application to be considered.
5. For Pre-Admission Exam requirements, see the website at www.nursing.hawaii.edu.

Application Requirements
Submit a completed UH System application for UH Mānoa or be a continuing classified student at UH Mānoa. Submit a Department of Nursing application (available at NursingCAS www.nursingcas.org) to include an electronic copy of your exam scores and current student schedule (non-UH applicants only) demonstrating current registration in any outstanding prerequisite courses. For more information, please visit the SONDH website at www.nursing.hawaii.edu.

Application Deadline
January 5 (Fall admission only)
All documents, including the UH System application, must be received by the Office of Student Services no later than the deadline. It is highly recommended that the UH System Application be submitted 4-6 weeks prior to the SONDH deadline in order to allow ample processing time in the Office of Admissions. Applications received after the deadline will not be accepted. For more information, please visit our website at www.nursing.hawaii.edu.

Hawaii Statewide Nursing Consortium (HSNC)—
BS in Nursing for ADN Graduates from the
Consortium Pathway
For ADN graduates from a UH Consortium Program
The Hawai’i’s Statewide Nursing Consortium (HSNC) Bachelor of Science (BS) in Nursing pathway for associate degree nursing (ADN) graduates is a statewide continuing consortium nursing curriculum available to UH students from Maui College, Kaua‘i Community College, and Kapi‘olani Community College. The HSNC program is designed to provide an efficient pathway to the baccalaureate for the RN with an associate degree. The pathway builds upon initial nursing preparation with coursework to enhance professional development, prepare for a broader scope of practice, and provide an increased understanding of the cultural, economic, and social issues that affect the delivery of safe, quality patient care (American Association of Colleges of Nursing, 2011).

Students admitted to the associate degree nursing programs at Kapiolani, Maui, or Kauai complete prerequisites and 2 years of the nursing curriculum at their home campus. UH Mānoa senior year didactic courses are offered via distance based education, and the clinical courses are offered on Maui and Kauai. Students complete the final year of the nursing curriculum and receive the bachelor’s degree from UH Mānoa.

For further information, contact the Office of Student Services at (808) 956-8939 or visit our website at www.nursing.hawaii.edu.

Required Nursing Courses completed at the participating UH community college
- NURS 210 (9)
- NURS 211 (1)
- NURS 212 (3)
- NURS 220 (10)
- NURS 320 (10)
- NURS 360 (9)
- NURS 362 (1)
- NURS 363 (3)

Year 4 Courses completed at UHM
- NURS 450/450L (2/3)
- NURS 452 (3)
- NURS 453 (3)
- NURS 460/460L (4/6)
- NURS 461 (3)
- Approved nursing electives (6)

For the BS in Nursing for ADN graduates Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/#nursing.

Admission Requirements
To qualify for admission to the Department of Nursing, applicants must complete the following requirements by the established deadlines:
1. Documentation of graduation from associate degree HSNC program;
2. Classified status at UH Mānoa for the application term (unclassified, graduating, new, returning, and transfer students must complete the UH System Application);
3. Minimum cumulative GPA of 2.5 or better;
4. Department of Nursing application (available at NursingCAS www.nursingcas.org);
5. Minimum grade of C (not C-) in the following prerequisite courses:
   *1 FW course, *1 FS course, *2 FG courses from different groups, *2 DA/H/L courses from different groups, *2 DS courses from different departments, *1 DP course, 11 credits of *Natural Sciences, PHRM 203, Statistics, NURS 363.

*Designated by UH Mānoa as General Education courses. These may be found in the "Undergraduate General Education Requirements" section of this Catalog. Students already holding degrees or certificates are not exempt from these requirements.

Application Requirements
Submit a completed UH System application for UH Mānoa or be a continuing classified student at UH Mānoa. Submit a Department of Nursing application (available at NursingCAS www.nursingcas.org). For more information, please visit the SONDH website at www.nursing.hawaii.edu.

Application Deadline
January 5 (Fall admission only)
All documents, including the UH System application, must be received by the Office of Student Services no later than the deadline. It is highly recommended that the UH System Application be submitted 4-6 weeks prior to the SONDH deadline in order to allow ample processing time in the Office of Admissions. Applications received after the deadline will not be accepted. For more information, please visit our website at www.nursing.hawaii.edu.

**RN to BS in Nursing Pathway**

*For non-HSNC ADN or nursing diploma graduates*

The RN to Bachelor of Science (BS) in Nursing pathway for associate degree nursing (ADN) or diploma graduates, is a complement to the statewide HSCN consortium nursing curriculum. It is designed to provide an efficient pathway to the baccalaureate degree. The pathway builds upon initial nursing preparation with course work to enhance professional development, prepare for a broader scope of practice, and provide an increased understanding of the cultural, economic, and social issues that affect the delivery of safe, quality patient care (American Association of Colleges of Nursing, 2011).

Students enter the program in the fall. Maui and Kauai students take didactic course via distance-based education; clinical courses are offered on-site.

Admission to the program requires completion of 44 credits of lower division prerequisite course work. Upon admission, each student will receive a personalized review of completed coursework to create an individualized progression plan. Credit is provided for up to 42 credits of course work completed in the associate degree (35 credits) and other general elective course work (7 credits). A total of 120 credits are required for the baccalaureate degree.

34 credits of upper division nursing course work with a grade of C (not C-) is required for the program. The upper division nursing course work includes two didactic courses that must be completed before beginning clinical course work.

**Required Upper Division Nursing Courses/Credits**

Courses Required Prior to Clinical Coursework

- NURS 301 (3)
- NURS 363 (3)

400-Level Nursing Courses

- NURS 452 (3)
- NURS 453 (3)
- NURS 460/460L (4/6)
- NURS 461 (3)
- NURS 462/462L (3/3)*
- Approved nursing electives (3)

*The student with less than 2 years of work experience as an RN at the time of entry will take NURS 450/450L (2/3), instead of NURS 462/462, and 4 credits of nursing elective(s).

**Admission Requirements**

To be admitted, applicants must complete the following requirements by the established deadlines:

To qualify for admission to the Department of Nursing, applicants must complete the following requirements by the established deadlines:

1. Documentation of graduation from an accredited associate degree or diploma nursing program;
2. Current unrestricted RN license in state or jurisdiction of practice. Applicants who have not passed the NCLEX-RN exam yet must provide evidence of passing the NCLEX-RN exam and have a current RN license in the state or juris-

3. Classified status at UH Mānoa for the application term (unclassified, graduating, new, returning, and transfer students must complete the UH System Application);
4. A GPA of 2.0 or better if transferring from a UH System campus; a GPA of 2.5 or better if transferring from a non-UH System campus;
5. Department of Nursing application (available at NursingCAS www.nursingcas.org);
6. Minimum grade of C (not C-) in the following prerequisite courses:
   - *1 FW course, *1 FS course, *2 FG courses from different groups, *2 DA/H/L courses from different groups, *2 DS courses from different departments, *1 DP course, 11 credits of *Natural Sciences, PHRM 203, Statistics.

*Designated by UH Mānoa as General Education courses. These may be found in the "Undergraduate General Education Requirements" section of this Catalog. Students already holding degrees or certificates are not exempt from these requirements.

**Application Requirements**

Submit a completed UH System application for UH Mānoa or be a continuing classified student at UH Mānoa. Submit a Department of Nursing application (available at NursingCAS www.nursingcas.org) and current student schedule (non-UH applicants only) demonstrating current registration in any outstanding prerequisite courses. For more information, please visit the SON DH website at www.nursing.hawaii.edu.

**Application Deadline**

January 5 (Fall admission only)

All documents, including the UH System application, must be received by the Office of Student Services no later than the deadline. It is highly recommended that the UH System Application be submitted 4-6 weeks prior to the SON DH deadline in order to allow ample processing time in the Office of Admissions. Applications received after the deadline will not be accepted. For more information, please visit our website at www.nursing.hawaii.edu.

**Executive RN to BS in Nursing Pathway**

*For ADN graduates with 2 or more years of RN experience*

The Executive RN to BS is designed to provide an efficient pathway to the baccalaureate for the RN with an associate degree and a minimum of 2 years work experience as an RN. The pathway builds upon initial nursing preparation with course work to enhance professional development, prepare for a broader scope of practice, and provide an increased understanding of the cultural, economic, and social issues that affect the delivery of safe, quality patient care.

The pathway is designed for learners who thrive in a setting with guided independent study, and a collegial relationship with faculty and peer students. Students enter the program in the fall; courses are accelerated and delivered in a hybrid format.

Admission to the program requires completion of 45 credits of lower division prerequisite course work. Upon admission, each student will receive a personalized review of completed coursework to create an individualized progression plan. Credit is provided for up to 35 credits of course work completed in the associate degree and other general elective course work. A total of 120 credits are required for the baccalaureate degree.

40 credits of prerequisites and upper division nursing course work with a grade of C is required for the program. The upper
division nursing course work includes two “prerequisite courses” that must be completed before advancing to clinical course work.

**Required Nursing Courses/Credits**
- NURS 301 (3)*
- NURS 306*
- NURS 363 (3)
- NURS 452 (3)
- NURS 453 (3)
- NURS 460/460L (4/6)**
- NURS 461 (3)
- NURS 462/462L (3/3)**
- Approved nursing electives (6)

*Nursing Prerequisite Courses* (required prior to all other courses)

**An experiential portfolio option is available to students who believe they meet the outcomes of one of these two courses through prior learning and/or professional nursing experience. Through the portfolio process, you may be able to meet course requirements by documenting evidence of your nursing skills and experience. (Note: a credit waiver is available for only one of the content areas)

For information on the Executive RN to BS in Nursing Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/#nursing.

**Admission Requirements**

To qualify for admission to the Department of Nursing, applicants must complete the following requirements by the established deadlines:

1. Documentation of graduation from an accredited associate degree or diploma nursing program;
2. Current unrestricted RN license in the state or jurisdiction of practice;
3. A minimum of 2 years work experience as an RN at the time of application;
4. Classified status at UH Mānoa for the application term (unclassified, graduating, new, returning, and transfer students must complete the UH System Application);
5. A GPA of 2.0 or better if transferring from a UH System campus; a GPA of 2.5 or better if transferring from a non-UH System campus;
6. Department of Nursing application (available at NursingCAS www.nursingcas.org);
7. Minimum grade of C (not C-) in the following prerequisite courses:
   - 1 FW course, *1 FS course, *2 FG courses from different groups, *2 DA/H/L courses from different groups, *2 DS courses from different departments, 7 credits of *Natural Sciences.

*Designated by UH Mānoa as General Education courses. These may be found in the "Undergraduate General Education Requirements" section of this Catalog. Students already holding degrees or certificates are not exempt from these requirements.

**Application Requirements**

Submit a completed UH System application for UH Mānoa or be a continuing classified student at UH Mānoa. Submit a Department of Nursing application (available at NursingCAS www.nursingcas.org) to include a copy of your current RN license and current student schedule (non-UH applicants only) demonstrating current registration in any outstanding prerequisite courses. For more information, please visit the SONDH website at www.nursing.hawaii.edu.

**Application Deadline**

January 5 (Fall Admission only)

All documents, including the UH System application, must be received by the Office of Student Services no later than the deadline. It is highly recommended that the UH System Application be submitted 4-6 weeks prior to the SONDH deadline in order to allow ample processing time in the Office of Admissions. Applications received after the deadline will not be accepted. For more information, please visit our website at www.nursing.hawaii.edu.

**Graduate Study**

UH Mānoa School of Nursing and Dental Hygiene offers graduate nursing education at the master’s and doctoral levels to prepare nurses with advanced skills for the dynamic nursing profession.

UH Mānoa nurses with graduate preparation provide direct and indirect patient care at an advanced level with a focus on the adult, family, geriatric, and public health areas; conduct research; teach; lead health systems; create public policy; and implement evidence-based solutions in healthcare. Nurses with master’s or doctoral degrees impact the systems level design and implementation of care.

Graduate nursing courses are offered in online, face-to-face, and hybrid formats. Programs may be part-time or full-time, depending on the pathway.

**Pathways**

The pathways provide a seamless, accelerated approach to a graduate nursing degree for:

- **Non-nurses with a bachelor’s degree in a field other than nursing:** Graduate Entry Program in Nursing (GEPN) pathway to the MS, DNP, and PhD
- **RNs with a bachelor’s degree in nursing:** MS, DNP, and PhD
- **AD RNs with a bachelor’s degree in a health-related field (non-nursing):** MS, DNP, and PhD
- **RNs with a master’s degree and want to obtain a doctoral degree:** DNP and PhD

**Degrees and Specialties**

The school offers the following degrees and specialty focus areas:

- **Master of Science:** prepares the nurse for an advanced role
  - Adult-Gerontology Clinical Nurse Specialist (CNS)
  - Advanced Public Health Nursing (APHN)
- **Doctor of Nursing Practice (DNP): provides the terminal degree in nursing practice**
  - Adult-Gerontology Primary Care Nurse Practitioner (AG-PCNP)
  - Family Nurse Practitioner (FNP)
  - Nurse Executive Leadership (NEL): A dual option is available with MBA from Shidler College of Business (NEL/MBA)
  - Advanced Nursing Practice
- **PhD in Nursing:** prepares the nurse for a career in research and academic education

For additional information about graduate program offerings, please visit the SONDH website at http://www.nursing.hawaii.edu/graduate

**Graduate Entry Program in Nursing (GEPN)**

The Graduate Entry Program in Nursing is designed for adult learners with no prior nursing experience or education and who have a baccalaureate degree or higher in a field other than nursing. This alternative entry program equips students with
entry-level professional nurse competencies as a foundation for advanced practice roles.

The program consists of a pre-licensure year of study that is delivered across three continuous semesters. Upon completion of the first year, the students will transition into their graduate specialty track and begin courses for their advanced degree.

The first year curriculum is based on a competency model appropriate for graduate level adult learners. Active learning strategies are emphasized including clinical experience and simulation based learning to inform the actions of the nurse. A substantial amount of the curriculum is clinical practicum in community and hospital/health care settings where students are actively engaged in nursing care under the supervision and guidance of faculty. Threaded throughout the curriculum are research, patient safety, community nursing health, and cultural diversity as well as the various contexts (i.e., historical & social) of nursing, nursing roles, and the core values of the profession.

**Program Outcomes**

Upon successful completion of the GEPN pre-licensure year, the student is eligible to take the National Council Licensure Examination–Registered Nurse (NCLEX-RN). Upon passing the NCLEX-RN exam, the student is a licensed registered nurse.

Students immediately transition into their chosen specialty track after successful completion of the pre-licensure year. The post-licensure specialty curriculum prepares students for their chosen role in advanced nursing.

**Admission Requirements**

Applicants must meet the requirements of both the Office of Graduate Education and the Department of Nursing for admission to the program. Admission and application requirements vary by the pathway.

1. **Education: Baccalaureate degree (or higher) in any field from an accredited college or university earned by July 15** of the year admitted to the program.
2. **Minimum grade point average (GPA) of 3.0 or above on a 4.0 scale.**
3. **Pre-requisite courses completed with a grade of C or better:**
   - Two semesters of Human Anatomy and Physiology with lab (completed within 3 years of the start of the GEPN pre-licensure year)
   - One semester of an upper division or graduate level Human Physiology course (completed within 3 years of the start of the GEPN pre-licensure year)
   - One semester of General Microbiology lecture course (lab not required) (completed within 7 years of the start of the GEPN pre-licensure year)
   - One semester of an upper division or graduate level Research course (completed within 7 years of the start of the GEPN pre-licensure year).

Prerequisite courses must be completed by July 15 prior to fall admission. If you are taking courses after your application has been submitted, please send in a copy of the course registration as soon as you have registered.

4. **English Language Proficiency:** If applicant’s native language is not English or has not obtained a bachelor’s or master’s degree from an English speaking college, then the applicant must submit official Test of English a Foreign Language (TOEFL) scores with a minimum score of 600.

5. **Licensure.** By the end of the first semester of the MS, DNP, or PhD Program, GEPN students must submit evidence of having passed the NCLEX-RN exam and an active RN license in the state or jurisdiction of practice. Students who do not take or pass the NCLEX-RN exam may not continue to progress in the specialty courses until the receipt of the RN license.

6. **Additional Requirement for the Nursing Executive Leadership Dual Degree MBA Applicants:** Applicants who wish to apply for a dual degree program with Shidler College of Business MBA must apply concurrently to Shidler College, including scoring at least 750 on the GMAT by July 15 of the year admitted to the program.

**Application Requirements**

Prior to submitting an application, please download and review the important information contained in the complete application instruction packet on the SONDH website (www.nursing.hawaii.edu/graduate/gepn/howtoapply).

1. Office of Graduate Education application and fee (apply.hawaii.edu)
2. NursingCAS 3.0 application and fee (www.nursingcas.org)
3. Resume/CV
4. Two (2) references using the NCAS reference form and an uploaded letter of recommendation
5. YouTube video(s) responding to the questions provided
6. MS and DNP applicants must submit an essay in response to questions provided (500 word maximum)

Applicants to the GEPN to PhD pathway are required to submit the above and:
1. Exemplar of academic writing
2. Statement of research objectives (500 word maximum)

**Application Deadline**

**February 15** (Fall admission only)

The GEPN program uses a rolling admission model. Applications are reviewed upon submission and applicants are notified as decisions are made.

**Contact Information**

GEPN Program
Phone: (808) 956-0445
Fax: (808) 956-5977
Email: gepn@hawaii.edu
Office of Student Services
School of Nursing & Dental Hygiene
University of Hawaii at Manoa
2528 McCarthy Mall, Webster Hall
Honolulu, HI 96822

**RN to MS Program (with non-nursing baccalaureate)**

The RN to MS Program (with non-nursing baccalaureate) is designed for registered nurses (RNs) who are graduates of an accredited associate degree or diploma program and have a baccalaureate degree in an area other than nursing. The admission progression and graduation requirements are the same as the master’s program. In addition all applicants to the MS program in the SONDH must have successfully completed an undergraduate statistics course.

Applicants with a non-nursing baccalaureate should have evidence of baccalaureate level knowledge in research (NURS 363); community, public, and global health (NURS 450); and an integrative clinical practicum and leadership development.
(NURS 460) within the last seven years. Competency in each of the three areas may have been obtained through course work, professional programs, and/or professional or life experience.

The admitted student can petition to waive the course work by submitting an experiential portfolio to demonstrate either coursework or experience in the required areas. Samples of evidence include: resume, transcripts for previous college coursework; course syllabi which outline course descriptions and learning objectives; professional training programs coursework that includes learning objectives. Guidelines for the experiential portfolio are available from the Nursing Office of Student Services.

Admission Requirements

Applicants must meet the requirements of both the Office of Graduate Education and the Department of Nursing for admission to the program. Admission and application requirements vary by the pathway.

Prospective students may apply for admission to the Adult-Gerontology Clinical Nurse Specialist and Advanced Public Health Nursing specialties.

1. Education: Baccalaureate degree (or higher) in any field from an accredited college or university earned by July 15 of the year admitted to the program.
2. Minimum grade point average (GPA) of 3.0 or above on a 4.0 scale.
3. Licensure: Current unrestricted RN license in the state or jurisdiction of practice.
4. English Language Proficiency: If an applicant’s native language is not English or has not obtained a bachelor’s or master’s degree from an English speaking college, then the applicant must submit official Test of English a Foreign Language (TOEFL) scores with a minimum score of 600.

Application Requirements

Prior to submitting an application, please download and review the important information contained in the complete application instruction packet on the SONDH website (www.nursing.hawaii.edu/graduate/ntoms/howtoapply).

1. Office of Graduate Education application and fee (apply.hawaii.edu)
2. NursingCAS 3.0 application and fee (www.nursingcas.org)
3. Resume/CV
4. RN license (see admission requirements)
5. Two (2) references using the NCAS reference form
6. Essay in response to question provided (500 word maximum)
7. One YouTube video responding to the questions provided

Application Deadline

April 1 (Fall admission only)

The RN to MS program uses a rolling admission model. Applications are reviewed upon submission and applicants are notified as decisions are made.

Master’s Degree

The Master of Science (MS) program is designed for registered nurses who seek to expand their knowledge and clinical expertise to assume advanced practice and leadership nursing roles. We offer advanced nursing specialties for:

- Adult-Gerontology Clinical Nurse Specialist (AGCNS)
- Advanced Public Health Nurse (APHN)

The total number of credits required to receive the MS degree is determined by the national standard for each specialty and ranges from 30 to 45 credits. Part-time and full-time study options are available. Faculty provide individual student advising to develop a program of study that facilitates student progression through the program.

Adult-Gerontology Clinical Nurse Specialist

The Adult-Gerontology Clinical Nurse Specialist (AGCNS) Program prepares registered nurses for advanced practice in a wide variety of clinical practice areas. Generally, the practice is focused in a clinical area that may be identified in terms of a setting, diseases, or medical subspecialty (e.g., diabetes, oncology, critical care).

Clinical Nurse Specialists (CNSs) are expert clinicians that work in a wide variety of health care settings. In addition to providing advanced patient care, the CNS improves patient outcomes through research, education, consultation, and program management. Students who enroll in this 42-credit program progress either part-time or full-time, and will meet the standards set forth by the American Nurses Credentialing Center (ANCC). Students will be required to complete 540 hours of clinical practice in order to meet the Adult-Gerontology Clinical Nurse Specialist Competencies and take national certification examinations.

Advanced Public Health Nursing

The Advanced Public Health Nursing (APHN) Program is a distance based master’s in nursing degree for registered nurses who wish to practice in Hawai‘i, the U.S., and international settings. Course work is completed via online learning and fieldwork that is conducted in the student’s own local community. The APHN program focuses on population-level health, wellness, health promotion, and disease prevention. The students learn critical population health skills such as community and population assessment; complex project/program management; global health, disaster nursing, health services research and health policy analysis. The aim of the program is to educate the future leaders for community and public health nursing. The course work pathway requires a minimum of 30 credits to graduate. At the conclusion of the program, the students are awarded a Master of Science degree and are prepared to submit a portfolio for certification in the advanced public health nursing specialty after one year of practice.

Admission Requirements

Applicants must meet the requirements of both the Office of Graduate Education and the Department of Nursing for admission to the program. Admission and application requirements vary by the pathway.

GEPN to MS Pathway

Non-nurses may apply to the Graduate Entry Program in Nursing (GEPN) to MS pathway. Please see the GEPN section above for pathway specific deadlines and requirements.

RN (Associate Degree) to MS Pathway

Associate degree RNs with a baccalaureate degree in another field may apply to the RN to MS pathway. Please see the RN to MS section above for pathway specific deadlines and requirements.

Bachelor’s to MS Pathway

Prospective students may apply for admission to the Adult-Gerontology Clinical Nurse Specialist and Advanced Public Health Nursing specialties.
1. Education: Baccalaureate degree (or higher) in any field from an accredited college or earned by July 15 of the year admitted to the program.
   a. Admission is contingent upon completion of the baccalaureate degree requirements no later than the first day of class of the first semester of master’s coursework.
   b. Minimum grade point average (GPA) of 3.0 or above on a 4.0 scale.
2. Licensure. Current unrestricted RN license in state or jurisdiction of practice. Applicants completing their baccalaureate degree who have not passed the NCLEX-RN exam yet, must provide evidence of passing the NCLEX-RN exam and have a current RN license in the state or jurisdiction of practice by the end of the first semester of the master’s program.
3. Research Course Completion. Successful completion of an undergraduate research course or equivalent within 7 years.
4. English Language Proficiency: If an applicant’s native language is not English or has not obtained a bachelor’s or master’s degree from an English speaking college, then the applicant must submit official Test of English a Foreign Language (TOEFL) scores with a minimum score of 600.

**Application Requirements**

Prior to submitting an application, please download and review the important information contained in the complete application instruction packet on the SONDH website (www.nursing.hawaii.edu/graduate/masters/howtoapply).

1. Office of Graduate Education application and fee (apply.hawaii.edu)
2. NursingCAS 3.0 application and fee (www.nursingcas.org)
3. Resume/CV
4. RN license (see admission requirements)
5. Two (2) references using the NCAS reference form
6. Essay in response to question provided (500 word maximum)
7. One YouTube video responding to the questions provided

**Application Deadline**

**April 1 (Fall admission only)**

The masters program uses a rolling admission model. Applications are reviewed upon submission and applicants are notified as decisions are made.

**Doctor of Nursing Practice (DNP) Degree**

The DNP program is designed as a post-baccalaureate or higher degree program to meet the increasing demand for a highly competent nursing workforce equipped with the skills to ensure the delivery of safe, quality nursing care. The curriculum incorporates the AACN Essentials for Doctoral Education for Advanced Nursing Practice as the foundation for the curriculum, integrating evidence-based practice, quality improvement, and systems leadership to prepare experts in specialized advanced nursing practice.

The DNP is targeted to nurses seeking a terminal degree in nursing practice.

**Program Outcomes**

At the conclusion of the program, the graduate is awarded the Doctor of Nursing Practice degree. The graduate will be competent in the eight Essentials of Doctoral Education for Advanced Nursing Practice (AACN, 2006) for a leadership role in the larger healthcare system. The DNP graduate will be prepared to serve as a leader in clinical and executive positions, translating emerging science and policy directions to improve patient and population-based care delivery.

**Partnership in the Nursing Education Exchange**

UH Mānoa is a member of NEXus (The Nursing Education Exchange). NEXus is a collaboration between participating doctoral programs in nursing that allows doctoral students enrolled at member colleges and universities to take courses that may not be offered at his or her home institution for a common price.

**DNP Specialties**

The school offers the following DNP specialty areas:

- Adult-Gerontology Primary Care Nurse Practitioner (AGPCNP)
- Family Nurse Practitioner (FNP)
- Nurse Executive Leadership (NEL)
- Advanced Nursing Practice

For more information about the specific curriculum for each pathway, please visit the SONDH website at www.nursing.hawaii.edu/graduate/dnp.

The DNP curriculum is incorporated throughout each specialty program so that students can successfully complete the required course work based on the AACN Doctoral Education for Advanced Nursing Practice Essentials to develop and implement the DNP project. The student must complete 1,000 supervised hours to obtain a DNP degree, including the specialty hours.

**Adult-Gerontology Primary Care Nurse Practitioner Specialty**

The Adult-Gerontology Primary Care Nurse Practitioner (AGPCNP) specialty prepares students to provide comprehensive, acute and chronic care services to young, older and elderly adult patients in a variety of community and long-term care settings.

Special emphasis is placed on the delivery of care to vulnerable populations in a changing health system. The program consists of core advanced practice registered nurse courses with specialty courses in adult-gerontology health. The specialty requires 77 credits, including 630 supervised clinical hours. It is a full-time program that cohorts students to support progression to degree in a timely manner.

Graduates of the program are prepared to take national certification exams in the adult-gerontology primary care nurse practitioner specialty area.

**Family Nurse Practitioner Specialty**

The Family Nurse Practitioner (FNP) specialty prepares nurses to meet the primary care needs of individuals and families across the lifespan. Family nurse practitioners provide comprehensive, holistic health care, including a broad range of preventative, acute, and chronic disease services to patients of all ages within the context of family and community.

Special emphasis is placed on the delivery of care to vulnerable populations in a changing health system. The program consists of core advanced practice registered nurse courses with specialty courses in family health. The specialty requires 77 credits, including 630 supervised clinical hours. It is a full-time program that cohorts students to support progression to degree in a timely manner.
Graduates of the program are prepared to take national certification exams in the family nurse practitioner specialty area.

**Nursing Executive Leadership (NEL) Specialty**

The Nursing Executive Leadership specialty provides registered nurses with the knowledge and skill to lead complex integrated healthcare delivery systems. The program provides registered nurses the knowledge and skills to lead in the development of improvements in patient safety and quality of care to ensure clinical and financial outcomes are met. Students complete 71 credits, including 270 hours of supervised practice. It is a full-time program that co-horts students to support progression to degree in a timely manner.

Graduates of the program are prepared to take the American Organization of Nurse Executives (AONE) or American Nurses Credentialing Center (ANCC) national certification exams.

**Nursing Executive Leadership/MBA Specialty**

The Nursing Executive Leadership (NEL)/Master of Business Administration (MBA) is a dual degree program that allows students in the NEL specialty to gain additional knowledge and skills in business. The program requires that the students apply to the Shidler College of Business MBA Program and meet the prerequisites of that program.

After completion of the first year of the program, dual degree students can enroll in the MBA courses. A total of 27 credits are required to complete the business courses.

Alternatively, the dual degree students can complete the DNP course work in its entirety and then enroll in the MBA courses.

**Advanced Nursing Practice**

The program admits licensed RNs possessing a master’s degree in nursing or related field. The program, requiring 36-53 credits, prepares students to serve as leaders in clinical and executive positions within the larger healthcare system, translating emerging science and policy directions to improve patient and population-based care delivery.

**Admission Requirements**

Applicants must meet the requirements of both the Office of Graduate Education and the Department of Nursing for admission to the program. Admission and application requirements vary by the pathway.

**GEPN to DNP Pathway**

Non-nurses may apply to the Graduate Entry Program in Nursing (GEPN) to DNP pathway. Please see the previous GEPN section for pathway specific deadlines and requirements.

**Bachelor’s to DNP Pathway**

Prospective students may apply for admission to the AG-PCNP, FNP, and NEL specialties.

1. Education: Baccalaureate degree (or higher) in any field from an accredited college or university no later than the first day of class of the first semester of DNP course work.
2. Minimum grade point average (GPA) of 3.0 or above on a 4.0 scale.
3. Licensure. Current unrestricted RN license in state or jurisdiction of practice. Applicants completing their baccalaureate degree who have not passed the NCLEX-RN exam yet must provide evidence of passing the NCLEX-RN exam and have a current RN license in the state or jurisdiction of practice by the end of the first semester of the DNP program.
4. English Language Proficiency: If an applicant’s native language is not English or has not obtained a bachelor’s or master’s degree from an English speaking college, then the applicant must submit official Test of English a Foreign Language (TOEFL) scores with a minimum score of 600.

**Master’s to DNP Pathway**

1. Education: Master’s degree (or higher) in any field from an accredited college or university.
   a. Admission is contingent upon completion of the master’s degree requirements no later than the first day of class of the first semester of DNP course work.
   b. Minimum grade point average (GPA) of 3.0 or above on a 4.0 scale.
2. Licensure. Current unrestricted RN license in state or jurisdiction of practice where the DNP project will be conducted.
3. National Certification. Copy of national certifications held, if applicable.
4. English Language Proficiency: If an applicant’s native language is not English or has not obtained a bachelor’s or master’s degree from an English speaking college, then the applicant must submit official Test of English a Foreign Language (TOEFL) scores with a minimum score of 600.
5. Statistics Course Completion. Successful completion of a graduate level statistics course, within seven years of admission, that is at least 3 credits must be completed before the student attends the first summer intensive.

**Application Requirements**

Prior to submitting an application, please download and review the important information contained in the complete application instruction packet on the SONDH website (www.nursing.hawaii.edu/graduate/dnp/howtoapply).

**Bachelor’s to DNP Pathway**

1. Office of Graduate Education application and fee (apply.hawaii.edu)
2. NursingCAS 3.0 application and fee (www.nursingcas.org)
3. Resume/CV
4. RN license, if applicable (see admission requirements)
5. One YouTube video (responding to the questions provided)
6. Essay in response to question provided (500 word maximum)

**Master’s to DNP Pathway**

1. Office of Graduate Education application and fee (apply.hawaii.edu)
2. NursingCAS 3.0 application and fee (www.nursingcas.org)
3. Resume/CV
4. RN license (see admission requirements)
5. One YouTube video (responding to the questions provided)
6. Statement of objectives regarding proposed DNP project (500 words maximum)

**Application Deadline**

**February 1** (Fall admission only)

The DNP program uses a rolling admission model. Applications are reviewed upon submission and applicants are notified as decisions are made.
PhD Degree
The PhD nursing program is designed to prepare visionary scholars with expertise in conducting research to improve the health of culturally diverse populations, especially in Hawai‘i and the Pacific Basin regions and countries. The curriculum provides a strong foundation in research methodologies with each course contributing to the development of the dissertation study. The program is rigorous and requires students to demonstrate strong critical thinking and writing skills that allow them to coherently and logically communicate their course assignments, and their dissertation.

Students can enter the PhD program through one of the following pathways.
- RNs that have a baccalaureate or higher degree in nursing or another field
- Graduate Entry Program in Nursing (GEPN)—non-nurse with a baccalaureate degree in a field other than nursing

Program Outcomes
The goal of the program is to graduate independent nursing scholars capable of conducting research that generates new knowledge focusing on health and well-being of a diverse population primarily from Hawai‘i and the Asia/Pacific region.

Partnership in the Nursing Education Exchange
UH Mānoa is a member of NEXus (The Nursing Education Xchange). NEXus is a collaboration between participating doctoral programs in nursing that allows doctoral students enrolled at member colleges and universities to take courses that may not be offered at his or her home institution for a common price.

Admission Requirements
Applicants must meet the requirements of both the Office of Graduate Education and the Department of Nursing for admission to the program. Admission and application requirements vary by the pathway.

**GEPN to PhD Pathway**
Non-nurses may apply to the Graduate Entry Program in Nursing (GEPN) to PhD pathway. Please see the previous GEPN section for pathway specific deadlines and requirements.

**Bachelor’s to PhD Pathway**
1. Education: Baccalaureate degree (or higher) in any field from an accredited college or university earned by July 15 of the year admitted to the program.
   a. Admission is contingent upon completion of the baccalaureate degree requirements no later than the first day of class of the first semester of PhD coursework.

2. Minimum grade point average (GPA) of 3.0 or above on a 4.0 scale.
3. Licensure. Current unrestricted license in state or jurisdiction of practice. Applicants completing their baccalaureate degree who have not passed the NCLEX-RN exam yet, must provide evidence of passing the NCLEX-RN exam and have a current RN license in the state or jurisdiction of practice by the end of the first semester of the PhD program.
4. English Language Proficiency: If an applicant’s native language is not English or has not obtained a bachelor’s or master’s degree from an English speaking college, then the applicant must submit official Test of English a Foreign Language (TOEFL) scores with a minimum score of 600.

Application Requirements
Prior to submitting an application, please download and review the important information contained in the complete application instruction packet on the SONDH website (www.nursing.hawaii.edu/graduate/phd/howtoapply).

1. Office of Graduate Education application and fee (apply.hawaii.edu)
2. NursingCAS 3.0 application and fee (www.nursingcas.org)
3. Resume/CV
4. RN license (see admission requirements)
5. Statement of research objectives (500 word maximum)
6. Exemplar of academic writing
7. One YouTube video (responding to the questions provided)

Application Deadline
**February 1** (Fall admission only)
The PhD program uses a rolling admission model. Applications are reviewed upon submission and applicants are notified as decisions are made.

Contact Information
**PhD Program**
Phone: (808) 956-8401
Fax: (808) 956-5977
Email: phdnurs@hawaii.edu

**Office of Student Services**
School of Nursing & Dental Hygiene
University of Hawaii at Manoa
2528 McCarthy Mall, Webster Hall
Honolulu, HI 96822

**UH Translational Health Science Simulation Center (UH THSSC)**
Web: hawaiicenterfornursing.org/

Please see the information in the “Instructional Support, Research, and Service Units” section

**Hawai‘i State Center for Nursing**
Web: www.hawaiicenterfornursing.org/

Please see the information in the “Instructional Support, Research, and Service Units” section.
The School of Ocean and Earth Science and Technology (SOEST) was established in 1988. It combines and integrates the Departments of Atmospheric Sciences, Geology and Geophysics, Ocean and Resources Engineering, and Oceanography, as well as the Hawai‘i Institute of Geophysics and Planetology, Hawai‘i Institute of Marine Biology, and the Hawai‘i Natural Energy Institute. The Sea Grant and Space Grant College Programs, Hawai‘i Undersea Research Laboratory, and Joint Institute for Marine and Atmospheric Research, all jointly supported by state and federal funds, are also part of SOEST. In 1997, the International Pacific Research Center was established in SOEST under the U.S.-Japan Common Agenda. The center is jointly supported by the state, Japanese, and federal funds.

Although the Department of Ocean and Resources Engineering offers several undergraduate courses, baccalaureate degrees are not offered in this area. Baccalaureate degree programs are offered in the Department of Atmospheric Sciences and Department of Geology and Geophysics. Those with long-range plans for graduate work in oceanography or ocean and resources engineering should prepare themselves with an undergraduate course of study that will satisfy the entry requirements for admission to these graduate programs. Information on entrance and degree requirements for all SOEST graduate programs (MS and PhD) in geology and geophysics, meteorology, ocean and resources engineering, and oceanography is in this Catalog. Candidates for advanced degrees and the graduate certificate program apply through the Office of Graduate Education of UH Mānoa. The school has developed a number of interdisciplinary courses at both the undergraduate and the graduate levels, which are listed under OEST within the “Courses” section of the Catalog.

Mission

The mission of SOEST is to make UH Mānoa a leading center in ocean and earth science and technology. Scientists and engineers of SOEST intend to understand the subtle and complex interrelations of the seas, the atmosphere, and the Earth in order to learn how to preserve the quality of our lives and to bring to Hawai‘i an enrichment of intellect and culture along with technological advances well suited to the needs of these islands. To that end, the objectives of SOEST are as follows:

1. Enhance educational opportunities in ocean and earth science and technology for the people of Hawai‘i, the nation, and the Pacific Basin;
2. Accelerate the growth of UH Mānoa to preeminence in research and development in ocean and earth science and technology;
3. Build the strength of UH Mānoa for public service and outreach in the Pacific Basin; and
4. Provide a foundation for economic interaction and development of marine-related industries within the State of Hawai‘i.

Degrees

Bachelor’s Degrees: BS in atmospheric sciences, BA in geology (environmental earth science track and earth science education track), BS in geology and geophysics, BS in global environmental science
**Master’s Degrees:** MS in atmospheric sciences, MS in geology and geophysics, MS in marine biology, MS in ocean and resources engineering, MS in oceanography, M GEO in geoscience

**Doctoral Degrees:** PhD in atmospheric sciences, PhD in geology and geophysics, PhD in marine biology, PhD in ocean and resources engineering, PhD in oceanography

**Advising**
Director: Leona M. Anthony
SOEST Student Academic Services
2525 Correa Road, HIG 135
Honolulu HI 96822
Phone: (808) 956-8763
Fax: (808) 956-9987
Email: leona@hawaii.edu
Web: www.soest.hawaii.edu/soest_web/soest.academics.htm

All undergraduate majors in SOEST are assigned to an advisor in their major upon admission into the school. Mandatory advising for all majors takes place every semester prior to the next semester’s registration. All students are encouraged to regularly meet with their advisors throughout each semester to discuss their educational and personal goals and to formulate an academic plan to attain those goals.

Program goals: To create and develop a teaching-learning relationship between the advisor/advisee to implement the advisee’s educational plan toward his or her intended degree.

Advising mission: SOEST values and promotes collaborative relations between academic advisors, faculty advisors, and students to implement a personal education plan that is consistent with the student’s goal.

**Undergraduate Programs**
Application to the following programs are accepted by the Admissions Office: the BA in geology, the BS in geology and geophysics, the BS in global environmental science, and the BS in meteorology.

**School Requirements**
1. Completion of basic course work as specified by their degree programs;
2. Completion of requirements for the major;
3. Completion of 45 upper division credit hours (courses numbered 300 and above);
4. GPA of 2.0 (C average) for all UH Mānoa registered credits;
5. GPA of 2.0 (C average) for all courses applied to the major requirements;
6. Completion of a degree audit (Graduation Worksheet) to the Student Academic Services Office at least two semesters preceding the award of the degree;
7. Completion of an application for graduation to the Student Academic Services Office in the semester preceding the award of the degree; and
8. Completion of an exit interview by the Student Academic Services Office.

**Bachelor of Arts and Bachelor of Science Degrees Requirements**
1. Courses required by UH Mānoa Undergraduate General Education Requirements; and
2. Support science requirements from mathematics, chemistry, and physics vary with degree programs and all courses may have prerequisites.

Note that introductory chemistry and mathematics courses have placement exams.

Students who have not completed a high school course equivalent to pre-calculus should take MATH 140 during the summer session prior to their first semester. All BA and BS degree candidates should consult with the departmental advisor before registering.

**Major Requirements**
See appropriate departments for specific major requirements leading to a bachelor of arts or a bachelor of science degree.

**Graduate Programs**
See appropriate departments for specific major requirements leading to MS and PhD degrees.

**Instructional and Research Facilities**

**Hawai’i Institute of Geophysics and Planetology**
The Hawai’i Institute of Geophysics and Planetology (HIGP) conducts geological, geochemical, geophysical, oceanographic, acoustic, and atmospheric research, as well as remote sensing research, in Earth, space (includes moons, comets, and asteroids), and marine sciences. Programs embrace research and advanced training in marine geology and geophysics, small satellite development and launch, infrasound, materials science and high-pressure mineral geophysics, evolution of the Solar System, seismology and solid Earth geophysics, planetary geology, meteoritics, volcanology, rock magnetism, geodetics, and petrology. The institute maintains various specialized facilities in support of its research endeavors such as a secondary ion mass spectrometry lab and advanced electron microscopy lab and has a number of instrument development programs, including the Hawai’i Mapping Research Group who build and operate advanced sonars for seafloor mapping. Other instrument development programs include hyperspectral imagers, Raman spectrometers, and small satellites. HIGP includes the Hawai’i Space Grant Consortium, which runs a wide variety of education and fellowship programs at the K-12, undergraduate, and professional levels in the form of workforce development and also provides outreach to the Hawai’i community. HIGP is also the home of the Pacific Regional Planetary Data Center, and maintains several websites for the community, including “Planetary Science Research Discoveries” and the “Hawai’i MODVOLC Near Real-time Thermal Monitoring of Global Hot-spots.”

**Hawai’i Institute of Marine Biology**
The Hawai’i Institute of Marine Biology (HIMB) was established on the island of Moku O Lo’e in 1965 when its name was changed from the Hawai’i Marine Laboratory. The institute is responsible for providing leadership and support for studies in the marine environment, particularly coral reefs. It provides facilities and services for faculty members, graduate and undergraduate students, and visiting scholars for research and education in marine biology and related topics. The core faculty, plus many from other UH departments, study the life processes of marine organisms including plants, animals, and microbes. Research at HIMB covers a broad range of topics including coral reef biology and ecology, the behavior, physiology and sensory systems of marine mammals, tropical aquaculture, the behavior of reef fish, shark ecology and sensory systems, fish endocrinology, pollution and management of marine ecosys-
tems, coastal biogeochemical processes, fisheries, and bioengineering and genetics.

HIMB is unique in that it has modern molecular biology laboratories and immediate access to the reef, Kāne‘ohe Bay, and deep ocean waters. It is located on Moku O Lo‘e (Coconut Island) in Kāne‘ohe Bay (on the east coast of O‘ahu), providing a unique setting for graduate-level topics courses and field-trip demonstration opportunities. Kāne‘ohe Bay has many healthy coral reefs. The 28 acre island, located within a 30 minute drive distance from UH Mānoa campus, is surrounded by a 64 acre coral reef dedicated to scientific research. Facilities at the marine laboratory include research vessels and skiffs, protected harbors, a pelagic fish laboratory; Hawaiian fish ponds, aquaria and tanks; a flow-through seawater system; remote environmental monitoring capabilities; reef microcosm systems; a wide array of computerized analytical and acoustic equipment; a floating marine mammal research complex; a functional genomics facility; and the Barbara Pauley Pagen Library and classrooms.

**Hawai‘i Natural Energy Institute**

The Hawai‘i Natural Energy Institute (HNEI) was established by the Legislature in 1974 to develop renewable energy resources and technologies to reduce the state’s dependence on fossil fuels, was given a broader mandate by the Hawai‘i Legislature (ACT 253 in 2006) to also demonstrate and deploy efficient energy end-use technologies and to coordinate closely with the state’s energy resource coordinator. Today, with funding from state and federal agencies as well as industry, HNEI conducts basic and applied research on a wide range of topics to address society’s critical energy and environmental problems. Current research includes hydrogen fuel cells, ocean energy and resources, fuels and high value products derived from biomass, photovoltaics, and batteries and electric vehicles. The institute conducts studies and assessments to support policy development and conducts testing and evaluation of emerging energy generation, grid enabling, and energy efficiency technologies. Many of these activities are conducted under public/private partnerships managed by the institute, with the goal of supporting increased penetration of renewable technologies onto the electrical grid systems.

**Hawai‘i Space Grant Consortium**

The Hawai‘i Space Grant Consortium (HSGC) is a wide-ranging community educational program supported by the National Aeronautics and Space Administration (NASA) that promotes studies in scientific fields related to space. These fields include astronomy, geology, meteorology, oceanography, mathematics, physics, engineering, computer science, and life sciences. Affiliate campuses are UH Hilo, all seven community colleges within the UH System, and the University of Guam. Some of the programs supported by Space Grant include undergraduate fellowship and traineeship programs (approximately 10-20 students per semester are supported); the Future Flight Program for teachers, school students, and their parents; teacher workshops; undergraduate remote-sensing classes; an undergraduate telescope classes facility; a CanSat project geared for community college students to create a satellite similar to UH Mānoa’s own CubeSat project; an undergraduate internship program awarded for students to participate in Science, Technology, Engineering, and Mathematics (STEM) related research at local businesses; and outreach to state and federal agencies related to the use of satellite and aircraft remote-sensing data. A significant goal of the program is to encourage interdisciplinary studies and research, and to train future generations of space scientists and engineers. Students, teachers, and researchers in Hawai‘i are encouraged to contact the UH Mānoa HSGC office at (808) 956-3138 to learn more about the opportunities.

**Hawai‘i Undersea Research Laboratory**

The Hawai‘i Undersea Research Laboratory (HURL) was established in 1980 by a cooperative agreement between the National Oceanic and Atmospheric Administration (NOAA) and the UH. HURL was one of six National Undersea Research Centers sponsored by NOAA’s National Undersea Research Program (NURP). HURL operates the Pisces IV and Pisces V research submersibles to conduct marine research to oceanic depths of 2,000 meters. These underwater vehicles are operated from HURL’s dedicated support ship, the 222-foot R/V Ka‘imikai-o-Kanaloa. Extensive data archives are available to the scientific and academic community for biology, geology and marine chemistry research from submersible dives dating back to 1980. Principal research projects conducted are those aligned with the mission of NOAA.

**International Pacific Research Center**

The International Pacific Research Center was established in 1997 under the U.S.-Japan Common Agenda for Cooperation in Global Perspective. Its mission is to provide an international, state-of-the-art research environment to improve understanding of the nature and predictability of climate variability in the Asia-Pacific sector, including regional aspects of global environmental change.

**Joint Institute for Marine and Atmospheric Research**

The Joint Institute for Marine and Atmospheric Research (JIMAR) was created in 1977 through a Memorandum of Understanding between the National Oceanic and Atmospheric Administration (NOAA) and UH Mānoa to conduct research of mutual interest. The principal research interests of JIMAR are ecosystem forecasting, ecosystem monitoring, ecosystem-based management, protection and restoration of resources, equatorial oceanography, climate research and impacts, tropical meteorology, and tsunamis and other long-period ocean waves.

**Sea Grant College Program**

The University of Hawai‘i Sea Grant College Program (UH Sea Grant) supports an innovative program of research, education, and outreach services directed to the improved understanding and stewardship of marine and coastal resources of
the state, region, and nation. UH Sea Grant is a partnership of UH Mānoa, the National Oceanic and Atmospheric Administration, and the State of Hawai‘i that is facilitated by strong linkages with 32 Sea Grant programs across the nation and affiliations throughout the Pacific.

UH Sea Grant research currently focuses on promoting coastal community sustainability, sustainable aquaculture, marine biotechnology, ecosystem-based use of nearshore resources and habitats, sustainable tourism, coastal water quality, and resilience to natural hazards. Knowledge is disseminated to policy makers, marine agencies, the marine industry, and the general public through UH Sea Grant’s extension faculty, outreach activities, and communications program. UH Sea Grant supports educational activities that include K-12 through graduate and postgraduate and professional training. Human resources are built in part through internships, traineeships, and fellowships. The overall goal is to develop knowledge and the will to build Hawai‘i’s economy and protect its habitats and resources through UH Mānoa’s excellence and our cultural heritage.

Atmospheric Sciences (formerly Meteorology)
HIG 350
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Faculty
*G. M. Barnes, PhD (Chair)—convection, hurricanes, and boundary layer meteorology
*Y. L. Chen, PhD (Graduate Chair)—mesoscale meteorology, heavy rainfall
*M. M. Bell, PhD (Undergraduate Advisor)—radar meteorology, tropical cyclones, and mesoscale meteorology
*S. Businger, PhD (Undergraduate Advisor)—mesoscale and synoptic meteorology, satellite meteorology, storm structure and dynamics
*J. D. Griswold, PhD (Undergraduate Advisor)—satellite remote sensing of clouds and aerosol, cloud microphysics, aerosols and climate meteorology
*P. S. Chu, PhD—climate variability and natural hazards, tropical cyclones, climate prediction
*F. F. Jin, PhD—atmospheric dynamics, climate dynamics
*T. Li, PhD—climate dynamics and coupled atmosphere-ocean modeling
*D. E. Stevens, PhD—atmospheric dynamics
*B. Wang, PhD—climate dynamics, geophysical fluid dynamics, and tropical meteorology
*Y. Wang, PhD—atmospheric dynamics and physics, climate modeling, tropical meteorology
*J. Zhao, PhD—atmospheric chemistry and aerosols

Degrees Offered: BS (including minor) in atmospheric sciences, MS in atmospheric sciences, PhD in atmospheric sciences

The Academic Program
Atmospheric Sciences (MET) (ATMO effective Spring 2015) is the study of phenomena in the Earth’s atmosphere. These phenomena include both weather and climate. Students pursu-
1. At least 18 credits of regular course work (i.e., excluding
This will be made up of:

- Master's Degree

late applications for either semester will be considered.

- Graduate applicants and U.S. applicants. In special circumstances,
  the deadline for spring semester is

- 28

the first year. The application for fall semester is due

- September 30

synoptic meteorology are expected, but they can be taken in

- undergraduate courses in physical, dynamic, and
  thermodynamics to understand weather and climate issues.

- vorticity to understand weather and climate problems.

- 3. 9 additional credits of regular MET/ATMO course work in

- 400-level undergraduate courses and graduate courses (600-
  and 700-level). Regarding undergraduate courses, we expect
  that students without a U.S. major in atmospheric sciences
  may want to take the advanced dynamics course (MET/ATMO 402)
  and one or both of the forecasting courses (MET/ATMO 412, 416).

- 4. 2 credits of MET/ATMO 699 Directed Research/Reading.

- These 2 credits with a written term paper, along with MET/ATMO 402) and one or both of the forecasting courses

- 5. Our core requirements include MET/ATMO 600, 610, 620 and one term of forecasting (MET/ATMO 412 or 416), unless
  a student has completed an equivalent synoptic meteorology
  course elsewhere with at least a B-.

- Students must obtain a minimum GPA of 3.0 for the courses
  counted as our core (MET/ATMO 600, 610, and 620, plus one
  of MET/ATMO 412 or 416, if that is taken by the student).

- As well, students must maintain a GPA of at least 3.0 for the
  courses they take in the MS program.

**Plan B: Non-Thesis Option Requirements**

Graduation requirements for a master’s degree Plan B emphasize a greater number of graduate level courses, but no thesis.

A total of 30 official MET/ATMO course credit hours must be earned, which will be made up of the following:

1. At least 18 credits of regular course work (i.e., excluding

- MET/ATMO 699, 700 and 765), in courses numbered 600 and above.

- 1 credit of MET/ATMO 765

- 3. 6 credits of MET/ATMO 700 Thesis Research and

- 5. 5 more credits either from regular courses or MET/ATMO 699

**Directed Research**

Our core requirements include MET/ATMO 600, 610, 620 and one term of forecasting (MET/ATMO 412 or 416), unless

- a student has completed an equivalent course elsewhere, the forecasting

- laboratory requirement is met with either MET/ATMO 412 or 416. These core requirements are met by passing with a
  grade of B- or higher. Other graduate and undergraduate

- credits may be taken in other fields and applied to the degree

- program (requirements 1 and 3 above).

- There is neither a general exam nor a final exam for Plan B.

- Students must obtain a minimum GPA of 3.0 for the courses
  counted as our core. As well, students must maintain a GPA of
  at least 3.0 for all the courses applied to the MS program.

- MS Plan B candidates must be enrolled during the term in
  which they complete the requirements for the degree; regular
  course work or MET/ATMO 500 (Master’s Plan B Studies)

- may be used to meet this requirement. MET/ATMO 500 is of

- offer as a 1-credit course with a mandatory grading of S/NG but

- carry credit toward meeting degree requirements.

**Doctoral Degree**

The PhD student exhibits a higher level of independence and

- originality of thought than that required of the MS student.

**Requirements**

Students must satisfy several requirements in order to

- graduate with a PhD degree. Each student is required to pass
  at least 8 courses with 6 of those numbered 600 and above.
with a grade of B- or higher. These courses will be in dynamic, synoptic, physical, tropical meteorology, oceanography, or other closely related fields. At the discretion of the graduate chair, a student must be awarded credit for up to 3 relevant graduate courses taken elsewhere, therefore a minimum of 5 courses must be completed at UH Mānoa. The courses taken either here or elsewhere need to cover the core requirements MET/ATMO 600, 610, 620 and one of 412 or 416. A student must pass each of these core courses with a grade of at least B-. A student must obtain a minimum 3.0 GPA in the core courses taken at UH Mānoa. A student must also maintain a GPA of at least 3.0 for all the courses taken in the PhD program at UH Mānoa.

No later than the 24th month in the PhD program, each student must pass a two-part comprehensive examination. The purpose of this exam is to ascertain the student’s comprehension of the broad field of atmospheric sciences and so to insure that the student is well prepared for PhD research. The first part of the comprehensive examination is a set of written exercises completed on a single day. Within 3 to 7 days after the written exam, the student sits for the oral portion with his or her committee. No later than 12 months after successful completion of the comprehensive examination, each student is required to submit a written research prospectus for approval to his or her dissertation committee.

A PhD student must also successfully complete two semesters of MET/ATMO 765 during his or her PhD studies (MET/ATMO 765 taken before the student was admitted to the PhD program cannot be counted towards satisfying this requirement).

Finally, the student must complete an acceptable PhD thesis and successfully defend it in a public final oral defense.

Geology and Geophysics

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Email: gg-dept@soest.hawaii.edu
Web: www.soest.hawaii.edu/GG

Faculty
*K. H. Rubin, PhD (Chair)—geochemistry, environmental chemistry, volcanology
*G. T. Apuzen-Ito, PhD—marine geophysics and geodynamics
*J. M. Becker, PhD—geophysical fluid dynamics
*C. P. Conrad, PhD—geodynamics, marine geophysics
*H. Dulaiova, PhD—coastal hydrology and geochemistry
*R. A. Dunn, PhD—marine geophysics
*A. I. El-Kadi, PhD—groundwater and watershed hydrology
*C. H. Fletcher, PhD—coastal geology
*L. N. Frazer, PhD—geophysics
*E. J. Gaidos, PhD—geobiology, planetary science
*M. O. Garcia, PhD—igneous petrology, volcanology
*C. R. Glenn, PhD—coastal groundwater, environmental geochemistry, marine sediments
*[J. E. Hammer, PhD—physical volcanology
*E. W. Hellebrand, PhD—igneous petrology
*B. F. Houghton, PhD—physical volcanology
*A. H. Jahren, PhD—geobiology, environmental science
*K. T. M. Johnson, PhD—geochemistry, petrology, marine geology

*J. G. Konter, PhD—solid earth geochemistry, volcano petrology
*S. J. Martel, PhD—engineering geology, structural geology, geomechanics
*C. Miller, PhD—isotope geochemistry
*G. F. Moore, PhD—exploration seismology, tectonics
*B. N. Popp, PhD—isotopic biogeochemistry
*G. E. Ravizza, PhD—paleoceanography
*S. K. Rowland, PhD—volcanology, Hawaiian geology
*K. Ruttenberg, PhD—biogeochemistry, geochemistry
*T. Shea, PhD—physical volcanology
*B. R. Smith-Konter, PhD—geophysics
*S. M. Stanley, PhD—paleobiology, geobiology
*B. Taylor, PhD—plate tectonics, geology of ocean margin basins
*P. Wessel, PhD—plate tectonics, marine geophysics

Cooperating Graduate Faculty
R. Butler, PhD—seismology
E. H. DeCarlo, PhD—marine geochemistry, marine resources
P. Dera, PhD—mineral physics, mineralogy, petrology, crystallography
M. H. Edwards, PhD—marine geology and geophysics
P. Englerr, PhD—nuclear and planetary science, cosmochemistry
S. A. Fangents, PhD—planetary volcanology
L. Flynn, PhD—remote sensing of fires and volcanoes
J. Foster, PhD—marine, volcano, and tectonic geodesy, GPS meteorology
P. B. Fryer, PhD—marine geology, petrology, tectonics
M. A. Garcés, PhD—infrasound, wave propagation, volcanology
J. Gillis-Davis, PhD—planetary geosciences, remote sensing
E. Herrero-Bervera, PhD—paleomagnetism, geomagnetism
R. N. Hey, PhD—marine geophysics and tectonics
G. R. Hess, PhD—cosmochemistry, early solar system chronology
P. Isaacson, PhD—planetary geosciences, remote sensing
K. Keil, DrRerNat.—meteories, planetary geosciences
A. N. Krot, PhD—meteories, planetary geosciences
N. Lauerz, PhD—water and geothermal resources; physical volcanology
B. R. Lieneret, PhD—geophysics
P. G. Lucey, PhD—planetary geosciences
M. H. Manghanni, PhD—high-pressure geophysics, mineral physics
F. Martinez, PhD—marine geophysics
F. W. McCoy, PhD—marine geology, sedimentology
A. Misra, PhD—LIBS and fluorescence, material science
P. J. Mouginis-Mark, PhD—planetary science, remote sensing
K. Nagashima, PhD—ion microprobe analysis, cosmochemistry
K. Ruttenberg, PhD—biogeochemistry
J. E. Schoonmaker, PhD—marine geology and geochrology
N. Schörghero, PhD—permafrost, planetary surfaces
E. R. D. Scott, PhD—planetary geosciences
S. K. Sharma, PhD—Raman and IR spectroscopy in geochemistry
G. J. Taylor, PhD—planetary geosciences
R. Wright, PhD—volcanology

Affiliate Graduate Faculty
C. Blay, PhD—sedimentology, Hawaiian geology
B. A. Brooks, PhD—geodetic, GPS
R.J. Carey, PhD—physical volcanology
A. Greene, PhD—geochemistry
C. Gregg, PhD—volcanology
K. Inn, PhD—radiochemical calibrations
V. Keener, PhD—climate, hydrological systems
F. Mackenzie, PhD—sedimentary geochemistry, sedimentology
D. Oki, PhD—hydrology
A. Pietruszka, PhD—geochemistry
M. Reid, PhD—hydrogeology
K. Rotzoll, PhD—groundwater, hydrogeology
T. Sale, PhD—hydrology
B. Schmitz, PhD—geochemistry, astronomy
D. A. Swanson, PhD—volcanology
T. Thordarson, PhD—volcanology

*Graduate Faculty
F. A. Trusdell, PhD—volcanology, Hawaiian geology
D. Weis, PhD—geochemistry, volcanology
C. J. Wolfe, PhD—seismology, marine geophysics

**Degrees Offered:** BA in geology, BS in geology and geophysics, Master of Geoscience for Professionals (MGeo), MS in geology and geophysics, PhD in geology and geophysics

**The Academic Program**

The Department of Geology and Geophysics (GG) is centered around the scientific study of the exterior and interior of the Earth and other planetary bodies. Sub-disciplines within GG are many, and offer rich opportunities for multidisciplinary study of problems of great intellectual and practical importance. Coastal geologists study processes such as sedimentation and beach erosion, reef growth and degradation, and sea level change. Hydrologists and Hydrogeochemists study the cycling of fresh water between the atmosphere, land, and ocean. Of particular emphasis is how climate change impacts this cycle; how fresh water supplies are impacted by human activities, including land-use practices and the introduction of contaminants into surface and groundwater; how climate, hydrologic, and terrestrial processes impact the ocean and its ecosystems by way of surface water and submarine groundwater discharge. Structural geologists study the physical features in rock units with respect to stress and deformation related to processes such as mountain building, rifting, and earthquakes. Engineering geologists provide geotechnical recommendations affecting the design, construction, and operation of engineering activities, based on geologic factors such as material properties, landslides and slope stability, erosion, and flooding. Mineralogists and petrologists examine the temperature, pressure, and environmental conditions that influence the formation of minerals and rocks. Geochemists specialize in the chemistry of Earth materials for gaining knowledge about a huge range of aspects including the make-up of the deep earth, the formation of the seafloor, the origin of volcanoes, as well as past and present changes in Earth’s climate, ocean environment, and life. Volcanologists study how gas, fluid, and magma interact to create different types of volcanic eruptions, and address hazard remediation. Geophysicists use seismology, potential fields, sonar, radar, and GPS for studying earthquakes, Earth’s surface and internal structure, land deformation, and plate tectonics. They also use mathematics, continuum mechanics, and high performance computing for studying Earth and planetary processes. Planetary scientists examine how the Earth and Solar System formed, study active processes on planetary bodies, search for extrasolar planets, and explore planetary processes.

**BA in Geology**

**Requirements**

The BA degree in geology is appropriate for students interested in Earth science but not necessarily intending to pursue graduate school. It is more flexible than the BS program and has two tracks, Environmental Earth Science and Earth Science Education. The BA degree requires completion of 120 credit hours of course work, the equivalent of four years of full-time study.

**BA in Geology, Environmental Earth Science Track**

The Environmental Earth Science track is geared toward students who plan to enter the environmental and geotechnical fields upon graduation. It includes a combination of traditional geology topics such as field methods and sedimentology, as well as more applied topics such as hydrogeology, geospatial information, and environmental geochemistry.

This BA track requires 27 credits in the geology and geophysics curriculum. This includes one introductory level GG course with a lab, seven non-introductory GG courses, a two-credit research seminar, and at least 15 credits of approved upper division electives in GG or other departments. With the advice and consent of an undergraduate advisor, courses in other natural sciences, mathematics, or engineering may be substituted as electives. A mainland summer field course is an elective that students who plan to enter the environmental and geotechnical fields upon graduation. It includes a combination of traditional geology topics such as field methods and sedimentology, as well as more applied topics such as hydrogeology, geospatial information, and environmental geochemistry.

This BA track requires 27 credits in the geology and geophysics curriculum. This includes one introductory level GG course with a lab, seven non-introductory GG courses, a two-credit research seminar, and at least 15 credits of approved upper division electives in GG or other departments. With the advice and consent of an undergraduate advisor, courses in other natural sciences, mathematics, or engineering may be substituted as electives. A mainland summer field course is an elective that students who plan to enter the environmental and geotechnical fields upon graduation. It includes a combination of traditional geology topics such as field methods and sedimentology, as well as more applied topics such as hydrogeology, geospatial information, and environmental geochemistry.

Students graduate from the Department of Geology and Geophysics (GG) with an in-depth understanding of the relevance of the geosciences to society, especially Hawai’i and Pacific islands, as well as the ways human civilization impacts the Earth and environment. Students are able to use basic skills in math, physics, chemistry, and biology as well as technical knowledge in computer applications, laboratory methods, and field techniques for solving real-work problems in the geosciences. Graduates know how to ethically apply the scientific method, and can use basic principles in geoscience for explaining natural phenomenon. GG graduates develop proficiency in communicating their knowledge in oral presentations and in writing professional documents. As a result, GG majors are widely successful in obtaining jobs in fields within or closely related to the geosciences. These fields include environmental assessment and remediation; engineering; geotechnical consulting; oil, natural gas and mineral resources; water resource management; science education; as well as applied and basic research.

**Undergraduate Study**

**Advising**

Students contemplating a major or minor in geology and geophysics should contact the Director of Student Services for SOEST in HIG 135 (808) 956-8763. There are two undergraduate advisors who may be contacted through the department office (808) 956-7640, ggddept@soest.hawaii.edu. Graduate students are appointed a faculty advisor upon admittance into the program.
Geology and Geophysics and Other Courses
- Required Courses (27 credits)
  - GG 101 Dynamic Earth (3), or GG 102 Introduction to Global Change (3), or 103 Geology of the Hawaiian Islands (3), or GG 104 Volcanoes in the Sea (3), or GG 106 Humans and the Environment (3), or GG 130 Geologic Hazards, or GG 170 Physical Geology (4)
  - GG 101L Dynamic Earth Laboratory (1) (unless GG 170 is taken)
  - GG 200 Geological Inquiry (4)
  - GG 250 Scientific Programming (3)
  - GG 305 Geological Field Methods (3)
  - GG 309 Sedimentology and Stratigraphy (4)
  - GG 325 Geochemistry (3), or GG 425 Environmental Geochemistry (3)
  - GG 410 Undergraduate Seminar (2)
  - GG 455 Hydrogeology (4)
  - GG 461 Geospatial Information (3)
- Lower Division Science Electives
  - GG 250 Scientific Programming (3)
- Upper Division Science Electives (12 credits) See list of courses at www.soest.hawaii.edu/GG/academics/gg_academics.html.
- Required Support Courses (23-24 credits)
  - General Chemistry (CHEM 161, 161L, 162, 162L)
  - Calculus I (MATH 215 or 241)
  - College Physics (PHYS 151, 151L, 152, 152L)
  - Biological Sciences (BIOI 171, or BOT 101, or BOT 105 or ZOOL 101, or MICR 130)

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

BA in Geology, Earth Science Education

Requirements
The Earth Science Education track is for students who want to become top-quality middle school and high school Earth Science teachers. The curriculum includes all required topical course work for Earth Sciences certification by the Hawai‘i State Department of Education, including courses in meteorology and oceanography. If students in the Earth Science Education pathway enroll in the College of Education’s Post-Baccalaureate certificate program after they earn the BA, they will be certified as Earth Science teachers in Hawai‘i.

This BA track requires 39 credits in the geology and geophysics, oceanography, and meteorology/atmospheric sciences curriculum, including introductory level GG and MET/ATMO courses with labs, seven non-introductory GG, MET/ATMO, and OCN courses, a two-credit research seminar, an upper-division teacher education course, and at least 30 credits of approved upper division electives. With the advice and consent of an undergraduate advisor, courses in other natural sciences, mathematics, or engineering may be substituted as electives. A mainland summer field course is an elective that students are strongly encouraged to take. Required support classes include physics, chemistry, biological sciences, and one semester of college calculus; these total 23-24 credits and should be taken as early as possible. A minimum grade of C (not C-) must be achieved in all major and support classes.

Geology and Geophysics and Other Courses
- Required Courses (39 credits)
  - GG 101 Dynamic Earth (3), or GG 102 Introduction to Global Change (3), or 103 Geology of the Hawaiian Islands (3), or GG104 Volcanoes in the Sea (3), or GG 106 Humans and the Environment (3), or GG130 Geologic Hazards, or GG 170 Physical Geology (4)
- GG 101L Dynamic Earth Laboratory (1) (unless GG 170 is taken)
- MET/ATMO 101/101L Introduction to Meteorology/Lab (4)
- GG 105 Voyage through the Solar System (3) or ASTR 110 Survey of Astronomy (3)
- GG 200 Geological Inquiry (4)
- MET/ATMO 200 Atmospheric Processes and Phenomena (3)
- OCN 201, 211L Science of the Sea (4)
- GG 300 Volcanology (3)
- GG 305 Geological Field Methods (3)
- OCN 310 Global Environmental Change (3)
- GG 406 Natural Disasters (3)
- ITE 401 Engaging the Adolescent Learner (3)
- GG 410 Undergraduate Seminar (2)
- Upper Division Science Electives (5 credits) See list of courses at www.soest.hawaii.edu/GG/academics/gg_academics.html.
- Required Support Courses (23-24 credits)
  - General Chemistry (CHEM 161, 161L, 162, 162L)
  - Calculus I (MATH 215 or 241)
  - College Physics (PHYS 151, 151L, 152, 152L)
  - Biological Sciences (BIOI 171)
  - Biological Sciences (BIOI 171)

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

BS in Geology and Geophysics

Requirements
This BS degree is designed for students interested in pursuing graduate work or employment in the geosciences. It provides essential grounding in computational, analytical, and observational skills needed in earth science. The program is interdisciplinary and emphasizes the integration of biology, chemistry, physics, and mathematics in the study of the Earth.

The BS in geology and geophysics (GG) requires completion of 120 credit hours of course work, the equivalent of four years of full-time study. Of this, 48 credits are required in the GG curriculum, including one introductory level geology course with a lab, ten non-introductory level GG courses, a two-credit research seminar, and eleven credits of GG electives. With advice and consent of an undergraduate advisor, courses in other natural sciences, mathematics, or engineering can also be taken as electives. Students are strongly encouraged to take a summer field course as an elective. An undergraduate thesis is also encouraged but not required. The required supporting science classes (28-29 credits) include physics, chemistry, biological science, and college calculus, and should be taken as early as possible. A minimum grade of C (not C-) must be achieved in each major and support classes.

Geology and Geophysics Courses
- Required GG Courses (37 credits)
  - GG 101 Dynamic Earth (3), or 103 Geology of the Hawaiian Islands (3), or GG 170 Physical Geology (4)
  - GG 101L Dynamic Earth Laboratory (1) (unless GG 170 is taken)
  - GG 200 Geological Inquiry (4)
  - GG 250 Scientific Programming (3)
  - GG 301 Mineralogy (4)
Minor in Geology and Geophysics

The minor requires GG 101 or 103 or 170, 101L (unless 170 is taken), 200, and 11 credits of non-introductory courses at the 300 level or higher. A 2.0 GPA is required in these courses. The minor is flexible and can provide either an introductory survey of geology or emphasize areas of particular interest to the student. A student interested in a minor in geology and geophysics should consult with an advisor from the department to tailor a plan best suited to the student’s interest.

Graduate Study

Admission Requirements

All applicants must take the GRE General Test. All students are urged to have completed a course in a computer programming language before entrance. U.S. applications are due by January 15 for admission in the fall semester or by September 1 for the spring semester. International applications are due January 1 and August 15, respectively.

Undergraduate deficiencies will be determined from the student’s transcripts and intended field of study. Undergraduate course work deficiencies will be assessed at the preliminary conference. GG 611 is intended for students entering from a non-geoscience field to prepare them for graduate studies in the geosciences.

Master of Geoscience for Professionals (MGeo)

The MGeo is a professional degree for individuals seeking advanced training for careers in geoscience-related industries or federal, state, and local agencies. Key courses are appropriately scheduled or administered for working professionals to obtain an MGeo in as little as two years of half-time study. Applicants must have a bachelor’s degree in the natural sciences, mathematics, or engineering, and are normally expected to have completed at least one year each of college mathematics, geology, physics, and chemistry.

Requirements

The MGeo degree requires a minimum of 30 credit hours, including a total of 6 credits of MGeo Professional Project. At least 12 credits will be in GG graduate courses (GG 600-740), excluding GG 699; and 12 credits may be taken from a list of upper-division undergraduate courses that emphasize applied geoscience.

MGeo Seminar is a 1-credit course that must be taken each year, up to three times. Students will participate in a professional work project as an employee, intern, or volunteer with a company or agency (gaining the credits in MGeo Professional Project), and present the outcome of the project in final oral presentation as well as a written report.

Master’s Degree

Intended candidates will be accepted from undergraduate majors in the natural sciences, mathematics, and engineering, and they normally would be expected to have completed at least one year each of college mathematics, geology, physics, and chemistry. Adequacy of each applicant’s additional preparation will depend on the particular branch of geology and geophysics being pursued. At the time of application the student should state the field in which he or she intends to study.

Requirements

For MS students, the graduate studies committee of the department will determine suitability of Plan A (thesis) or Plan B

Course Requirements

Required GG Courses (22 credits)
- GG 170 Physical Geology (4) (or 101 Dynamic Earth (3), or 103 Geology of the Hawaiian Islands (3) and 101L Dynamic Earth Laboratory)
- GG 200 Geological Inquiry (4)
- GG 250 Scientific Programming (3)
- GG 410 Undergraduate Seminar (2)
- GG 413 Geological Data Analysis I (3)
- GG 499 Undergraduate Thesis (6)
- Upper Division GG Electives (25 credits, see above)
- Required Support Courses (28 credits)
- Chemistry: CHEM 161 (3), 161L (1), 162 (3), 162L (1)
- Calculus I and II: MATH 241 (4) and 242 (4)
- Physics: PHYS 170 (4), 170L (1), 272 (3), 272L (1)
- Biology: BIOL 171 (3), 171L (1)
(non-thesis) at the preliminary conference. Virtually all students are required to follow Plan A. Plan A requires a minimum of 30 credits, including 6 credits of GG 700 Thesis Research and at least 24 credits of course work (up to 6 course work credits may be in GG 699). Plan B requires a minimum of 30 credit hours of course work and a final exam.

**Doctoral Degree**

**Requirements**

PhD candidates are accepted with either a BS or MS degree. Students without an MS must pass a qualifying examination given at the beginning of their second semester in residence. All PhD candidates must pass a comprehensive examination no later than at the end of the fourth semester of residence for students without an MS degree or at the end of the second semester of residence for students without an MS degree. The comprehensive exam includes oral and written parts that cover in-depth subjects in the student’s field of interest and also relevant general information from this and other departments. A final examination in defense of the dissertation is required. Space and financial aid for the program are limited, so each student’s progress will be reviewed annually.

**Areas of Interest**

The areas of interest listed below are active fields of research in the department. For each, a brief description and the required undergraduate preparation are listed. Students with backgrounds other than these may be accepted in a field if their records and recommendations are strong, but advancement to candidacy may be delayed. A complete statement of the courses and other work in each field necessary for the MS or to prepare for the PhD comprehensive examination will be given to the entering student.

The department can provide further information on research opportunities and financial aid in each of the areas of interest.

**Geophysics and Tectonics.** Studies in geophysics and tectonics at UH Mānoa are interdisciplinary and include experimental and theoretical developments, field-based observations, and computer simulations. Together, they provide students with a background that combines both geology and geophysics for technical and professional work at industrial, governmental, and academic institutions. Subtopics include: (a) Plate Tectonics—rift propagation and plate break-up; initiation and evolution of continental margins and back-arc basins; relative and absolute motion of plates; thermo-mechanical properties of oceanic lithosphere; mantle convection and the driving forces of plate tectonics; and hot spot and intraplate volcanism; (b) Seismology—theory and analysis of seismic waves from active and passive sources; ocean-bottom geophysical instrumentation; multichannel seismic imaging of subduction zones, accretionary prisms, and submarine volcano flanks; (c) Geophysical Fluid Dynamics—mantle flow and plume-plate interaction; plate generation and rheology from mantle flow; ocean/shore dynamics and nonlinear waves; (d) Rock Fracture Mechanics—field, theoretical, and laboratory analyses of the mechanics of fault growth, rock fracture, dike propagation, landslides, and crustal deformation; these topics are relevant to plate tectonics, structural geology, and engineering geology.

Entrance may be through majors in geophysics, geology, mathematics, physics, or engineering. Students need a background in geology (which can be obtained in graduate school) together with supporting mathematics and physics.

**Marine and Environmental Geology (MEG).** The Marine and Environmental Geology (MEG) program is focused on the dynamic physical, biological, and chemical interactions that characterize Earth surface terrestrial and marine environments and also the history of these interactions over the course of geologic time. Researchers work on problems ranging from those of pure scientific curiosity of global phenomena to pragmatic problem-solving of environmental problems, and including everything in-between. Faculty and students of the MEG group travel to field sites all over the world to study processes and interactions between water, atmosphere, sediments, and living tissues, and their travel also includes several large-scale projects located within the Hawaiian Islands. Research also extends backward through deep time, integrating the biological and physical aspects of earth history through the study of rocks and fossils. Instruction is designed to provide students with hands-on exposure to the most exciting, contemporary issues in environmental science, particularly on topics where the fields of geology and oceanography overlap with other environmental sciences. Laboratories use the newest biogeochemical technologies and instrumentation in order to assess the health and integrity of coastal systems, to reconstruct past climates and life forms, to characterize the movement of precious water resources, and to understand the chemical cycling of both organic and inorganic components of the ocean. MEG research topics carry important implications and benefits for the sustainability of fresh water resources and reserves, agriculture, coastal and marine ecosystems, fisheries, Hawaii’s beaches and economy, and other topics of immediate societal concern.

Many research efforts in this program involve participation in oceanographic expeditions. Graduate students are encouraged to participate in these voyages as a part of their career training. The program is multidisciplinary with cooperating faculty and courses from several other departments including civil engineering, geography, oceanography, and soil sciences. The diverse research and teaching interests of the faculty make it possible to tailor graduate degree work to fit the needs and desires of the student. Requirements for admission typically include an undergraduate major in geology or one of the other natural sciences, along with basic courses in physics, chemistry, and mathematics. Students often study a combination of geology, geophysics, oceanography, biology, civil engineering, and/or geochemistry, as appropriate for his or her optimum intellectual development.

**Volcanology, Geochemistry, and Petrology (VGP).** UH Mānoa is uniquely situated to study all major aspects of volcanic systems. Active Hawaiian volcanoes are natural laboratories of intraplate volcanism and hydrothermal activity; eroded fossil volcanic systems on other islands provide windows into deeper volcanic structures; and Hawaii’s is at the center of the Pacific “Ring of Fire.” Collectively, the VGP group has active field programs that are global in scope. The group studies submarine volcanoes with UH Mānoa and other research vessels, and on terrestrial volcanoes around the world, and participates in remote monitoring of volcanoes on Earth and other planets using ground-based and space-borne observatories. Faculty of the VGP group operate a wide range of modern, well-equipped, state-of-the-art analytical laboratories that provide data on the chemical composition and physical properties of rocks and minerals. In addition, VGP covers basic courses in Hawaiian geology, geologic hazards, geochemistry, optical mineralogy,
petrology, structural geology, volcanology, geological field methods, remote sensing and GIS techniques.

Specialized topics that members of the group study include:
(a) geometry and dynamics of mantle flow, melt generation and magma chamber processes at submarine volcanoes from petrologic, geochemical, and isotopic variations at mid-ocean ridges and back-arc basin spreading centers; active volcanism at submarine volcanoes; geochronology of submarine volcanism, and volcano interactions with the submarine environment; (b) physical processes at volcanoes giving rise to degassing, and fragmentation of magma in conduits; transport and deposition from volcanic plumes and pyroclastic density currents; flood basalts and the eruption and emplacement of lavas; caldera volcanoes and ignimbrites; volatile degassing and retention in magma chambers; environmental impact and social consequences of eruptions; and volcanic processes on extraterrestrial bodies. (c) geochemical and isotopic tracing of mantle composition and evolution; geochemical cycling; geosphere-hydrosphere exchanges; (d) petrologic, geochemical, isotopic, and geologic evolution of Hawaiian and other oceanic islands and seamounts; petrologic, seismic, and geodetic monitoring of magmatic systems at active Hawaiian volcanoes; satellite monitoring of volcanic hazards and eruption clouds; remote-sensing observation of extraterrestrial volcanoes.

Entrance through majors in geology or chemistry is most typical. Students need a background in geology (which can be obtained in graduate school) together with supporting mathematics and physics.

**Planetary Geoscience and Remote Sensing.** This program, centered in the Hawaiian Institute of Geophysics and Planetology (HIGP), studies the geology and composition of objects (planets, asteroids, moons, and meteorites) in the Solar System to understand their origin and evolution. It involves research in planetary and terrestrial geology, cosmochemistry, volcanology, planetary astronomy, and scientific instrumentation. Current research areas include: (a) research on extraterrestrial materials from asteroids, the Moon, and Mars as records of processes in the solar nebula; alteration processes; the effects of shock; igneous processes; and planetary crustal compositions and evolution; (b) remote sensing and petrology of the moon, Mars, and Mercury to understand planetary formation, differentiation, and weathering of planetary crusts, volcanic processes, and the mode of formation of impact craters. Faculty are science team members on multiple planetary missions (MESSENGER, Lunar Reconnaissance Orbiter, Mars Odyssey, and Mars Reconnaissance Orbiter); (c) terrestrial remote sensing using spacecraft (Landsat 7, EO-1, Terra, Aqua, GOES), aircraft, and ground observations to study the flux of magma through volcanic systems, eruption precursors, forest fires worldwide and the like. Data from the GOES geostationary satellite are made available on the HIGP website (goes.higp.hawaii.edu) and MODIS thermal alerts for the entire world are made available at modis.higp.hawaii.edu. Imaging radar remote sensing is also conducted within HIGP. This includes interferometric studies of volcano deformation using ENVISAT and ALOS data for understanding magma emplacement and volcano tectonics. HIGP is a major partner (with the College of Engineering) in the Hawai‘i Space Flight Laboratory, which includes preparation for future UH-led space missions involving small satellites; (d) developing instruments for use in studying global and regional problems in Earth and planetary science, such as hyperspectral thermal infrared imagers for use in lithologic mapping, the analysis of temperature anomalies, the flux of sulfur dioxide from volcanoes, an infrasound array for a global monitoring system for the detection of atmospheric disturbances, and lidar systems for the measurement of atmospheric aerosols and rock compositions.

Typically, an undergraduate major in geology, astronomy, physics, or engineering, along with basic courses in chemistry, physics, and mathematics, would be sufficient for entrance. The student should be prepared to commence or continue course work in whatever combination of geology, geophysics, geochemistry, planetary science, spectroscopy, radar science, or remote sensing is appropriate for optimum development in the field and to satisfy minimum requirements in the Geology and Geophysics department.

**Global Environmental Science**

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Fax: (808) 956-9225
Email: ges@soest.hawaii.edu
Web: www.soest.hawaii.edu/oceanography/GES/

**Faculty**

M. Guidry, PhD (Undergraduate Chair)—biogeochemical modeling, mineral precipitation/dissolution kinetics, K-12/university curriculum development
R. Alegado, PhD—marine microbial ecology, choanoflagellate-bacterial interactions, influence of bacteria on animal evolution
J. M. Becker, PhD—geophysical fluid dynamics, nonlinear waves and stability, coastal processes, general ocean circulation
D. Beilman, PhD—long-term terrestrial ecology, paleoscience approaches to global change science, carbon cycling
R. R. Bidigare, PhD—bio-optical oceanography, pigment biochemistry, plankton metabolism
S. Businger, PhD—mesoscale and synoptic meteorology
B. C. Bruno, PhD—planetary geosciences, geoscience education
G. S. Carter, PhD—physical oceanography, ocean mixing, tides, internal waves
M. J. Church, PhD—microbial oceanography, aquatic nitrogen cycling, and microbial physiology
M. J. Cooney, PhD—anaerobic digestion of high strength wastewaters, development of next generation biofilm carriers for use in packed bed anaerobic digesters, solvent based bio-oil extraction from biomass
E. H. DeCarlo, PhD—carbon dioxide-carbonic acid system biogeochemical studies of coastal waters, gas exchange, land-ocean interactions and coral reef metabolism
J. L. Deenik, PhD—soil fertility and soil quality, nitrogen and carbon cycling in agroecosystems, traditional agroecosystems, biochar and sustainable agriculture
E. F. DeLong, PhD—microbial oceanography, environmental genomics and allied technologies, microbial evolution, ecological interactions and biogeochemistry
S. Dollar, PhD—biogeochemistry, nearshore processes and effects of human activity on the coastal zone
J. C. Drazen, PhD—deep-sea ecology and fisheries, energetics and trophodynamics, physiological ecology of marine fishes
A. El-Kadi, PhD—hydrogeology, modeling groundwater systems

*Graduate Faculty
R. C. Ertelkin, PhD—hydrodynamics, computational methods, offshore and coastal engineering, oil-spill spreading, fishpond circulation, ocean renewable energy
E. Firing, PhD—ocean circulation and currents on all scales, with emphasis on observations and dynamics
P. J. Flament, PhD—dynamics of surface ocean layer, mesoscale structures, remote sensing, water-types formation subduction and thermocline ventilation, mixing process
C. H. Fletcher, PhD—quaternary and coastal marine geology, sea-level history, coastal sedimentary processes
P. Fryer, PhD—marine geology, petrology, tectonics
E. Gaidos, PhD—molecular evolution; microbiology of extreme environments; biosphere-climate feedbacks; critical intervals in Earth history; exobiology; biological networks
M. O. Garcia, PhD—volcanology, igneous petrology, geochemistry
T. W. Giambelluca, PhD—interactions between the atmosphere and the land surface, including influences of land use and land cover change on climate and surface hydrology and effects of global climate change on hydrologic processes and terrestrial ecology
B. T. Glazer, PhD—biogeochemical processes in marine environments; use of molecular methods to characterize and understand synergy of geomicrobiology
C. R. Glenn, PhD—paleoceanography, marine geology, sedimentology, sediment diagenesis
E. Goetze, PhD—marine zooplankton ecology; dispersal and gene flow in marine plankton populations; evolution, behavioral ecology and systematics of marine calanoid copepods
E. G. Grau, PhD—environmental physiology and comparative endocrinology of fish
M. P. Hamnet, PhD—coastal zone management; fisheries economics; disaster preparedness and mitigation
D. T. Ho, PhD—air-water gas exchange, tracer oceanography, carbon cycle, and environmental geochemistry
P. Kemp, PhD—growth, activity and diversity of marine microbes; biosensor applications in microbial oceanography; molecular ecology of marine bacteria
D. E. Konan, PhD—international trade, microeconomics, computational economics
K. Lowry, PhD—design, planning and evaluation of ocean and coastal management programs; experience in Hawai‘i, Indonesia, Sri Lanka, Philippines and Thailand
R. Lukas, PhD—physical oceanography, interannual and decadal climate variability
F. T. Mackenzie, PhD—geochemistry, biogeochemical cycling, global environmental change, Program Coordinator for GES
S. J. Martel, PhD—engineering and structural geology
M. A. McManus, PhD—coast circulation, mesoscale processes, physical-biological interactions in the ocean
G. M. McMurtry, PhD—geochemistry, geology and geophysics
C. Measures, PhD—trace element geochemistry, shipboard analytical methods, atmospheric deposition to the oceans, elemental mass balances
M. Merlin, PhD—biogeography, natural history of the Pacific
M. A. Merrifield, PhD—physical oceanography; coastal circulation; sea level variability; current flows and mixing in the vicinity of coral reefs, islands and seamounts
T. Miura, PhD—remote sensing of terrestrial vegetation, GIS
G. F. Moore, PhD—marine geophysics, structural geology
M. J. Mortl, PhD—hydrothermal processes, geochemical cycles
P. Mouginis-Mark, PhD—volcanology from space, remote sensing of natural hazards
C. E. Nelson, PhD—microbial ecology and ecosystem science in oceans, coral reefs, and freshwater habitats
A. B. Neuheimer, PhD—quantitative ecology of fish and aquatic invertebrate populations, with applications to evolutionary biology, physiology, ecosystem dynamics, resource management, and climate issues
B. N. Popp, PhD—isotope biogeochemistry, organic geochemistry
J. N. Porter, PhD—atmospheric science, use of satellites to study aerosol and cloud forcing, ship measurements of aerosol and cloud optical properties
B. S. Powell, PhD—numerical modeling, variational data assimilation, ocean predictability, ocean dynamical modes, and ocean ecosystem dynamics
M. S. Rappe, PhD—ecology of marine microorganisms; genomics; coral-associated microorganisms; ecology of microorganisms in the deep subsurface
G. Ravizza, PhD—paleoceanography and environmental chemistry; geologic history of chemical weathering; geochemistry of recent and ancient metalliferous sediments; anthropogenic influences on the geochemical cycles of the platinum group elements; chemical signatures of extraterrestrial matter in marine sediments; biogeochemistry of molybdenum in the marine environment
K. J. Richards, PhD—observations and modeling of ocean processes, ocean dynamics, ocean atmosphere interaction, ecosystem dynamics
M. A. Ridgley, PhD—resource management and human-environment system analysis
J. Roumass, PhD—environmental economics and sustainable growth
K. Rubin, PhD—isotope geochemistry, chronology
K. Ruttenberg, PhD—biogeochemistry of phosphorus and phosphorus cycling in the ocean, rivers, and lakes; nutrient limitation of aquatic primary productivity; effects of redox chemistry on nutrient cycling; early diagenesis in marine sediments with focus on authigenic mineral formation and organic matter mineralization
F. J. Sansone, PhD—biogeochemistry of permeable (sandy) sediments, coastal processes, trace-gas biogeochemistry, hydrothermal geochemistry
N. Schneider, PhD—decadal climate variability, tropical air-sea interaction, coupled modeling
J. E. Schoonmaker, PhD—sedimentary geochemistry and diagenesis; interpretation of paleoenvironment and paleoclimate sedimentary records
S. K. Sharma, PhD—remote sensing; Lidar, Raman, and infrared spectrometry and fiber-optic environmental sensors
C. R. Smith, PhD—benthic and ecology, deep-sea biology, sediment geochemistry, climate-change effects on Antarctic ecosystems, marine conservation
G. F. Steward, PhD—aquatic microbial ecology, molecular ecology and diversity of viruses and bacteria
A. Timmermann, PhD—tropical climate variability, large-scale ocean circulation, Paleoceanography, Earth-system modeling
B. Wang, PhD—atmospheric and climate dynamics
J. C. Wiltshire, PhD—marine minerals, mine tailings and disposal, geochemistry, stable isotope geochemistry
C. R. Smith, PhD—benthic and ecology, deep-sea biology, sediment geochemistry, climate-change effects on Antarctic ecosystems, marine conservation
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A. Timmermann, PhD—tropical climate variability, large-scale ocean circulation, Paleoceanography, Earth-system modeling
B. Wang, PhD—atmospheric and climate dynamics
J. C. Wiltshire, PhD—marine minerals, mine tailings and disposal, remediation and submersible engineering and operations
R. E. Zeebe, PhD—global biogeochemical cycles, carbon dioxide system in seawater and interrelations with marine plankton, paleoceanography, stable isotope geochemistry

Degree Offered: BS in global environmental science

The Academic Program

Global environmental science is a holistic, scientific approach to the study of the Earth system and its physical, chemical, biological, and human processes. This academic program is designed to educate leaders and citizenry to become wise stewards of our planet. Global environmental science focuses on the global reservoirs of hydrosphere (water, primarily oceans), biosphere (life and organic matter), atmosphere (air), lithosphere (land, sediments, and rocks), and cryosphere (ice); their interfaces; and the processes acting upon and within this interactive system, including human activities. In the course of their scientific studies, global environmental science students are able to investigate natural as well as economic, policy, and
social systems and their response and interaction with the Earth system. Global environmental science has important ties to the more classical sciences of geology and geophysics, meteorology and climatology, oceanography, and ecology as well as to the social sciences. Thus, the scope of global environmental science is extremely broad. This breadth is reflected in the interdisciplinary nature of the faculty, which is primarily drawn from numerous departments and research institutions within the School of Ocean and Earth Science and Technology.

Global environmental science has much to offer the student who is interested in the environment and the effect of humans on the environment. The skills developed in global environmental science can be brought to bear on local, regional, and global environmental issues. Many of the critical environmental problems confronting humankind involve large-scale processes and interactions among the atmosphere, oceans, biosphere, cryosphere, shallow lithosphere, and people. Some of the problems derive from natural causes; others are a result of human activities. Some of the issues that global environmental science students deal with are: climatic changes from anthropogenic inputs to the atmosphere of CO$_2$ and other greenhouse gases; human interventions and disruptions in the biogeochemical cycles of carbon, nitrogen, phosphorus, sulfur, trace metals, and other substances; emissions of nitrogen and sulfur oxide gases and volatile organic compounds to the atmosphere and the issues of acid deposition and photochemical smog; depletion of the stratospheric ozone layer and associated increase in the flux of ultraviolet radiation to Earth’s surface; increasing rates of tropical deforestation and other large-scale destruction of habitat, with potential effects on climate and the hydrologic cycle; disappearance of biotic diversity through explosive rates of species extinction; global consequences of the distribution and application of potentially toxic chemicals in the environment and biotechnology; interannual and interdecadal climate variability, e.g., El Niño/Southern Oscillation; eutrophication; water and air quality; exploitation of natural resources with consequent problems of waste disposal; earthquakes, tsunamis, and other natural hazards and prediction; and waste disposal: municipal, toxic chemical, and radioactive. In all cases, the student is encouraged to understand and appreciate the latter in the context of basic skills and cognitive skills to deal with the higher academic level courses within this latter category of course work that the formal course requirements, the global environmental science program has core requirements of two basic types: basic sciences and derivative sciences. The former provides the foundation to understand and appreciate the latter in the context of basic skills and the former provides the foundation to understand and appreciate the latter in the context of basic skills and mathematics, biology, chemistry, and physics. Both global environmental science core requirements provide the necessary cognitive skills to deal with the higher academic level courses within the global environmental science curriculum. These include 7 required foundation courses in global environmental science and a minimum of 4 coupled systems courses. It is within this latter category of course work that the formal course program will be tailored to the individual student’s needs. For example, we anticipate that most students will follow closely a natural science track of study, perhaps concentrating on the terrestrial, marine, or atmospheric environment. However, because of the human dimensions issues involved in the subject matter of environmental change, some students may wish to expand their academic program into the social sciences that bear on the issues of global change.

A minimum grade of C must be obtained in all GES required courses.

**Core Basic Sciences Requirement (38 credits)**
- BIOL 171/171L, 172/172L
- CHEM 161/161L, 162/162L
- MATH 241, 242
- MATH 243, 244 or OCN/GG 312, ECON 321
- PHYS 170/170L, 272/272L
### Core Derivative Sciences Requirement (11 credits)
- GG 101/101L or GG 170
- MET/ATMO 200
- OCN 201/201L

### Foundation Course Requirements (18 credits)
- GEOG 411 Past Global Change and the Human Era or GEOG 410 Human Role in Environmental Change
- OCN 100 Global Environmental Science Seminar
- OCN 310/310L Global Environmental Change/Lab
- OCN 320 Aquatic Pollution
- OCN 363 Earth System Science Databases
- OCN 401 Biogeochemical Systems

### Coupled Systems Courses (4 minimum—Examples)
- ASTR 210 Foundations of Astronomy
- BIOC 241 Fundamentals of Biochemistry
- BIOL 265 Ecology and Evolutionary Biology
- BIOL 301 Marine Ecology and Evolution
- BIOL 404 Advanced Topics in Marine Biology
- BOT 350 Resource Management & Conservation in Hawai'i
- BOT 480 Algal Diversity and Evolution
- ECON 358 Environmental Economics
- ECON 458 Project Evaluation and Resource Management
- ECON 496 Contemporary Economic Issues
- ECON 638 Environmental Resource Economics
- GEOG 300 Introduction to Climatology
- GEOG 388 Introduction to GIS
- GEOG 401 Climate Change
- GEOG 402 Agricultural Climatology
- GEOG 404 Atmospheric Pollution
- GEOG 405 Water in the Environment
- GG 301 Mineralogy
- GG 309 Sedimentology and Stratigraphy
- GG 420 Beaches, Reefs, and Climate Change
- GG 421 Geologic Record of Climate Change
- GG 425 Environmental Geochemistry
- GG 444/OCN 444 Plate Tectonics
- GG 455 Hydrogeology
- GG 466 Planetary Geology
- MET/ATMO 302 Atmospheric Physics
- MET/ATMO 303 Introduction to Atmospheric Dynamics
- MICR 401 Marine Microbiology
- NREM 301/301L Natural Resources Management/Lab
- NREM 302 Natural Resource and Environmental Policy
- NREM 304 Fundamentals of Soil Science
- NREM 461 Soil and Water Conservation
- OCN 330 Mineral and Energy Resources of the Sea
- OCN 331 Living Resources of the Sea
- OCN 403 Marine Functional Ecology and Biotechnology
- OCN 435 Climate Change and Urbanization
- OCN 480 Dynamics of Marine Ecosystems: Biological-Physical Interactions in the Oceans
- OCN 620 Physical Oceanography
- OCN 621 Biological Oceanography
- OCN 622 Geological Oceanography
- OCN 623 Chemical Oceanography
- OCN 630 Deep-Sea Biology
- OCN 633 Biogeochemical Methods in Oceanography
- OCN 638 Earth System Science and Global Change
- PHIL 315/OCN 315 The Role of Models in Global Environmental Science
- PHIL 316 Science, Technology, and Society
- PLAN 310 Introduction to Planning
- POLS 316 International Relations
- SOC 412 Analysis in Population and Society
- ZOOL 410 Corals and Coral Reefs
- ZOOL 466 Fisheries Science

The student may also wish to take additional courses in fundamental physics, chemistry, biology, or mathematics. Global environmental science currently has three optional tracks (or combination of electives):

1. **Marine science and environment**: In this track, the student concentrates his or her studies in marine/ocean science and the application of their work to environmental problems related to the ocean. The student is encouraged to take as many oceanography courses as practical and to have a senior thesis problem that is related to ocean studies. It is within this track that a student’s program can be designed so that the student is able to apply to graduate school in oceanography.

2. **Policy/economics and environment**: this track enables the student, after satisfying the GES science core, to concentrate further course work and the senior thesis in environmental economics, policy, and law. This is probably the best route for a student to take who is going directly into the work place or is simply interested in becoming a wise environmental steward of the planet.

3. **Climate and environment**: this track enables the student to concentrate academic studies and the senior thesis topic on the interactions between climate and the environment, on human impacts on climate, and the causes of climatic change. The student is encouraged to take coupled systems courses in meteorology and climatology.

Majors should consult with their advisor as early as possible to devise a curriculum suited to their particular goals.

### Directed Reading
- OCN 399 Directed Reading

Course offering with an individual faculty member to do a one-on-one study on a topic of particular interest to you.

This could be used to explore a topic before deciding on a senior thesis, or because you are interested in an area in which there isn’t a formal course offering. It can be taken for CR/NC or for a grade and you can register for 1-3 credits. This is not considered a CS class.

### Senior Research Thesis (5-8 hours)
- OCN 490 Communication of Research Results
- OCN 499 Undergraduate Thesis

Each student is required to complete a senior thesis based on research conducted with one or more chosen advisors, and to make a public presentation of their research results.
Marine Biology

See the “Interdisciplinary Programs” section of the Catalog for more information on the Marine Biology Graduate Program.

Ocean and Resources Engineering

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Faculty
*B. M. Howe, PhD (Chair)—acoustical and physical oceanography, tomography, sensors and network infrastructure
*J. C. Wiltshire, PhD (Associate Chair)—submersibles, ROV, marine minerals, marine mining technology
*K. F. Cheung, PhD (Graduate Chair)—coastal and offshore engineering, marine hydrodynamics, computational methods, water wave mechanics, coastal flood hazards
*R. C. Eretkin, PhD—hydrodynamics, ocean renewable energy, offshore engineering, nonlinear waves, computational mechanics
*B. D. Grexson, PhD—offshore engineering, hydrodynamics, ROV/submersible operations
*[Z. Huang, PhD—coastal and ocean engineering, wave-structure interactions, wave energy conversion, natural hazards-tsunamis, coastal sediment transport, coral reef hydrodynamics
*G. C. Nihour, PhD—ocean thermal energy conversion, marine renewable energy
*E. Nosal, PhD—passive acoustic monitoring methods, ocean ambient noise, sediment acoustics, bioacoustics

Cooperating Graduate Faculty
J. M. Becker, PhD—general ocean circulation
B. S. Bingham, PhD—robotics, autonomous navigation, dynamics and controls
M. Chyba, PhD—control theory
R. Ghorbani, PhD—dynamics, controls, design, alternative energy
B. Glazer, PhD—instrumentation
S. M. Masutani, PhD—ocean resources engineering
G. McMurtry, PhD—oceanographic engineering
M. A. Merrifield, PhD—coastal and near-shore processes
H. R. Riggs, PhD—structural engineering
J. R. Smith, PhD—marine survey
J. Yu, PhD—marine bioproducts engineering

Affiliate Faculty
E. Pawlak, PhD—coastal mixing processes, fluid dynamics, sediment transport
D. Rezachek, PhD—ocean energy and engineering design
J. Van Ryzin, PhD—mechanical and ocean engineering
D. Vithanage, PhD—coastal engineering, nearshore circulation

Degrees Offered: MS in ocean and resources engineering, PhD in ocean and resources engineering

The Academic Program

Ocean and Resources Engineering is the application of ocean science and engineering design to the challenging conditions found in the ocean environment and to the synthesis of novel products from marine systems. Waves and currents, turbulence, dynamic loads, mobile sediment, high pressure and temperature variations, ocean acoustics, marine instrumentation, as well as chemical and biological processes, are among the considerations that set ocean and resources engineering apart from conventional land-based engineering.

Educational and research emphasis is placed on coastal engineering, offshore engineering, and ocean resources engineering. Coastal engineering deals with coastal and harbor problems, sediment transport, nearshore environmental engineering, and coastal flood hazards due to storm surge and tsunamis. Offshore engineering is concerned with structures and systems used in the deeper parts of the ocean, including the continental shelf. It also includes hydrodynamics of fluid-body interaction, seakeeping and dynamic responses of marine vehicles and platforms, and hydroelasticity of very large floating structures. Ocean resources engineering is concerned with the engineering systems to develop the energy, minerals and living resources of the oceans, the use of the ocean for waste disposal, and the environmental and economic aspects of these activities. The MS program in ocean and resources engineering is accredited by the Accreditation Board for Engineering and Technology (ABET), which provides accreditation services to the first degree offered by engineering programs.

The educational and research programs in the department have a good balance between numerical and laboratory modeling as well as field observation. Computing facilities include 5 Linux systems and a network of Pentium-based PCs. The cluster Kiwi comprises a 44 TB RAID and 22 processing nodes each containing 2 Intel Quad Core X5460 processes with 24 GB RAM. The department also maintains a number of software packages that are available to the students for course work and research.

The department’s Environmental Fluid Dynamics Laboratory (EFDL) focuses on the study of coastal marine processes including turbulent dispersal of pollutants and nutrients, wave dynamics, and sediment transport as well as fundamental fluid processes such as vortex breakdown and boundary layer turbulence. In addition, the laboratory is home to the Environmental Fluid Dynamics Education Laboratory, which serves as a center for teaching of fluids phenomena. Laboratory instrumentation includes acoustic Doppler velocimeters (ADVs) which obtain high frequency, single point, 3-component velocity measurements, and a laser-based digital particle imaging velocimetry (DPIV) system that obtains two-dimensional fluid velocity via laser imaging techniques. A pulsed Nd:YAG laser and UV light system with digital still and video cameras are used for flow visualization and measurement. The EFDL houses multiple experiment tanks, which are used for both research and teaching demonstrations. These include a 10-meter long, 30 x 10 cm wave channel, and a small rotating table. The tanks allow demonstration of a range of fluid flow phenomena including wave breaking, downslope currents, internal waves in stratified fluids along with rotational effects such as spin-up, Ekman flow and geostrophy.

The department maintains facilities at Kewalo Basin and Snug Harbor in Honolulu for fieldwork and in-ocean experiments. The department operates the Kilo Nalu Observatory offshore of Kakaako, which provides cabled power and Ethernet for in-ocean experimentation at 10 and 20m depths. Kilo Nalu provides comprehensive, real-time observations of ocean cur-
rents, waves and water properties, and hosts multiple ongoing research projects focused on coastal ocean processes and instrument development. Field observational equipment includes a REMUS autonomous underwater vehicle (AUV), an LBV 150 remotely operated vehicle (ROV), an array of wave gauges, acoustic current profilers, and current meters. In addition, the department has access to a 25-ft twin-outboard motorboat, two ocean-going vessels operated by SOEST, two 2000m depth submersibles operated by the Hawai‘i Undersea Research Lab and a new 6000m ROV which services the ALOHA Cable Observatory (ACO). ACO is the deepest operating node (power and internet) on the planet. ACO provides real time acoustic monitoring and communication.

In ocean acoustics, gliders are being used as gateways communicating between underwater mobile and fixed nodes and pilots on shore. Hydrophones on gliders monitor for ambient sound including marine mammals, wind and rain, and shipping. Research on detection, classification, and tracking of marine mammals and divers is underway. Tomographic remote sensing work is being developed for use on small scales in local waters as well as on regional and basin scales.

The graduate program in ocean and resources engineering channels the students’ previous engineering or scientific experience to ocean-related careers. Approximately 38% of the students graduating between Fall 2007–Fall 2013 found immediate employment in private industry including oil companies, engineering firms, environmental service firms and construction companies in the U.S. About 13% joined or continued their employment with federal or state agencies. 28% continued studies either by pursuing a higher degree or a post-doctoral position. 6% were employed by UH in engineering research positions. 4% returned to their countries of origin pursuing engineering. 2% received a tenure-track faculty position. 9% decided to pursue non-engineering positions. 62% of the graduates stayed in Hawai‘i.

**Graduate Study**

**Educational Objectives**

The Department of Ocean and Resources Engineering offers a graduate program leading to the Master of Science (MS) and Doctor of Philosophy (PhD) degrees. The goal of the program is to prepare students for the engineering profession and to conduct research in the support of the educational program. The objectives of the program at the MS level are to produce graduates who, during the first few years following graduation:

1. Are effective and creative engineers applying knowledge of mathematics and science to the solution of practical engineering problems;
2. Have general understanding of and ability to work in the ocean and resources engineering disciplines;
3. Are proficient in one or more of the ocean and resources engineering disciplines;
4. Are aware of professional, managerial, legal, ethical, and other non-technical issues commonly encountered in engineering practice;
5. Can communicate and work effectively with peers, clients, and the general public in promoting new ideas, products, or designs; and
6. Can adapt to the changing needs and technology of the ocean and resources industry.

The program at the PhD level shares these objectives with the additional emphasis to produce graduates who:

7. Are productive researchers conducting original research and developing new technology in ocean and resources engineering; and
8. Have the experience to publish in refereed journals.

This additional emphasis prepares the PhD graduate to pursue research careers in the industry or academia.

**Admission Requirements**

Students are admitted for graduate study on the basis of their scholastic records. Degree candidates for the MS program usually have a bachelor’s degree in an engineering discipline that provides an adequate background in mathematics, physics, chemistry, and mechanics. Students seeking admission to the PhD program should have an MS in engineering or equivalent qualification. However, exceptionally well qualified students with a BS in engineering, who do not have a master’s degree, may petition to be admitted to the PhD program directly. Students with mathematics, physics, or other science backgrounds may be admitted to the program, but are required to take specific undergraduate engineering courses to satisfy the pre-program requirements.

Deadlines to submit applications for admission to the graduate programs are January 15 for fall semester admission and August 15 for spring semester admission. The ORE application checklist (available on the ORE website) lists all the forms and supporting documents that need to be submitted; some forms and documents are submitted to Graduate Education while others are submitted directly to the ORE department.

Detailed Graduate Education requirements and forms are available at manoa.hawaii.edu/graduate/content/prospective-students. Official scores in the GRE General Test are required from all applicants. Official TOEFL scores are required from all non-native English speaking students.

Forms required by the department can be downloaded from the ORE admissions webpage at www.ore.hawaii.edu/OE/ore_admission.htm:

- supplemental information form
- statement of objectives
- letter of recommendation form
- graduate assistantship application

Once an application is complete, the Graduate Education performs an initial screening to assure that admission requirements are satisfied. The Admission Committee and department chair then evaluate the application and determine the admissibility of the applicant to the ORE department.

**Master’s Degree**

The MS degree in ocean and resources engineering may be earned under either Plan A (thesis) or Plan B (non-thesis). The program requires a minimum of 30 credit hours. At least 24 credit hours must be earned in advanced courses numbered 600 or above. Up to 2 credit hours of directed reading and 6 transferred credits can be counted toward the MS requirements. Students are required to take the general examination during the first semester of their full-time enrollment to test their knowledge in mathematics, science, and basic engineering. Passing the examination advances the student to master’s candidacy.

Students generally devote their first semester to the basic disciplines in ocean and resources engineering and then special-
ize in coastal, ocean resources, or offshore engineering by taking the required courses in the area. The core courses ORE 411, 601, 603, 607, and 609 cover the basic disciplines that include hydrostatics, hydrodynamics, oceanography, water waves, underwater acoustics, and field and laboratory work. A grade of B- or better is required in all core courses. One credit of seminars, ORE 792, is also included in the core requirements. The required courses are ORE 601, 604, and 783B in coastal engineering; ORE 612, 630, and 783C in offshore engineering; and ORE 677, 678, and 783D in ocean resources engineering. The ORE 783 Capstone Design Project is team-taught by faculty members and practicing professional engineers to prepare students for the engineering profession. The core and required courses amount to 25 credit hours and the remaining credits are to be chosen to form a coherent plan of study.

Students complete their study with a Plan A thesis or a Plan B independent project. The thesis option is research oriented and students receive 6 academic credits for the work. The project option focuses on engineering application or design and carries 3 academic credits. Both require a proposal outlining the subject area, objectives, proposed methodology, sources of data, and anticipated results that must be approved by a committee of at least three graduate faculty members. The work results in a thesis or a report that demonstrates both mastery of the subject matter and a high level of communication skills. Students must present and defend the work at a final examination, which provides the faculty an opportunity to test the students’ understanding and ability to integrate their work at the MS level.

The general and final examination may be repeated once. The general examination must be taken earlier than the semester in which the final examination is taken.

**PhD Degree**

Students pursuing the PhD degree are required to achieve a broad understanding of the principal areas of ocean and resources engineering, as well as a thorough understanding of a specific area. Students must, at a minimum, possess the knowledge covered by the core courses of the MS degree in ocean and resources engineering.

All intended candidates for the PhD degree will take a written qualifying examination before or during the third semester of full-time enrollment. In addition to covering the basic undergraduate fundamentals, the examination tests the students’ understanding of the core work at the MS level. After passing the examination and being advanced to candidacy, students must take a comprehensive examination, which tests their ability to carry out original research and preparation for the selected dissertation topic.

The dissertation topic must be approved by a committee consisting of a minimum of five graduate faculty members with at least one outside member. Students are encouraged to publish the research work in refereed journals in order to obtain feedback from the research community and to develop a publication track record prior to graduation. They must present and defend the novelty of the dissertation at a final examination.

The qualifying and comprehensive examinations may each be repeated only once. The final examination may not be repeated, except with approval of the graduate faculty involved and the dean of Graduate Education.

**Advising**

Upon admission, the department chair meets with each incoming student at a preliminary conference to discuss the program requirements and determine any pre-program deficiencies.

The graduate chair serves as the advisor to students without an undergraduate engineering degree until they satisfy the pre-program requirements. Once pre-program requirements are met, the department chair appoints an academic advisor from the pool of ORE departmental faculty. The academic advisor is tasked with helping students navigate through the requirements of the program and ensuring that the guidelines are met. At the start of the research phase, students select a research advisor to guide their research and serve as their committee chair.

**Oceanography**

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**Faculty**

*M. J. Mottl, PhD (Chair)—submarine hydrothermal processes, geochemical cycles, sea-water-sea-floor chemical interaction*
*R. Alegado, PhD—marine microbial ecology and evolution, symbioses, microbial predator-prey interactions, choanoflagellate-bacterial interactions*
*A. Andrew, PhD—sclerochronology, bomb radiocarbon dating, lead-radium dating, fisheries ecology, education*
*P. Bienfang, PhD—phytoplankton ecology, ciguatera, aquatic pollution, aquaculture*
*B. C. Bruno, PhD—planetary geosciences, geoscience education*
*G. S. Carter, PhD—physical oceanography, ocean mixing, tides, internal waves*
*M. J. Church, PhD—microbial oceanography, biogeochemistry, plankton biomass and production, ocean ecosystem dynamics*
*E. H. DeCarlo, PhD—carbon dioxide-carbonic acid system biogeochemical studies of coastal waters, gas exchange, land-ocean interactions and coral reef metabolism*
*E. F. DeLong, PhD—microbial oceanography, environmental genomics and allied technologies, microbial evolution, ecological interactions and biogeochemistry*
*J. Drazen, PhD—deep-sea ecology and fisheries, energetics and trophodynamics, physiological ecology of marine fishes*
*K. F. Edwards, PhD—ecology of phytoplankton and other marine organisms; population and community ecology; theoretical ecology*
*E. Firing, PhD—equatorial circulation, general circulation, physical oceanographic technology*
*P. J. Flament, PhD—dynamics of the surface layer, mesoscale structures, remote sensing, water-types formation, subduction and thermocline ventilation, mixing processes*
*B. T. Glazer, PhD—biogeochemical cycling, redox transition zone geomicrobiology, in situ electrochemical techniques*
*E. Goetze, PhD—marine zooplankton ecology; dispersal and gene flow in marine plankton populations; evolution, behavioral ecology and systematics of marine calanoid copepods*
*W. Grossman, PhD—environmental research, systems sciences, information society and innovation, higher education*
*M. Guidry, PhD—biogeochemical modeling, mineral precipitation/dissolution kinetics, K-12/university curriculum development*

* * Graduate Faculty
*D. T. Ho, PhD—air-water gas exchange, tracer oceanography, carbon cycle, and environmental geochemistry
*D. M. Karl, PhD—microbiological oceanography, oceanic productivity, biogeochemical fluxes
*C. Kelley, PhD—deepwater habitats, ecology and fisheries, seafloor mapping and GIS
*P. Kemp, PhD—growth, activity and diversity of marine microbes; biosensor applications in microbial oceanography; molecular ecology of marine bacteria
*R. C. Kloosterziel, PhD—geophysical fluid dynamics, hydrodynamic, hydromagnetic stability
*D. S. Luther, PhD—oceanic waves from infragravity to Rossby, mesoscale variability, eddy-mean flow interaction, topography-catalyzed mixing, instrumentation, ocean observatories initiative
*J. P. McCready, Jr., PhD—equatorial ocean dynamics, coupled ocean-atmospheric modeling, general ocean circulation, coastal ocean dynamics, ecosystem modeling
*M. McManus PhD—coastal circulation, mesoscale processes, physical-biological interactions in the ocean
*G. McMurtry, PhD—geochemistry of marine deposits, seafloor venting processes, chemical volcanology, stable and radionuclide geochemistry, geochronology, in situ instrumentation development
*C. Measures, PhD—trace element geochemistry, shipboard analytical methods, atmospheric deposition to the oceans, elemental mass balances
*M. A. Merrifield, PhD—physical oceanography, waves, currents, sea level variability
*C. E. Nelson, PhD—microbial ecology and ecosystem science in oceans, coral reefs, and freshwater habitats
*A. Neuheimer, PhD—quantitative marine ecology of fish and invertebrates
*B. S. Powell, PhD—numerical modeling, variational data assimilation, ocean predictability, ocean dynamical modes, and ocean ecosystem dynamics
*B. Qiu, PhD—large-scale ocean circulation, ocean atmosphere interaction, satellite observations, and numerical modeling of ocean circulation
*K. Richards, PhD—ocean mixing processes, circulation and dynamics, ocean-atmosphere interaction, ecosystem modeling
*K. Ruttenberg, PhD—biogeochemistry of phosphorus and associated bioactive elements in freshwater and marine aqueous and sedimentary systems, sediment diagenesis, organic matter reactivity and mineral authigenesis, effect of redox chemistry on element cycling, global biogeochemical cycles
J. Ruzicka, PhD—development of analytical methodology using sequential injection analysis (SIA) and other platforms, application of SIA technology to the development of assays for oceanographic applications including trace elements and macro-nutrients
*F. J. Sansone, PhD—biogeochemistry of permeable (sandy) sediments, coastal processes, trace-gas biogeochemistry, hydrothermal geochemistry
*N. Schneider, PhD—decadal climate variability, tropical air-sea interaction, coupled modeling
*J. E. Schoonmaker, PhD—sedimentary geochemistry and diagenesis, interpretation of paleoenvironment and paleoclimate sedimentary records
*K. Selph, PhD—biological oceanography, microbial ecology, protistan grazer feeding dynamics, phytoplankton distributions, use of flow cytometry in ecological research
*C. R. Smith, PhD—benthic ecology, deep-sea biology, sediment biogeochemistry, climate-change effects on Antarctic ecosystems, marine conservation
*G. F. Steward, PhD—marine bacteria and viruses, microbial genomics, molecular ecology and biogeochemical cycles
*A. Timmermann, PhD—tropical climate variability, large-scale ocean circulation, Paleoceanography, Earth-system modeling
K. Weng, PhD—behavior migration and habitat use of sharks and fishes, oceanography of key habitats of pelagic nektobenthos, fishery management and conservation
*R. E. Zeebe, PhD—global biogeochemical cycles, carbon dioxide system in seawater and interrelations with marine plankton, paleoceanography, stable isotope geochemistry

Cooperating Graduate Faculty
F. Ascani, PhD—ocean dynamics, marine ecosystem dynamics, climate, nonlinear science
W. L. Au, PhD—bioacoustics and ecological acoustics of the marine environment
J. M. Becker, PhD—geophysical fluid dynamics, coastal processes, general ocean circulation
R. Bidigare, PhD—bio-optical oceanography, nutrient cycling, phytoplankton pigment biochemistry, intermediary metabolism of marine plankton
M. Cooney, PhD—isoaltion of antifouling compounds from marine alage, bioreactor design, and continuous cultivation of marine bacteria and copepods
E. Gaidos, PhD—evolutionary genomics, geomicrobiology, astrobiology, paleobiology, and Earth history
R. D. Gates, PhD—regulation and de-stabilization of coral/dinoflagellate symbioses, evolution and development of animal sensory systems
P. H. Lenz, PhD—neuroecology of zooplankton sensory systems
G. Pawlak, PhD—coastal and estuarine mixing processes, stratified flows, sediment transport and laboratory experimental methods
B. Popp, PhD—stable isotope biogeochemistry, marine organic geochemistry, isotopic biogeochemistry of individual biomarkers and gases
M. Rappe, PhD—phylogenetic, genomic, and metabolic diversity of microorganisms including marine plankton, coral reef, and deep subsurface ecosystems
F. Thomas, PhD—coral reef and coastal ecology, reproductive biology, hydrodynamics and biomechanics
R. Toonen, PhD—larval ecology, coral reef biology, evolution, phylogeny and conservation genetics of marine invertebrates
J. C. Wiltshire, PhD—geology and geochemistry of marine mineral deposits, marine mining and processing, minerals policy issues, research-subsmerible technology

Affiliate Graduate Faculty
A. Andrews, PhD—fishes from all marine environments, geochemical techniques to validate age growth
J. Aucan, PhD—surface waves and extreme wave events that can cause serious coastal flooding, ocean mixing and turbulence induced by internal waves
R. Brainard, PhD—tropical reef-ecosystem integration, with a particular emphasis on the role of ocean variability on ecosystem health
P. Falkowski, PhD—phytoplankton evolution and ecology, photosynthesis, coral biology, and biogeochemical cycles
J. L. Falter, PhD—coral reef biogeochemistry, near-shore hydrodynamics
C. M. Holl, PhD—stable isotopes, microbial N and C Cycling
D. W. Moore, PhD—geophysical fluid dynamics, general ocean circulation, coastal ocean mixing, instrumentation, ocean observatories initiative
E. Gaidos, PhD—evolutionary genomics, geomicrobiology, astrobiology, paleobiology, and Earth history
R. D. Gates, PhD—regulation and de-stabilization of coral/dinoflagellate symbioses, evolution and development of animal sensory systems
P. H. Lenz, PhD—neuroecology of zooplankton sensory systems
G. Pawlak, PhD—coastal and estuarine mixing processes, stratified flows, sediment transport and laboratory experimental methods
B. Popp, PhD—stable isotope biogeochemistry, marine organic geochemistry, isotopic biogeochemistry of individual biomarkers and gases
M. Rappe, PhD—phylogenetic, genomic, and metabolic diversity of microorganisms including marine plankton, coral reef, and deep subsurface ecosystems
F. Thomas, PhD—coral reef and coastal ecology, reproductive biology, hydrodynamics and biomechanics
R. Toonen, PhD—larval ecology, coral reef biology, evolution, phylogeny and conservation genetics of marine invertebrates
J. C. Wiltshire, PhD—geology and geochemistry of marine mineral deposits, marine mining and processing, minerals policy issues, research-subsmerible technology

Emeriti Graduate Faculty
A. Clarke, PhD—sea-salt and marine aerosols, global pollution, atmospheric optics, aerosol-cloud studies, biogeochemical cycles
B. J. Huebert, PhD—air pollution, climate change, atmospheric aerosols, global elemental cycles, air-sea gas exchange
Y. H. Li, PhD—marine geochemistry, marine pollution studies
R. Lukas, PhD—equatorial circulation, air-sea interaction, climate variability, ocean observing systems
F. Mackenzie, PhD—geochemistry, sedimentology, greenhouse effect, biogeochemical cycles and global environmental change
L. Magaard, Dr. rer. nat.—ocean waves, oceanic turbulence, oceanography of Hawaiian waters, climate and society
P. Muller, PhD—theoretical oceanography, wave dynamics, stochastic (climate) models, foundations of complex system theories

Degrees Offered: MS in oceanography, PhD in oceanography

The Academic Program

Oceanography (OCN) is the study of the physics, chemistry, and geology of the ocean and the ecology of organisms that live within the sea. Physical oceanography is concerned with ocean circulation, waves, tides, upwelling, air-sea interactions, and the effect of the oceans on climate. Chemical oceanographers study the distribution of dissolved substances in the ocean and the mechanisms, both natural and anthropogenic, that control their form and abundance. Geological oceanography includes the study of sea-floor spreading, submarine volcanism, beach formation, deep-seabed mineral resources, sediments, and pale-oceanography. Biological oceanographers study the interactions of marine organisms with one another and the environment; topics include coral reef ecology, marine fisheries, hydrothermal-vent communities, plankton ecology, and near-shore and deep-sea benthic communities.

Because Hawai‘i is located near the middle of the largest ocean on Earth, oceanography has a special significance for the state and UH Mānoa. At UH Mānoa, the oceanography facilities are among the best in the U.S. and include three ocean-going research vessels and two research submarines. Biological studies are facilitated by the presence of the Hawai‘i Institute of Marine Biology on Coconut Island in Kāne‘ohe Bay. Computing facilities are based on a growing network of nearly 300 Sun workstations, Macintosh, and personal computers. Precision instruments include mass spectrometers, gas and liquid chromatographs, liquid scintillation counters, a CHN analyzer, a flow cytometer, and a series of atomic spectroscopy-based instruments. The world-class faculty is actively involved in both teaching and research. UH Mānoa ranks fifth among universities in the nation in terms of National Science Foundation research funding for oceanographic research. The location, the facilities, and the faculty all make UH Mānoa an ideal place to study oceanography.

About 40 percent of marine scientists are employed by the U.S. government, especially by the defense, commerce, and interior departments. Another 40 percent teach and do research at academic institutions. About 20 percent are employed by industry.

The MS and PhD in oceanography are recognized WICHE regional graduate programs. Residents of Alaska, Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, Utah, Washington, and Wyoming are eligible, upon admission, to enroll at Hawai‘i-resident tuition rates.

Advising

Each student admitted to the oceanography department is assigned an advisory committee by the department chair. The committee initially consists of three graduate faculty members from at least two of the subdisciplines of oceanography. When formed, the student’s MS or PhD committee becomes the student’s advisory committee. A student must meet with his or her advisory committee at least twice per year. A written report summarizing each meeting must be signed by the student and his or her committee and a copy placed in the student’s file.

Graduate Study

The department offers master’s and doctoral programs with areas of specialization in biological and physical oceanography, marine geology, and geochemistry. Oceanography courses listed in this Catalog may be taken for credit in the degree program. Additional courses may be selected from such fields as botany, chemistry, engineering, geology, mathematics, meteorology, physics, and zoology.

Admission Requirements

Applicants must have intensive, rigorous training in one of the basic sciences or engineering. Regardless of major, an applicant must have completed mathematical training, including calculus through first-order ordinary differential equations (equivalent to Calculus IV at UH Mānoa). An applicant must also have a year each of physics and chemistry. The well-prepared student will also have covered classical thermodynamics and applied differential equations and will have had a semester each of biology and geology. GRE test scores (General Test only) are required. Interested students should contact the department chair for further information. For U.S. applicants, the deadline for application for admission is January 15 for the fall semester and September 1 for the spring semester. For foreign applicants, the corresponding deadlines are January 15 and August 1.

Major Requirements

All students pursuing a degree program must take OCN 620, 622, and 623. For non-biological students, the sequence is completed by taking OCN 621. Biological students complete the sequence by taking OCN 626, 627, and 628. Marine geology and geochemistry students must take CHEM 351 (if they have not already successfully completed a college-level course in physical chemistry). Students may be admitted to the MS program upon successful completion of the appropriate sequence. To be admitted to the PhD program, a student must receive a positive recommendation from a PhD-qualifying committee.

Degree Requirements

Both the MS and PhD programs require a minimum of 36 credit hours, including 24 credit hours of course work. The 24 semester hours of course work must be in courses numbered 600 or above (excluding OCN 699 and 700 and seminar courses). At least 12 of those semester hours must consist of courses taken from three of the following groups: biological oceanography, geological oceanography, chemical oceanography, physical oceanography, mathematical methods and statistics, and meteorology. MS students are required to take six credits of OCN 699 (Directed Research) and six credits of OCN 700 (Thesis Research).

Prior to completion of their graduate degree, biological oceanography students must have satisfactorily completed either a graduate thesis or an undergraduate thesis in statistics. Students specializing in marine geology and geochemistry must take at least one and preferably more, advanced biogeochemistry course. All students must complete a seminar requirement, demonstrate computer competency, and accumulate at least 30 days of field experience. PhD candidates must also pass a comprehensive examination. All students must pass a final oral examination in defense of their thesis/dissertation.
Outreach College

Administration
Sinclair Library, Room 301
2425 Campus Road
Honolulu, HI 96822
Tel: (808) 956-8866
Fax: (808) 956-3752
Web: www.outreach.hawaii.edu
Interim Dean: William G. Chismar
Interim Associate Dean: Harriet Abe

General Information
Outreach College partners with academic and support units at UH Mānoa to provide for the educational needs of the community through flexible scheduling and innovative methods of program/course delivery. Key program and service activities of the college include:
- Academic Advising and Student Support Services
- Community Service/Public Events Programs
- Credit Programs
- International Programs
- Noncredit Programs
- Summer Sessions

Mission
Outreach College initiates and provides innovative, diverse, and flexible quality educational opportunities for life-long learners, extending the resources of UH Mānoa to serve the state, nation, and world.
Utilizing a scope of classroom, arts, cultural, and advanced technological modes of delivering learning experiences, the Outreach College staff is committed to assessing and responding to the educational needs of targeted and under-served learners.
In addition, Outreach College:
- Provides supportive guidance and services to its participants;
- Presents programs and collaborations that reflect/enhance the community’s educational and cultural diversity; and
- Serves as a leader in the UH Mānoa development of distance learning.

Through all of its programs, Outreach College inspires and engages learners to recognize education as a valuable lifetime investment.

Affiliations
Outreach College is affiliated with the University Professional and Continuing Education Association, the Association of University Summer Sessions, the North American Association of Summer Sessions, the Western Association of Summer Session Administrators, Western Arts Alliance, and Association for Continuing Higher Education.

Degrees and Certificates
Outreach College is a non-degree granting academic support unit, which delivers, in collaboration with departments and colleges, credit courses applicable towards UH Mānoa degrees and certificates. Outreach College offers courses during the day and evening, primarily to serve degree students of UH Mānoa. However, these courses are open to UH System students, qualified residents and non-residents, and in the summer to select high school students. Non-credit certificates are offered in various areas of professional development.

Advising
Student Services
Sinclair Library, Room 301
2425 Campus Road
Honolulu, HI 96822
Tel: (808) 956-7221
Fax: (808) 956-3752
Email: ocadvise@hawaii.edu
Web: www.outreach.hawaii.edu

Office of Student Services provides support services to non-degree seeking students. Services include advisement on UH Mānoa admissions procedures and policies, general UH Mānoa policies, degree programs, course selection, and UH System offerings, as well as enrollment and registration for courses delivered by Outreach College.
Credit Programs
828 Fort Street Mall, Suite 400
Honolulu, HI 96813
Mailing Address: Box 447
2440 Campus Road
Honolulu, HI 96822
Tel: (808) 956-6780
Fax: (808) 956-3364
Email: jon.matsuda@hawaii.edu
Web: www.outreach.hawaii.edu/credit

Outreach College credit courses and programs are offered during the days and evenings throughout the year. Offerings are regularly approved UH Mānoa courses as well as any new or experimental courses approved by UH Mānoa. Instructors are UH Mānoa faculty or lecturers approved by the respective academic departments. In addition, the credit programs unit coordinates distance learning credit activity for the UH Mānoa campus, thus extending the resources of the UH Mānoa campus to the neighbor islands, Pacific Basin, and beyond.

The majority of UH Mānoa distance delivered courses are coordinated by Outreach College. Courses and degree programs are delivered via interactive television, the web, and faculty traveling to off-campus sites. Outreach College is represented on the Distance Learning Advisory Council and the Master Scheduling Group, both UH System committees, and the UH Mānoa Distance Learning Committee.

International students studying in the U.S. on the F-1 or J-1 student visa should note that there are credit limits for enrolling in online courses or online programs. For more information, please click on the Distance Education link on the International Student Services website at www.hawaii.edu/issmanoa.

Major Credit Programs
- Baccalaureates and advanced degrees from UH Mānoa colleges of Architecture, Education, Myron B. Thompson School of Social Work, Shidler College of Business, and Nursing are offered.
- Neighbor Island Outreach. The UH Mānoa Outreach on Maui office as well as the University Centers on Kaua‘i, Maui, and in West Hawai‘i provide on-site support to neighbor island students enrolled in Mānoa Programs. The UH Mānoa Outreach on Maui office also assists students to complete a bachelor of arts degree in Interdisciplinary Studies with a major emphasis in “Human Relations in Organizations.”
- Overseas Program. On-site education courses are offered in American Samoa.
- Credit Specials. These courses are tailored to meet the needs of a target group; they may condense academic work into shorter time periods and adapt it to special locations and more convenient times.
- Dual Listed Courses. Unfilled seats in selected day school courses are made available to qualified community members.
- Come Back to Mānoa. A program reaching out to undergraduate seniors who stopped attending UH Mānoa and supporting them in their efforts to return and graduate.

Come Back to Mānoa
Sinclair Library, Room 301
Tel: (808) 956-6583
Email: cbmanoa@hawaii.edu
Web: www.outreach.hawaii.edu/credit/come_back

Come Back to Mānoa (CBM) is a new program designed for undergraduate seniors who, for whatever reasons, voluntarily departed UH Mānoa before completing their first bachelor’s degree. CBM provides a variety of support services to help returning students successfully finish and graduate. Students who have stopped out for at least two semesters (excluding summer, approved leaves of absence, and study abroad), have earned 90 or more credits, and have at least a 2.0 GPA are eligible to participate. CBM serves as an advocate for participating students and provides encouragement, guidance, and assistance. Serving as a single point of contact to help students navigate the final hurdles to graduation, CBM actively partners with students to identify a plan for the quickest attainment of their degree and support them in overcoming barriers to completion.

Summer Sessions
828 Fort Street Mall, Suite 400
Honolulu, HI 96813
Mailing Address: Box 447
2440 Campus Road
Honolulu, HI 96822
Tel: (808) 956-9246
Fax: (808) 956-3364
Email: summer.programs@hawaii.edu
Web: www.outreach.hawaii.edu/summer

The summer period of the UH Mānoa campus offers opportunity for variety and flexibility in instructional programming, while creating a culturally enriching and intellectually stimulating campus environment through special lectures, conferences, and artistic performances that are open to both students as well as the larger public.

Students from almost every state in the nation and more than 50 countries attend classes in the summer, joining resident students to enhance the diversity of the campus. The summer campus also provides a stimulating array of noncredit classes, public programs, and special events.

Summer Sessions has received numerous awards from the Western Association of Summer Session Administrators and the North American Association of Summer Sessions for its exemplary and innovative programs.

Early Start Program
Web: www.outreach.hawaii.edu/EarlyStart

The UH Mānoa Early Start Program (ESP) offers newly admitted fall freshmen a smooth transition from high school to college and an early start on their college experience. Students attend classes during the less hectic summer months when there’s easier access to faculty and staff, time to explore the campus, and an array of social and cultural activities.

Summer Scholar Program for High School Students
Web: www.outreach.hawaii.edu/summerscholar

High school sophomores and juniors with at least a 3.5 GPA may enroll in a 100–200 level course in summer sessions at UH Mānoa. Summer scholars are mainstreamed with other summer students. Over 1,500 high school students have successfully participated in this program over the past 21 years. The program
enables high school students to earn college credit and learn what college life is like before graduating from high school.

**International Programs (non-credit)**
Sinclair Library, Room 301
2425 Campus Road
Honolulu, HI 96822
Web: www.nice.hawaii.edu

**University Preparation Program**
Tel: (808) 956-3412
Fax: (808) 956-3421
Email: upinfo@hawaii.edu
Web: www.outreach.hawaii.edu/up

The University Preparation Program is a two-semester program designed to prepare college-bound international students for admissions to and success in American undergraduate degree programs. Course work includes non-credit classes in intensive English, TOEFL and SAT preparation, academic study skills, and intercultural communication, as well as some introductory credit coursework in the second semester. Program features include mentoring, tutoring, personalized advising, and assistance with the university application process. Students may begin the program in either the fall or spring semester.

**New Intensive Courses in English (NICE)**
Tel: (808) 956-7753
Fax: (808) 956-3421
Email: ipinfo@hawaii.edu
Web: www.nice.hawaii.edu

The NICE Program is a non-credit English language program open to non-native speakers of English interested in improving their English communication and cross-cultural understanding. Study options include English courses for academic, business, and general purposes. Classes are offered to suit the study schedules of a variety of individuals: four 10-week sessions per year (full-time or part-time study), and 3-week sessions in winter and summer. Admission to NICE is open to international students and scholars, and to resident non-native speakers living in Hawai‘i.

**Special English Programs (SEP)**
Tel: (808) 956-3416
Fax: (808) 956-3421
Email: michikos@hawaii.edu

SEP provides noncredit English language and American culture programs for groups of students from international educational institutions or companies. SEP is uniquely designed to suit the needs, schedules, requirements, and interests of the sponsoring school or organization.

**International Seminars**
Tel: (808) 956-3416
Fax: (808) 956-3421
Email: michikos@hawaii.edu

The International Seminars Program provides groups of international students and professionals exposure to current American perspectives and practices in their area of study or profession. Highly qualified professors and community professionals speak on topics requested by the sponsoring organization with translation, or in the participants’ native language.

**Professional and Special Programs (non-credit)**
828 Fort Street Mall
Suite 400
Honolulu, HI 96813
Mailing Address:
Box 447
2440 Campus Road
Honolulu, HI 96822
Tel: (808) 956-8244
Fax: (808) 956-3364
Email: noncred@hawaii.edu
Web: www.outreach.hawaii.edu/noncredit

The Professional and Special Programs Office establishes and administers noncredit courses to provide individuals and groups with the opportunity to maintain professional skills, advance in or change careers, or pursue personal development and enrichment. Although noncredit courses do not apply toward the requirements for a college degree, many do qualify for professional continuing education units. Students who complete attendance requirements may receive certificates upon completion of their courses of study.

Courses are held on- and off-campus locations, as well as online. They are often relatively short and are presented in a variety of formats, such as workshops, short courses, studios, lectures, and institutes. In general, noncredit courses are open to anyone who is at least 18 years of age or a high school graduate.

Although most courses are offered during three regularly scheduled terms per year, specialized programs for particular groups (e.g., librarians, teachers, engineers, etc.) or contract training for both public and private organizations, can be arranged. Class length, number of meeting times, and locations vary, depending on program objectives and specific needs of students.
Institute for Business and Professional Development
Tel: (808) 956-8244
Email: noncred@hawaii.edu
Web: www.outreach.hawaii.edu/ibpd

The Institute for Business and Professional Development offers continuing education programs for business people, entrepreneurs, professionals, and those seeking to meet professional certification requirements, or to improve career opportunities.

Pacific New Media
Tel: (808) 956-3422
Email: pnm@hawaii.edu
Web: www.outreach.hawaii.edu/pnm

Pacific New Media offers short intensive workshops in film, video, photography, and digital media presented by outstanding professionals from Hawai‘i and the continental U.S. Certificates in web design and digital imaging are also offered through the program.

Community Services Programs
Sinclair Library, Room 301
2425 Campus Road
Honolulu, HI 96822
Tel: (808) 956-8246
Fax: (808) 956-3752
Email: csinfo@hawaii.edu
Web: www.outreach.hawaii.edu/community

The Community Services Division coordinates the arts and culture outreach efforts of UH Mānoa. Major projects include the Statewide Cultural Extension Program (SCEP), University of Hawai‘i Presents (UHP) and the Asia Pacific Dance Festival (APDF). Through SCEP, Outreach College presents over 179 performances each year in schools, libraries, nursing homes, prisons, senior centers, and other venues throughout the state. UHP presents 6 to 8 performances of national and international touring companies for the UH Mānoa campus and the general public. APDF is the premiere dance festival in the Asia Pacific region and is presented biennially in association with the East-West Center and other university and community organizations. The festival includes courses, forums, outreach, ritual ceremony, video documentation, and performances.
Administration
Moore Hall 310
1890 East-West Road
Honolulu, HI 96822
Tel: (808) 956-8818
Fax: (808) 956-6345
Web: manoa.hawaii.edu/spas/
Dean: R. Anderson Sutton

General Information
Strategically located with a multicultural heritage, the state of Hawai‘i has always been uniquely international in outlook. Reflecting this perspective, the School of Pacific and Asian Studies (SPAS) represents the ongoing commitment of UH Mānoa to enhance international awareness and intercultural understanding throughout the educational experience. In fulfilling this commitment, SPAS has become one of the largest resource facilities for Asian and Pacific studies in the world.

Established in 1987, SPAS offers academic programs in Asian studies and Pacific Islands studies. SPAS also houses the Centers for Chinese Studies, Japanese Studies, Korean Studies, Okinawan Studies, Pacific Islands Studies, Philippine Studies, South Asian Studies, and Southeast Asian Studies. Through these centers and programs, SPAS helps to coordinate the efforts across UH Mānoa of some 300 faculty specialists who offer more than 600 courses related to Asia and the Pacific.

Research supported by SPAS appears in a wide range of journals, monographs, and occasional papers published by its centers and programs. Complementing these publications are monographs, translations, and journals published by SPAS or one of its centers in association with UH Press.

Research and publications, specialized training and instructional programs, conferences, symposia, resources development, and a full schedule of co-curricular activities and cultural programs are all a part of the School of Pacific and Asian Studies. Students electing to focus their studies on Asia or the Pacific at UH Mānoa will discover a unique learning environment especially appropriate to the understanding and appreciation of the peoples and cultures of the region.

Degrees and Certificates
Bachelor’s Degree: BA in Asian studies, BA in Pacific Islands studies
Master’s Degrees: MA in Asian studies, MA in Pacific Islands studies
Certificate Programs: Graduate Certificates in Pacific Islands, Chinese, Japanese, Korean, Philippine, South Asian, and Southeast Asian studies

Advising
Asian Studies
Undergraduate students
Pattie Dunn
Moore 407
1890 East-West Road
Honolulu, HI 96822
Tel: (808) 956-7814
Email: pdunn@hawaii.edu

Graduate students
Barbara Andaya, PhD
Moore 413
1890 East-West Road
Honolulu, HI 96822
Tel: (808) 956-4735
Email: bandaya@hawaii.edu

Pacific Islands Studies
Undergraduate students
Julie Walsh, PhD
Moore 211
1890 East-West Road
Honolulu, HI 96822
Tel: (808) 956-2668
Email: jwalsh@hawaii.edu

Graduate students
Terence Wesley-Smith, PhD
Moore 209
1890 East-West Road
Honolulu, HI 96822
Tel: (808) 956-7700
Email: twsmith@hawaii.edu

Students interested in Asian studies and Pacific Islands studies are urged to consult with the appropriate school advisor listed above and thoroughly check out each website.

Undergraduate Programs
Requirements
• Acquire a minimum total of 120 credit hours.
• Earn at least 60 credit hours in courses numbered 300 or above for the Asian Studies Program; earn at least 45 credit hours in courses numbered 300 or above for the Pacific Islands Studies Program.
hours in courses numbered 300 or above for the Pacific Islands Studies Program.

- Fulfill the UH Mānoa General Education Core requirements and additional basic course work specified by the degree program.
- Complete writing intensive courses as specified by UH Mānoa.
- Fulfill requirements for the major.
- Earn at least a 2.0 GPA for all UH Mānoa registered credits.

Prospective students interested in the BA in Asian studies or the BA in Pacific Islands studies should contact the respective department or refer to the program listing in the Catalog.

Graduate Programs

Prospective students interested in the MA in Asian studies or the MA in Pacific Islands studies should contact the respective program or refer to the program listing in the Catalog.

Instructional/Research Facilities and Programs

Center for Chinese Studies

The Center for Chinese Studies (CCS) aims broadly at an increased understanding of contemporary China in light of its history and its hopes for the future. It pursues this goal through instruction from 32 faculty members in 16 departments who teach approximately 150 China-related courses; research by faculty, who publish an average of six books and a score of articles on China each year; service publications, such as its quarterly journal China Review International, which provides an overview of current world wide scholarship on China; a website (www.ccs-uhm.org); and community outreach, conferences, and national and international linkages with institutions such as Peking University, Beijing Foreign Studies University, the National Taiwan University, and the Chinese University of Hong Kong. CCS has housed a Confucius Institute, funded by the PRC Ministry of Education to promote Chinese language and cultural studies in Hawai‘i since 2006.

By creating a stimulating environment for the faculty and the approximately 100 mainly graduate students specializing in Chinese studies, CCS supplements basic scholarly offerings, and focuses attention on the university’s significant resources for the study of China. These include the Asia Collection in Hamilton Library, the Wong Audiovisual Center in Sinclair Library, and the multimedia collection of the Language Telecommunication Resource and Learning Center.

The center is part of the National Resource Center for East Asian Studies, which, together with Japan and Korea, are supported by major funding from the U.S. Department of Education.

Center for Japanese Studies

The Center for Japanese Studies (CJS) promotes the study of Japan within a global context across academic disciplines at UH Mānoa. Japanese studies faculty include 38 professors, 15 Japanese language instructors, 3 library specialists, and a chanoyu (tea ceremony) instructor who offer over 100 courses in 14 instructional or department units to approximately 3,500 students annually. An integral part of CJS is the Dr. Sen Sosshitsu International Way of Tea Center, which serves to perpetuate tea culture by offering tea practicum courses and coordinating tea-related outreach projects. CJS coordinates the Title VI National Resource Center East Asia grant, which includes curriculum development, outreach, and library development projects in East Asia. The center’s role is to act as a coordinating body for Japanese studies at UH Mānoa and as a clearinghouse for inquiries related to the field; in this role, CJS offers student scholarships and faculty professional development funding, provides student advising, sponsors seminars and conferences on Japan, sponsors visiting scholars, coordinates a summer student internship program in Ehime (along with the Japan-America Society of Hawai‘i), and administers partnerships with overseas research institutes.

Center for Korean Studies

The Center for Korean Studies coordinates and develops UH Mānoa’s resources for the study of Korea. The 44 faculty members affiliated represent the disciplines of anthropology, architecture, art, music, business, communication, economics, English, ethnomusicology, history, language, linguistics and literature, law, political science, social work, sociology, and urban planning. The center promotes interdisciplinary and intercultural approaches to Korean studies, conducts scholarly conferences, sponsors research projects, presents specialists and visiting scholars in colloquia, publishes scholarly works and an interdisciplinary journal Korean Studies, and coordinates UH Mānoa resources on Korea and researches the activities of Hawai‘i’s Korean community. The center maintains a special collection of personal libraries and private papers of distinguished scholars on Korea. It also has a small collection of books, journals, audiovisual materials, and other documents as an adjunct to the UH Mānoa library’s Korean collection.

Center for Okinawan Studies

The Center for Okinawan Studies (COS) was established in 2008, and has the distinction of being the only center of its kind outside of Japan. COS is a coordinating unit with a mission to promote Okinawan Studies. It strives to enhance the study and understanding of the history, culture, environment, and societies of the Okinawan/Ryukyu peoples, including diaspora. COS is committed to supporting the research and teaching of Okinawa/Ryukyu-related subjects by its faculty, staff, and students, as well as providing outreach to the general community in the form of workshops, lectures, seminars, and conferences. It also supports the student-exchange program with the University of the Ryukyus. Collaborative works with the University of the Ryukyus and other institutions are also being planned for future projects.

Center for Pacific Islands Studies

The Center for Pacific Islands Studies brings together people and resources to promote an understanding of the Pacific Islands and issues of concern to Pacific Islanders. Its innovative instructional program is regional, comparative, and interdisciplinary in nature. After 60 years of offering the nation’s first and only MA program for the study of the Pacific Islands, the center launched a BA program in 2011. The center sponsors an annual conference and a seminar series that features a variety of visitors en route to and from other Pacific Islands. The program publishes a blog, a series of occasional papers, and, in collaboration with the UH Press, the Pacific Islands Monograph Series, and The Contemporary Pacific: A Journal of Island Affairs.
Center for Philippine Studies
The Center for Philippine Studies at UH Mānoa is the only university center offering a comprehensive academic program on Philippine studies in North America. With an interdisciplinary faculty based in various departments, it promotes a broad understanding of Philippine society and culture, including Filipinos in Hawai‘i and in the diaspora, through academic course offerings, library resources, lectures and seminars, scholarly conferences, research and publications, visiting faculty, international exchange programs, cultural presentations, outreach with the Filipino community in Hawai‘i and in the homeland, institutional linkages, and other professional activities. UH Mānoa has a large concentration of internationally known Philippine specialists and experts in various disciplines. The center has served as the Secretariat for the International Conference on Philippine Studies (ICOPHIL), and works closely with the Philippine Studies Conference in Japan (PSCJ) held every four and three years, respectively, and with the Philippine Studies Group of the Association for Asian Studies in the U.S. every year. For more details, visit www.hawaii.edu/cps.

Center for South Asian Studies
The Center for South Asian Studies at UH Mānoa serves as an intellectual hub in the Pacific for research on and learning about a highly diverse region that encompasses Bangladesh, India, Pakistan, Afghanistan, Nepal, Bhutan, Tibet, Sri Lanka, Lakshadweep, and the Maldives Islands. The objective of the center, since its creation in 1985, is to promote interdisciplinary research on South Asia and the diaspora, and assist undergraduates and graduate students in the humanities, social sciences, and applied sciences to focus on societies and cultures of South Asia and the South Asian diaspora. The center’s activities include colloquia, invited lectures and workshops, an annual spring symposium, cultural programs, and outreach. The library’s South Asia collection is ranked among the top ten in the U.S. The center draws on the expertise of more than 40 distinguished faculty members whose research interests spread over India, Sri Lanka, Bangladesh, Pakistan, and Nepal. For more information, visit www.hawaii.edu/csap.

Center for Southeast Asian Studies
The center is one of only eight National Resource Centers (NRC) for the study of Southeast Asia in the U.S. as designated by the U.S. Department of Education. It acts as a coordinating body for Southeast Asian studies throughout the university. With more than 55 affiliated faculty members distributed through 21 departments, the center interacts with the largest concentration of Southeast Asia specialists in the U.S.

CSEAS is responsible for administering and awarding the Foreign Language and Area Study (FLAS) fellowships. In support of academic research, the center will spearhead projects in collaboration with our Department of Theatre & Dance and our Minority Serving Institutions at Kapio‘lani Community College and Windward Community College. Support to grow the Southeast Asia Collection at Hamilton Library also plays a major part in our long-term planning.

The center works to promote Southeast Asian studies nationally through its support of teacher training by providing in-country learning experiences. CSEAS will partner with our colleagues at the Center for Religious and Cross Cultural Studies at Gadjah Mada University in Indonesia for both humanities and STEM projects over the next four years.

Locally, CSEAS acts as a clearinghouse initiating and publicizing events on the campus with a Southeast Asia focus including a twice-monthly speaker series and its popular website and well-developed social media profile. The center has a strong commitment to outreach programs with its support of Indonesian theatre/dance performance, and continues to broaden public interest in Southeast Asia through a weekly film series now in its 10th season. More information on UH Mānoa Center for Southeast Asian Studies can be found at www.cseashawaii.org.

Campus Events and Community Programs
SPAS and its centers sponsor lectures, colloquia, teacher workshops, conferences, film festivals, concerts, and special events, such as the Grand Kabuki performance, Chinese martial arts performances, and the Southeast Asian Randai theatrical training and performance. The centers’ outreach programs take UH Mānoa expertise into the community and secondary schools.

Asian Studies
Moore 416
1890 East-West Road
Honolulu, HI 96822
Tel: (808) 956-6085
Fax: (808) 956-2682
Web: manoa.hawaii.edu/asianstudies/

Faculty
*B. Andaya, PhD (Chair)—history, Southeast Asia (Malaysia, Indonesia)
*P. Abinales, PhD—political science, Southeast Asia (Philippines)
*M. Aung-Thwin, PhD—history, Southeast Asia (Myanmar)
*C. Clayton, PhD—anthropology, East Asia (China)
*E. Harwit, PhD—political science, East Asia (China)
*R. Kwok, PhD—urban and regional planning, East Asia (China)
*Y. Park, PhD—anthropology, East Asia (Korea)
*M. Sharma, PhD—anthropology, South Asia (India)
*A. Stirr, PhD—ethnomusicology, South Asia (Nepal)

Area Centers: Directors and Faculty
C. Allen, PhD—Associate Director, Korean Studies
*L. Carlile, PhD—Director, Japanese Studies
*J. Chinen, PhD—Director, Okinawan Studies

* Graduate Faculty
The Academic Program

Asian studies is the study of Asia. At UH Mānoa, it covers a broad arc that begins in the west with South Asia, moves south toward Southeast Asia, and then east to East Asia. The approach to this study is interdisciplinary, taught by faculty trained in the geography, history, anthropology, political science, sociology, language and literature, ethnomusicology, performing arts, and urban and regional planning of Asia.

In addition to the faculty in SPAS, there are approximately 286 faculty and staff who are Asia specialists in different departments and programs throughout the campus. 600 courses on Asia (or with substantive Asia content) are taught at UH Mānoa, a unique strength the Asian Studies Program utilizes in crafting its BA and MA degrees.

ASP offers an unprecedented opportunity for students to study a wide range of topics, disciplines, and methodologies to design their individual programs to suit their particular interests. This interdisciplinary approach to the study of Asia, focused on the social sciences and humanities, is the heart of the program’s mission. Finally, competency in an Asian language commensurate with the student’s focus and level is considered fundamental, and is a required part of the program.

Advising

Graduate students are advised by the appropriate area director or designated faculty. Undergraduates majoring in Asian studies are advised by an undergraduate studies advisor.

Undergraduate Study

Bachelor’s Degree

The undergraduate program in Asian studies is designed for students desiring a liberal arts education and a broad background in traditional and contemporary Asian cultures. Students seeking a BA in Asian studies must meet all the requirements for admission established by SPAS.

Asian studies is normally declared as a major at the end of the sophomore year or beginning of the junior year though students may apply for admission to the program at any time. The formal declaration is made through the school’s Student Academic Services Office.

Program Requirements

- Earn at least 2.0 GPA (C average) for all UH Mānoa registered courses
- Register for all required courses (core, major, minor, and certificates) for a letter grade
- Earn a grade of C (not C-) or better in each course applied to the major, minor, and certificate requirements
- 60 upper division credits of 300+ courses

Major Requirements

- Total of at least 36 credit hours of Asia-related course work
- ASAN 201 and 202, 310 and 312, and 6 additional credit hours of ASAN courses at the 300 or 400 level
- Two years of an Asian language (excluding conversation or aural comprehension courses), or demonstration of the equivalent level

Majors must also complete one of the following study plans:

Plan 1:

- 12 credit hours of Asia-related course work from one of the following disciplines or areas: anthropology, art, economics, geography, history, linguistics, literature, music, philosophy, political science, religion, sociology, communicology, or theater and dance
- 9 credit hours of Asia-related courses outside the primary field of concentration, as approved by the advisor

Plan 2:

- 12 credit hours of course work on one Asian country or region (e.g., Japan, Southeast Asia)
- 9 credit hours focused on one or more additional Asian countries or regions

ASAN courses used to satisfy General Education Core requirements may not be used to satisfy major requirements or vice versa.

Language study beyond the required level may count toward the major and is encouraged for Asian studies majors.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Minor Requirements

There are no required courses for acceptance into the Asian Studies minor program. Attendance in ASAN 201-202 (Introduction to Asian Studies) is recommended.

Students must complete 15 credit hours including:

- ASAN 310 Asian Humanities or 312 Contemporary Asian Civilization (3 credits)
- ASAN courses numbered 300 and above (minimum 6 credits)
- Asia-related courses in disciplines other than the major field numbered 300 and above (maximum 6 credits)

It is possible to focus on one particular country or region, such as China, Japan, Korea, Philippines, Southeast Asia, or South Asia.
The Asian studies undergraduate advisor will identify Asia-related courses in various disciplines and assist in planning schedules and preparing minor forms.

**Graduate Study**

**Master’s Degree**

The master’s program in Asian studies is designed primarily for students who wish to focus their studies on a particular geographical and cultural region of Asia. Such an approach entails interdisciplinary study.

The MA in Asian studies is offered as Plan A (thesis) or Plan B (non-thesis). Although UH Mānoa does not offer a PhD in Asian studies, Asia-focused PhD programs are available in anthropology, East Asian languages and literatures, economics, geography, history, linguistics, music, philosophy, political science, public health, sociology, theater, and tropical agriculture.

Students who wish to pursue a doctoral degree in any of these fields should contact the appropriate department.

A student’s academic program should concentrate on one of the regions of Asia as represented by the area centers in SPAS: China, Japan, Korea, Okinawa, the Philippines, South Asia, or Southeast Asia. Regarding the latter two, a student may concentrate on a particular country within those regions if sufficient courses are available. The director of each area center or a designated faculty member serves as the graduate student advisor for his or her respective area.

Students without sufficient academic background in Asia-related course work may be required to take certain preparatory courses to make up this deficiency without credit toward the degree. Prospective students should note that the program requires successful completion of course work or demonstrable proficiency in an Asian language beyond the fourth-year level for students concentrating on Japan, at the fourth-year level for students concentrating on China or Korea, or the third-year level for students concentrating on the Philippines, South Asia, or Southeast Asia. Students enrolling from an Asian country may have the foreign language requirement waived if they plan to concentrate on their native country or region. If they elect to concentrate on a country other than their own, they must fulfill the language requirement as previously stated.

**Plan A (Thesis) Requirements**

The MA Plan A degree in Asian studies requires the following:

1. A minimum of 36 credit hours. Of these, at least 18 must be earned in courses numbered 600 or higher (including 6 credit hours in ASAN 700 Thesis Research)
2. Full-time study for a minimum of two academic semesters
3. A minimum of 6 credit hours in an Asian language equivalent to the following: Japanese—6 credit hours beyond the 401 and 402 level; Chinese—8 credit hours at the 401 and 402 level; Korean—6 credit hours at the 401 and 402 level; Philippine, South and Southeast Asian languages—6 credit hours at the 301 and 302 level (an entering student who has achieved this level and can demonstrate proficiency through examination may select alternate courses equaling 6 credit hours with the consent of the area advisor)
4. An introductory graduate seminar in the particular area of concentration (ASAN 600), taken at the beginning of the student’s program
5. A graduate research seminar in the particular area of concentration (ASAN 750)
6. A minimum of 3 additional credit hours in Asian studies
7. A minimum of 15 credit hours of interdisciplinary study related to the candidate’s country or region, with at least 3 credit hours each in the fields of humanities, social sciences, and arts. No more than 9 credit hours in one discipline will be counted. A maximum of 6 credits may be taken outside the country/region of focus, after consultation with academic advisor.
8. Satisfactory completion of a master’s thesis and an oral examination on the thesis given by the student’s three-member faculty committee

**Plan B (Non-thesis) Requirements**

The MA Plan B degree in Asian studies requires:

1. A minimum of 30 credit hours. Of these, at least 18 credits must be earned in courses numbered 600 or higher
2. Full-time study for a minimum of two academic semesters
3. A minimum of 6 credit hours in an Asian language equivalent to the following: Japanese—6 credit hours beyond the 401 and 402 level; Chinese—8 credit hours at the 401 and 402 level; Korean—6 credit hours at the 401 and 402 level; Philippine, South and Southeast Asian languages—6 credit hours at the 301 and 302 level (an entering student who has achieved this level and can demonstrate proficiency through examination may select alternate courses equaling 6 credit hours with the consent of the area advisor)
4. An introductory graduate seminar in the particular area of concentration (ASAN 600), taken at the beginning of the student’s program
5. A graduate research seminar in the particular area of concentration (ASAN 750)
6. A minimum of 3 additional credit hours in Asian studies
7. A minimum of 15 credit hours of interdisciplinary study related to the candidate’s country or region, with at least 3 credit hours each in the fields of humanities, social sciences, and arts. No more than 9 credit hours in one discipline will be counted. A maximum of 6 credits may be taken outside the country/region of focus, after consultation with academic advisor.
8. Satisfactory completion of a master’s thesis and an oral examination on the thesis given by the student’s three-member faculty committee

**Certificate Programs**

**Graduate Certificates**

SPAS, through its Asia focused centers, offers graduate certificates in the following areas: Chinese studies, Korean studies, Japanese studies, Philippine studies, South Asian studies, and Southeast Asian studies. Regularly enrolled graduate students in non-Asian studies disciplines receive a certificate for completing a program of study that focuses on a particular Asian country or region. MA students in Asian studies also receive a certificate for completing studies in their area of concentration.

**Certificate Requirements**

- 18 credits of course work, in a defined program of study, at UH Mānoa within the chosen certificate area
- Of these, 15 credits must be at 300-level or higher from at least two major divisions (social sciences, humanities, or arts), with no more than 9 credits in a single division, and at least 9 credits in graduate level courses (600 level or higher)
Pacific Islands Studies

Moore 210
1890 East-West Road
Honolulu, HI 96822
Tel: (808) 956-7700
Fax: (808) 956-7053
Web: www.hawaii.edu/cpis/

Faculty
*T. Wesley-Smith, PhD (Chair)—political science
*L. Bautista, PhD—sociology
*T. Kabutaulaka, PhD—political science
*A. Mawyer, PhD—anthropology
M. Nepia, PhD—spatial design
J. Walsh, PhD—anthropology

Affiliate Faculty
H. Aikau, PhD—political science
C. Bacchilega, PhD—English
J. Bayman, PhD—anthropology
M. Boyce, PhD—Māori language
T. Brislin, PhD—Academy for Creative Media
*W. Chapman, PhD—American studies
*D. Chappell, PhD—history
S. Dawrs, MA—Pacific specialist librarian
J. Hamilton Faris, PhD—art and art history
G. Finin, PhD—East-West Center Pacific Islands Development Program
A. Golub, PhD—anthropology
N. Goodyear-Kaopua, PhD—political science
*M. Hamnett, PhD—Research Corporation of the University of Hawai‘i
*D. Hanlon, PhD—history
V. Hereniko, PhD—Academy for Creative Media
K. Ho’omanawanui, PhD—English
*L. Kame’eleihiwa, PhD—Hawaiian studies
E. Kleiber, MLIS, MAS—Pacific specialist librarian
N. Lewis, PhD—East-West Center

Degrees and Certificate Offered: BA in Pacific Islands studies, MA in Pacific Islands studies, Certificate in Pacific Islands studies

The Academic Program

Pacific Islands Studies at UH Mānoa is an innovative, interdisciplinary program committed to the production and dissemination of a wide range of knowledge about Oceania. The program focuses on the island societies of this vast region, and the dynamic cultural, social, and political interactions that link them to each other as well as to the rest of the world. It seeks to understand the many worlds of Oceania through multiple conceptual lenses, drawn selectively from a range of academic disciplines and from the knowledge systems of the region itself. Pacific Islands studies promotes active, student-centered approaches to learning and encourages creativity in research and representation of island issues.

With a core and affiliate faculty of about 40 members, and access to one of the finest collections of Pacific materials in the world, the Pacific Islands studies program offers interdisciplinary programs of study leading to the BA and MA in Pacific Islands studies and the Certificate in Pacific Islands studies.

Advising
Graduate students may see Terence Wesley-Smith or other designated faculty. Undergraduates majoring in Pacific Islands studies are advised by Julie Walsh.

Undergraduate Study

Bachelor’s Degree

The undergraduate program in Pacific Islands studies is designed for students desiring an interdisciplinary education and an informed understanding of Oceania and issues of concern to Pacific Islanders.

Students seeking a BA in Pacific Islands studies must first complete PACS 108 with a minimum grade of C. Students must also meet all the requirements for admission established by the School of Pacific and Asian Studies.

Pacific Islands studies is normally declared as a major at the end of the sophomore year or beginning of the junior year though students may apply for admission to the program at any time. The formal declaration is made through the academic advisor.
Program Requirements

- Register for all required courses for a letter grade
- Earn a grade of C (not C-) or better in the 36 credit hours of Pacific Islands-related coursework applied to the major requirements
- 45 upper division credits of 300+ courses

Major Requirements

- Total of at least 36 credit hours of Pacific Islands-related coursework
- PACS 108, 201, 202, 301, 302, 303: 18 credits of PACS core courses
- 9 elective credits selected from a list of courses, including 3 credits in Pacific Islands-related history, anthropology, and other department offerings
- Choose a concentration from 3 choices: 1) Public Policy and Community Development, 2) Contemporary Regional Issues, and 3) Arts, Performance, and Culture
- 6 additional credits selected from a list of concentration-related courses
- 4 semesters of an indigenous Pacific Islands language; native speakers may test out upon demonstration of equivalent level
- PACS 401: 3 credits Senior Capstone experience

PACS courses used to satisfy General Education Core requirements may not normally be used to satisfy major requirements or vice versa. For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Graduate Study

Master's Degree

The MA in Pacific Islands studies is intended for students of the region wishing to transcend established disciplinary boundaries and explore innovative approaches to learning, research, and representation. It is the only program of its kind in the U.S. The MA program includes two options, thesis and MA portfolio. Students selecting the first option complete a scholarly research-based thesis on a Pacific-related topic. Normally this is the preferred option for those planning to enter a doctoral program in the humanities, social sciences, or interdisciplinary studies. Those opting for the MA portfolio demonstrate mastery of a specialty area within the field of Pacific Islands studies through an integrated program of activities including coursework, research, and writing. Both options can include performance, multimedia, or creative writing components. Some recent graduates are pursuing doctoral or professional degrees in Australia, New Zealand, Europe, Hawai‘i, and the U.S. mainland; others are employed in a wide variety of fields, including education, social work, publishing, as well as library and museum work.

Language Requirement

On entry, or before graduation, students are required to have a second-year level of competence in an indigenous language of the Pacific, or a pidgin/creole language such as Tok Pisin, Solomons Pijin, or Bislama. The language should be related to the student’s research interests. Competence in an administrative language of the Pacific such as Spanish, French, German, or Japanese may be used to satisfy the requirement, provided this is not the student’s first language, and there is a demonstrated connection with research activities. Language competence is demonstrated by successful completion of appropriate course work, or through an examination conducted by a suitably qualified individual.

Degree Requirements

All MA students are required to complete a minimum of 30 credits of course work, which must include three core seminars, PACS 601, 602, and 603. The core seminars introduce students to key issues of learning and research in the field of Pacific Studies. The seminars are taught in sequence, with PACS 601 and 602 offered in the fall, and 603 in the spring. In addition, students take at least two focus courses (6 credits) directly related to their research or specialty interests. A list of preferred Pacific-related courses offered across the campus serves as a guide in the selection of other courses that will count toward the degree. Courses are selected in consultation with a faculty advisor to form an integrated program of study that strengthens a student’s general knowledge of the region, as well as providing a particular concentration of interests. Students in both the thesis and MA portfolio plans choose a three-person faculty committee to supervise their work, and to evaluate the final product or products. The MA committee must review and approve a comprehensive thesis or portfolio proposal (usually produced as part of the requirements for PACS 603) before the student embarks on the MA thesis or on major components of the portfolio.

All students must pass the MA written examination, which provides an opportunity to demonstrate understanding of significant issues in the field of Pacific studies, as well as general knowledge of the region as a whole. Students normally sit the examination at the end of the third semester in the MA program. Successful performance on the examination advances the student to candidacy. A student failing the examination may take it one more time. A second failure results in the student being dropped from the program.

Thesis Requirements

Students selecting the thesis option complete 6 credits of focus course work directly relevant to their research interests, and produce a scholarly, research based thesis on a Pacific-related topic. The thesis should demonstrate an ability to conduct independent research and represent a significant contribution to this interdisciplinary field of study. It should address a significant question, issue, or theme, and include a thorough review of relevant written and other resources. Students are expected to cross established disciplinary boundaries and explore topics using multiple conceptual lenses. The thesis must include a substantial written component that is normally at least one hundred pages (or 30,000 words) in length. It can include performance, creative writing, or multimedia components in dialogue with the text to better communicate the scholarly work.

Students pursuing the thesis option satisfy credit requirements as follows:

- Core seminars (PACS 601, 602, 603) 09 credits
- Focus courses 06 credits
- Elective courses 09 credits
- Thesis credits (PACS 700) 06 credits
- Total 30 credits

At least 15 credit hours of this course work must be in courses numbered 600 and above (excluding 700). Normally, only 3 credits of 699 Directed Reading and Research can be used to satisfy the focus requirement.
MA Portfolio Requirements

Students selecting this option identify and explore a Pacific-related specialty area. Mastery of the specialized subject matter is demonstrated through an integrated program of study that includes: 1) 6 credits of focus course work directly relevant to the specialty area; 2) an essay or research report of at least 25 pages in length (approximately 8,000 words) that explores a central aspect of the specialty area; and 3) a substantial performance, multimedia, artistic, or written product directly related to the specialty area. This component of the portfolio will normally complement the essay or research report described above, and can be combined with it to form a single product of at least 50 pages in length (approximately 16,000 words).

Students pursuing the portfolio option satisfy credits requirements as follows:

- Core seminars (PACS 601, 602, 603) 09 credits
- Focus courses 06 credits
- Elective courses 09 credits
- MA projects (PACS 695) 06 credits
- Total 30 credits

At least 18 credit hours of course work must be in courses numbered 600 and above (excluding PACS 695). Normally, only 3 credits of 699 Directed Reading and Research can be used to satisfy the focus requirement. Students earn 3 credits of 695 Master’s Portfolio Project for their work on the essay or research report, and a further 3 credits for the third component of the portfolio.

Performance, Creative Writing, Artwork, and Multimedia Options

Innovative approaches to knowledge production are encouraged. MA projects (thesis or MA portfolio) must include a substantial analytical, text-based component, but can incorporate elements of performance (e.g., dance, theater), creative writing (e.g., fiction or poetry), artwork (e.g., painting, photography), or multimedia (e.g., video, audio, digital media). Students intending to include performance, creative writing, artwork, or multimedia components must satisfy the MA committee that they have or will acquire the appropriate proficiencies. The issue of proficiency should be addressed in the project proposal with reference to relevant course work, academic background, or prior experience. Performances must be supervised by members of the MA committee, fully rehearsed, and videotaped for submission, along with the written component, to the center and/or Graduate Education.

MA Committees

All MA students form a three person committee to supervise their work and evaluate the thesis or MA portfolio products. Graduate Education requires that committee members be on the Graduate Faculty at UH Mānoa, although students can petition for exceptions to this rule. The chair and at least one other member should be members of the core or affiliate faculty of the Center for Pacific Islands Studies. Students normally form the committee towards the end of their first year in residence, or after they have prepared a comprehensive thesis or MA portfolio proposal.

Certificate Program

Certificate in Pacific Islands Studies

The Certificate in Pacific Islands Studies is designed for students who are pursuing advanced degrees in other areas and whose course of study includes a substantial component of Pacific-related courses and research. The objective of the certificate is to provide recognition of this expertise and to encourage further study of the Pacific region.

Students applying for the certificate must have previously been admitted to Graduate Education in a field of study. Applications take the form of a letter to the Pacific Islands studies graduate chair that outlines academic objectives, Pacific-related interests, and the proposed course of study in the primary field. Following a diagnostic interview, the certificate student is assigned a two-person advisory committee consisting of one member of the Pacific Islands studies faculty (as appointed by the graduate chair) and the student’s departmental advisor.

Requirements

A certificate student is required to have 18 credit hours in Pacific-related courses or 12 credit hours in Pacific-related courses and a Pacific-related thesis or dissertation. The courses must constitute a logically related program of study and are normally chosen from the list of preferred courses prepared by the Pacific Islands studies faculty. Certificate students must take at least one of the MA core courses (PACS 601, 602, 603), and sit the MA written examination. The certificate is awarded upon completion of the advanced degree in the primary field of study.
Aerospace Studies (Air Force ROTC)

Administration
AFROTC Building
1460 Lower Campus Road
Honolulu, HI 96822
Tel: (808) 956-7734
Web: manoa.hawaii.edu/undergrad/aerospace/

Faculty
LtCol V. Terrell (Director)
Capt. Z. Spotts
Capt. A. Schilling
TSGT P. Mitchell
TSGT S. Schroeder

General Information
Aerospace Studies is part of the Air Force ROTC program. Through this program, full-time students pursue a commission in the U.S. Air Force. Once commissioned as a Second Lieutenant, graduates of the Air Force ROTC program serve on active duty for a specified period of time.

The Academic Program
The Aerospace Studies department offers 3- and 4-year programs to students. Course content includes: Foundations of the U.S. Air Force, Evolution of Airpower, Leadership Studies, and National Security Affairs. All lower division courses are approximately one or two credit hours. Upper division courses are three credit hours.

An integral part of the Air Force ROTC commissioning program is Leadership Laboratory and Physical Training. Students are required to attend both functions and must meet all attendance and academic requirements in order to remain in good standing within the program.

In addition to the academic program, Air Force ROTC offers a wide array of optional activities to enhance students’ leadership skills.

Scholarships
Highly qualified freshmen and sophomores can compete nationally for the In-College Scholarship Program. Express Scholarships may be available to students pursuing degrees the Air Force deems “critical” (Computer/Electrical/Environmental Engineering, Foreign Languages, and Nursing). Scholarships cover tuition and most fees, $900 annually for textbooks, and include a monthly stipend ($300-$500). Four-year scholarships are available for eligible High School Seniors. These applications are due via www.afrotc.com by December 1.

Advising
For more information about Air Force ROTC or about our scholarship program, log on to www.afrotc.com or contact our office at (808) 956-7734 or afrotc@hawaii.edu.
Military Science Army (ROTC)

Administration
1311 Lower Campus Road
Honolulu, HI 96822
Tel: (808) 956-7766/956-7744
Fax: (808) 946-2840
Email: gblt@hawaii.edu or
Web: manoa.hawaii.edu/undergrad/armyrotc/

Faculty
LTC J. Carson
MAJ Cox
CPT D. Morton
CPT J. Androff
MSG D. Timmerman
SFC Campos-Flores
SFC J. Solano
SSG J. Tabio
Mr. E. Leo
Mr. E. Davis

General Information
The Army Reserve Officer Training Corps (ROTC) program provides full-time college students the opportunity to pursue a commission in the U.S. Army, U.S. Army Reserve, or the Hawaiʻi Army National Guard. Officers may be commissioned on active duty, in a reserve component while pursuing a civilian career, or receive an education delay to earn a graduate or professional degree. There are 4-year, 3-year, and 2-year programs available.

The Academic Program
The 4-year program is divided into a 2-year basic and 2-year advanced course. The basic course is for students who enter ROTC in their freshman year. With approval, students may enter ROTC in their sophomore year and compress the basic course requirements. This traditional program offers a moderately paced course of military and academic training resulting in completion of ROTC and eligibility for a commission on graduation day. All basic courses are electives, and no obligations are incurred. The advanced course includes a 5-week summer camp between the junior and senior years held at Fort Knox, Kentucky. Pay for the advanced course is $450-500 per month during the school year and approximately $900 plus free room and board for the 5 weeks at camp. To be eligible for the advanced course, a student must (a) be a U.S. citizen or U.S. national, (b) successfully complete the basic course or its equivalent, and (c) meet other statutory and regulatory requirements.

The 2-year advanced program can be taken without the basic course by students who attend and complete a 4-week summer camp at Fort Knox, Kentucky, for which the student receives approximately $600. Likewise, veterans of all services, 3-year JROTC graduates, and national guardsmen and reservists may be exempt from the basic course. Should an individual qualify, select, and complete this option, he or she is eligible to receive a commission upon graduation. Students must have 4 semesters of college work remaining after finishing the basic summer camp (or qualifying for the exemptions). Advanced course students must have completed 60 credits and be full-time students.

In addition to the courses summarized in the course descriptions, cadets will be required to meet professional military education requirements prior to graduation and commissioning. This requirement consists of one course in military history.

Optional Programs

Army Reserve/Army National Guard Membership
The Simultaneous Membership Program (SMP) allows cadets to participate in and receive drill pay from an Army Reserve or Hawaiʻi National Guard unit as an officer trainee while they complete the Army ROTC advanced course. The pay the cadets receive is in addition to the monthly ROTC spending allowance and any GI Bill educational benefits to which they are entitled.

Scholarships
There are 4-, 3-, and 2-year scholarships available. All Army ROTC scholarships are merit based and cover the full tuition and fees for any university on Oʻahu. In addition, scholarships provide $1,200 per year for books and an additional $300-$500 per month spending allowance. 4-year applications are due by January 10 of the high school senior year. 3- and 2-year scholarships are competed for on campus by current ROTC students.

Advising
For general information about the Army ROTC program or specifics on eligibility requirements, contact the Enrollment Officer in the Military Science Building at 1311 Lower Campus Road or call SFC J. Solano, Scholarship Program Advisor at (808) 956-7766/7744.
Administration

Gartley Hall 203
2430 Campus Road
Honolulu, Hi 96822
Tel: (808) 956-7182
Fax: (808) 956-5964
Email: sswadmit@hawaii.edu
Web: www.hawaii.edu/sswork

Dean: Noreen Mokuau

Faculty

*N. Mokuau, MSW, DSW—Dean, Asian/Pacific Islander health issues
*E. Aparicio, MSW, PhD—Chair of Child and Family concentration, teenage pregnancy and parenting, health disparities/inequities, mental health, child maltreatment, early childhood intervention, racial equity
K. Bennett, MSW, JD—child welfare policy and law
*K. Braun, MPH, DrPH—social behavioral health sciences, gerontology
G. Breakey, MPH
*C. Browne, MSW, DrPH—Chair of Gerontology concentration, women’s issues, health care, gerontology, qualitative research
*B. Coyne, PhD—criminology, sex offender programs
M. DeMattos, MSW—Chair of BSW program, youth and families, substance abuse, training
S. K. Dotson, MS—Native Hawaiian elders, health disparities, community outreach, alternative dispute resolution, mediation
*M. Godinet, MSW, PhD—Chair of MSW Program, delinquency prevention, social and adjustment issues of Pacific Islander youth, multi and cross-cultural issues
*J. Guo, MSW, PhD—social welfare policy, child and family issues, international and comparative social welfare
*S. Hong, PhD—neighborhood contexts, immigration, mental health, community-based practice and research methodology
*L. Ka’opua, MSW, PhD—Chair of Health concentration, mental health, and health disparities
M. Kaulukukui, MSW—mental health
*B. J. Kim, MSW, PhD—gerontology, mental health and quality of life among older Asian immigrants
J. K. Kim, MSW—indigenous evaluation and research, Native Hawaiian culturally based intervention and practice methods, Native Hawaiian holistic health and well-being

Myron “Pinky” Thompson earned his MSW from UH in 1953. A noted leader in the struggle for the preservation of the Hawaiian culture, he was at the vanguard of the Hawaiian Renaissance movement in the 1970s. While at the Queen Lili’uokalani Children’s Center, he helped revitalize traditional healing practices such as ho’oponopono and dream work. Along with Kumu Mary Kawena Pukui and others, he helped create Nana I Ke Kumu, a two-volume reference manual on indigenous healing practices. He helped start Alu Like and Papa Ola Lokahi, was a Bishop Estate Trustee, and served as president of the Polynesian Voyaging Society. The UH Board of Regents approved the naming of the school after him in 2008.

J. Kishida, MEd—PhD and MSW program specialist
T. Kreif, MSW—community development, social and economic development, international social work
C. Langworthy, MSW—Practicum Coordinator, gerontology, mental health
R. Matayoshi, MSW—Practicum Coordinator, volunteerism, volunteer management, peace, leadership, interdisciplinary education
*P. Morelli, MSW, PhD—Chair of Doctoral Program, Chair of Mental Health concentration, social work practice, cross-cultural/ minority mental health, social development, qualitative research
S. Nakaoka, MA, MSW, PhD—critical race theory and community development, Asian Americans and Pacific Islanders, social justice and social work practice
M. Ono, MSW—Director of Student Services, mental health, substance abuse recovery, cross-cultural practice
L. Paglinawan, MSW—indigenous issues
P. Paul, MSW—child and adolescent mental health
*R. Stotzer, MSW, PhD—Director of Distance Education, prejudice, stereotypes and hate crimes
J. Sur, MSW—child welfare, disability studies, substance abuse, social work in educational settings
A Sutherlin, MSW—power-based personal violence, child welfare, oppressed and differently-abled populations

* Graduate Faculty
General Information

Social work, one of the fastest growing occupations in the nation, is a profession concerned with the prevention and resolution of problems for individuals, families, groups, and communities. Those who are committed to social justice and improving the quality of life for society’s most vulnerable citizens would find this curriculum stimulating. Students graduate with the knowledge, skills, and values that facilitate the prevention or resolution of such problems as mental illness, substance abuse, homelessness, crime and delinquency, and poverty.

The school has been providing quality social work education in Hawai‘i for over 75 years. It has a bachelor’s, master’s, and doctoral program. The BSW and MSW programs are accredited by the Council on Social Work Education (CSWE) and our PhD program is approved by UH Mānoa Graduate Education.

Undergraduate Program

Bachelor of Social Work

The primary goal of the BSW program is to prepare students to be competent, beginning level professionals and generalist practitioners capable of integrating the knowledge, skills, and values of social work, based on a liberal arts foundation. The program’s secondary goal is to prepare students for advanced social work education. The program combines both academic course work and field practicum in a two-year course of study beginning in the junior year. The curriculum is predicated on and extends the liberal arts perspective.

Admission Requirements

The applicant must: (a) have been admitted to UH Mānoa; (b) have completed UH Mānoa’s General Education Core requirements (special consideration is given to second semester sophomores for early admission); (c) have completed the knowledge-base courses identified by the school; (d) have a minimum cumulative GPA of 2.5; and (e) provide evidence of motivation for and commitment to social work education (e.g., personal, volunteer, and/or social-work-related experience).

Application Deadlines

Students are admitted to the BSW program in the fall and spring semesters.

February 1 for the fall semester; October 1 for spring.
Degree Requirements

The student must (a) fulfill all UH Mānoa Core requirements; (b) complete the required undergraduate social work curriculum listed below; (c) earn an aggregate of no less than 120 credit hours; and (d) have a minimum cumulative GPA of 2.5.

BSW Curriculum

Candidates must complete the following curriculum requirements:

1. The following social work knowledge-based courses must be included in the General Education Core or as lower division electives: any political science course, PHIL 110 or 111, any psychology course, SW 200, and a biology course that emphasizes human biology.
2. Social work major courses (38 credit hours) including SW 302, 303, 325, 326, 360, 361, 391, 402, 403, 440, 490, and 491.
3. Electives required in upper division liberal arts courses (21 credit hours) including one course in each of the following areas: (a) the U.S. experience; (b) social dynamics and group interaction; (c) politics, government, and economies; (d) research; and three courses in (e) diversities.
4. Other electives (2-4 credit hours).

For information on the BSW Program, visit our website at www.hawaii.edu/sswork/bsw.html. For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Graduate Programs

Master of Social Work

The MSW curriculum prepares students for professional advanced practice and requires 57 credit hours. The course work must be completed within a 4-year period, of which 4 semesters of practicum and completion of the research requirement are mandatory. Students may waive some foundation level courses by examination and thereby, reduce the number of credits necessary to receive their degree.

The foundation curriculum includes courses in social welfare policy, human behavior in the social environment, research, social work practice with individuals, families, groups, and communities, and practicum. The advanced curriculum is organized around four concentrations: behavioral mental health, child and family, gerontology, and health. Elective courses augment the foundation and concentration curricula; electives may include courses in marriage and family therapy, substance abuse, criminal justice, Native Hawaiian cultural practices, and other offerings relevant to the student’s chosen concentration.

Admission requirements are: a bachelor’s degree from an accredited U.S. college or university or its equivalent from a recognized foreign institution of higher learning, a 3.0 GPA, a liberal arts background, the motivation for a career in social work, and evidence of ability to manage the rigors of graduate school.

Application Deadline

February 1 (MSW admission occurs in the fall only).

For further information, write to the school at Gartley Hall 203, 2430 Campus Road, Honolulu, HI 96822, call (808) 956-7182, email sswork@hawaii.edu, or check the website at www.hawaii.edu/sswork.

Neighbor Island Distance Education MSW Delivery Option

Application Deadline

February 1 for fall admission.

The MSW degree is now available to neighbor island residents via distance education technology. Classes include instruction via interactive television, computer-based delivery, face-to-face onsite, and hybrid or blended approaches. It is a 3-year program.

For more information, call (808) 956-9470, visit the website at www.hawaii.edu/sswork/de/, or email sswde@hawaii.edu.

PhD in Social Welfare

The PhD program prepares students for leadership in the advancement of social welfare education, practice, policy development, and research. The program promotes social justice and global understanding through scholarly inquiry using indigenous and mixed method approaches. Emphasis is placed on knowledge development that enhances the well-being of Native Hawaiians and the diverse people and communities of Hawai‘i and the Asian-Pacific Region. The curriculum and program of study place highest priority on independent inquiry and the enhancement of intellectual, creative, and analytical abilities. Each student will develop the ability to conduct independent research on a critical social problem.

The program is designed to provide sufficient structure to guide students as well as the flexibility and rigor that are the hallmarks of doctoral education. The curriculum is divided into required courses ensuring that all students are equipped with comparable basic knowledge; specialization work, in which students largely design their own curriculum; teaching and research practica; electives; a dissertation design and proposal requirement; and the dissertation. The PhD in social welfare requires 46 hours of course credit excluding dissertation credits.

Application Deadline

January 15 (PhD admission occurs in the fall only).

For more information, call (808) 956-3831, email sswork@hawaii.edu, or check the website at www.hawaii.edu/sswork/phd.html.
School of Travel Industry Management

Administration
George Hall 346
2560 Campus Road
Honolulu, HI 96822
Tel: (808) 956-8946
Fax: (808) 956-5378
Email: tim-info@hawaii.edu
Web: www.tim.hawaii.edu
Interim Dean: Thomas R. Bingham

Faculty
*D. J. L. Choy, PhD (Graduate Chair)—tourism economics, tourism development, travel marketing, tourism policy and planning
*T. Bhattacharya, PhD—transportation and land use planning and policy, spatial modeling, sustainability, social justice and equity issues in transportation
*J. Chi, PhD—transportation economics, transport policy, applied economics
D. Fitzgerald, MHRM—human resource management
L. U. Gershuni, MBA—service management, food and beverage, event management, entrepreneurship, sociocultural impacts of tourism
*I. Lin, PhD—services/hospitality marketing, services/hotel management, consumer behavior, and human resources management
*J. C. Liu, PhD—economic impact of tourism, geography of tourism, sociocultural issues of tourism, ecotourism
*K. Seo, PhD—hospitality finance and accounting
*P. J. Sheldon, PhD (Emerita)—tourism and hospitality information systems, tourism economics, tourism policy
*D. Spencer, PhD—tourism policy, planning and management
*H. Wen, PhD—information technology systems, e-commerce, e-consumer behavior, e-marketing, hotel operation management, supply chain management

General Information
The School of Travel Industry Management (TIM) is recognized as a leading educational institution in hospitality, tourism, and transportation management. TIM pioneered the concept of integrating all aspects of the travel industry under a single discipline. Built on a foundation of management science, TIM also draws on a broad range of disciplines to provide high-quality education at the undergraduate and graduate levels to current and future professionals.

The visitor industry in Hawai‘i provides TIM students many opportunities to gain experience in the field and to study applications of theory to practical business situations. TIM works closely with local, national, and international business organizations, as well as with various government and private professional organizations.

In addition to Hawai‘i’s travel industry environment, students benefit from a curriculum that has an international perspective with special emphasis in the Asia-Pacific region. The global importance of tourism and the increasingly interdependent nature of economic and political systems require a fundamental and multidisciplinary understanding of international issues. TIM’s distinctive curriculum and outstanding faculty, the success and importance of tourism as the leading industry in Hawai‘i, and the international focus of the programs provide students a unique educational environment and experience.

Mission
As a professional program within a land-grant institution, the School of Travel Industry Management has linked its mission with the state’s economic interest in tourism, Hawai‘i’s largest economic sector. The mission of TIM, as a leading regional professional institution, is to develop and disseminate hospitality, tourism, and transportation concepts, knowledge, and skills through global leadership in teaching, research, training, and outreach. These activities contribute to economic, sociocultural, and environmental sustainability, including supporting and enriching host cultures.

With this mission, the school’s objectives are threefold: (a) to prepare individuals for leadership and professional positions in the travel industry through education and training, (b) to generate new knowledge in the travel industry through research and graduate education, and (c) to provide service to the community, nation, Asia-Pacific region, and beyond.

Goals
Within its mission and objectives, TIM strives for the following goals:

Goals
* Graduate Faculty
1. Instruction—to provide high-quality education at the undergraduate and graduate levels on a statewide basis;
2. Research—to conduct basic and applied research relevant to the travel industry; and
3. Service—to be the leading travel-industry center for information resources and continuing professional education and training serving the state and the Asia-Pacific region.

Accreditation
TIM is fully accredited by the Accreditation Commission for Programs in Hospitality Administration (ACPHA).
TIM also has earned the TedQual designation for total education quality from the United Nations World Tourism Organization (UNWTO).

Degrees
Undergraduate Certificates: travel industry management and sustainable tourism
Bachelor’s Degree: BS in travel industry management
Master’s Degree: MS in travel industry management

Advising
TIM Student Services Office
George Hall 346
2560 Campus Road
Honolulu, HI 96822
Tel: (808) 956-8946
Fax: (808) 956-5378

All students are assigned to the student services advisors upon admission to the school. Advisors assist students with the selection of courses appropriate to their career goals, identifying career goals that are appropriate to their interests, understanding UH Mānoa policies and procedures, and identifying co-curricular activities and/or work experiences to help them develop skills and abilities outside the classroom.

Mandatory academic advising is required for all freshmen, sophomores, and new transfer students. All students are encouraged to see an advisor at regular intervals to plan for graduation in a timely manner. The Bachelor Degree Program Sheet and additional advising information can be found on the school’s website.

Seniors
Seniors must complete a degree check and file a diploma application prior to their final semester. Individual advising sessions for graduating seniors are held each semester.

Academic Policies

Good Academic Standing
Undergraduate TIM students must meet the following requirements to maintain good academic standing:
1. Cumulative GPA of at least 2.0 for all courses attempted at UH Mānoa for a grade. Transfer credits and courses completed under the CR/NC option are not included.
2. A GPA of at least 2.0 in the upper division TIM core and 2.0 in the TIM emphasis.
3. Satisfactory progress toward completion of degree requirements. This means students must enroll in courses required for the degree and complete these courses with acceptable grades.

Probation
A student who fails to meet any one of the academic standing requirements at the end of any semester is placed on probation. Probationary students must achieve a current (semester) GPA of at least 2.0 to be allowed continued registration. Failure to correct academic deficiencies may lead to suspension and eventual dismissal from UH Mānoa.

Withdrawal from Courses
As the semester progresses, it becomes increasingly difficult to withdraw from a course. Withdrawal deadlines are specified by UH Mānoa each semester, and students should take note of the relevant deadlines at the start of the semester.

Undergraduate Program

Areas of Emphasis
TIM offers two areas of emphasis within the BS program: hospitality management and tourism/transportation management. These emphases are a selection of courses, which constitute a more focused study in one area of travel industry management of interest to the student. The undergraduate instructional program is committed to the development of competent management personnel for the travel industry through a curriculum that enables students to develop leadership abilities to solve problems of a dynamic industry.

The global nature of the curriculum provides insight into the role and responsibilities of the industry within state, regional, national, and world perspectives, as well as the nature of service-based enterprises, business ethics, and societal constraints. In addition, practical knowledge regarding operational aspects of the industry enables students to develop “reality skills” within the field.

Hospitality Management
The hospitality management emphasis is intended to provide students with the ability to apply problem-solving, decision-making techniques, and critical-thinking skills to meet current and future industry challenges. Students will study the relationship of the various constituencies (customer, owner, staff) in the management and operation of hospitality businesses, including lodging and food service establishments, as well as event management enterprises.

Courses in this area cover the following areas: management of hotel and food & beverage establishments; food quality management; hospitality financial control; events management; principles of sales and marketing hotels and resorts with a focus on public relations; advertising, pricing, and yield management; operating a commercial food-service facility either as a free-standing operation or as a part of a hotel, club, entertainment/recreation complex, or institution; resort development and management of hotel facilities and design; resort development and management and quantity/quality of food productions.

Graduating seniors take a capstone course in strategic management in the travel industry.

Tourism/Transportation Management
This emphasis focuses on strategic issues related to the tourism and transportation industries. Students can take a combination of tourism and transportation related courses or choose courses that focus on one of these two areas. Tourism management courses cover destination management; travel distribution systems; marketing and management principles
within specific types of businesses, geography, and socio-cultural aspects of tourism; and sustainable tourism, cultural heritage, and destination management by cultural values. In transportation management courses, students will gain an understanding of the characteristics and importance of transportation systems (both domestic and international); major transportation modes; government, promotional, and regulatory activities in U.S. transportation; the role of transportation in tourism; the transportation systems that impact the economics of both Hawai’i and the U.S.; supply chain management; and the management of firms in various transportation modes. Course topics include government regulation and promotion, distribution and industry trends; tourist-related transportation systems, surface passenger transportation systems, and air transportation and the cruise business.

Graduating seniors take a capstone course in strategic management in the travel industry.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

**Program Learning Objectives for the BS Degree**

1. **Knowledge and Global Perspective**
   - Identify and demonstrate skills relevant to the operational areas of hospitality and tourism management.
2. **Effective Communication**
   - a. Demonstrate effective written communication skills.
   - b. Demonstrate effective oral communication skills.
3. **Leadership and Teamwork**
   - a. Demonstrate effective leadership skills, or traits of a leader.
   - b. Work productively, respectfully, and professionally as a team member.
4. **Critical Thinking**
   - a. Analyze situations and develop alternative options to resolve identified issues.
   - b. Synthesize appropriate information to develop reliable, valid, and logical arguments.
5. **Ethics and Stewardship**
   - a. Apply ethical behavior.
   - b. Evaluate the importance of host cultures to the global hospitality industry and utilize sustainable practices.

**Admission Requirements**

**Classified UH Mānoa Students**

Applications are available at the TIM office in George Hall 346. Students must meet the following criteria:

1. A minimum cumulative GPA of at least 2.0 for all work attempted at UH Mānoa; and

2. Evidence of potential for success in the travel industry, including, but not limited to, (a) participation in co-curricular activities in school or in the community, (b) personal recommendations, and (c) part-time or summer work experience.

**Transfer Applicants**

Students attending other academic institutions must meet the following criteria:

1. Admissible to UH Mānoa with a 2.0 cumulative transfer GPA for Hawai’i residents and a 2.5 cumulative transfer GPA for non-Hawai’i residents, and 24 transferable college-level credits.

2. Evidence of potential for success in the travel industry, including, but not limited to, (a) participation in co-curricular activities in school or in the community, (b) personal recommendations, and (c) part-time or summer work experience.

**Transfer Credits Policy**

Please refer to the UH Mānoa Policy for Transfer Credits. Access: manoa.hawaii.edu/admissions/undergrad/policies.html#credits.

- Definition: Transfer credits are credits received for previous courses completed at another institution of higher education that articulate with UH Mānoa courses.

- Eligibility: Declared majors may request an evaluation of credits taken at other institutions of higher education through the Office of Admissions and Office of the Registrar.

All students are reminded that:

- A minimum of 36 upper division TIM credits must be taken at the TIM school.
- A minimum of 30 credits must be taken at UH Mānoa.
- All courses at the TIM school that are designated at the “upper division” (300/400 level) cannot be satisfied with a course transferred from a two-year school.

- A minimum of 36 upper division TIM credits must be taken at the TIM school.

**Application Procedures**

Application forms are available in the TIM Student Services Office for classified degree students at UH Mānoa in other schools and colleges who wish to change majors. Applications must be received by **March 1** for fall admission and **November 1** for spring admission. Applicants who are not currently classified degree students at UH Mānoa must submit the UH System Application Form to the UH Mānoa Office of Admissions by the published fall and spring application deadlines.

**School Requirements**

To earn the bachelor of science degree, students must complete the following requirements:

1. Fulfill the UH Mānoa General Education Foundation Requirements: (12 credits)
   - a. One course in Written Communication FW: ENG 100, 100A, 190 or ELI 100.
   - b. One course in Symbolic Reasoning FS: BUS 250, NREM 203, MATH 203, 215, 241, or 251A.
   - c. Two courses in Global and Multi-Cultural Perspectives (FG): TIM 102 for FGB and one course designated FGA or FGC.

2. Fulfill the UH Mānoa General Education Diversification Requirements: (16-19 credits)
   - a. Two Arts/Humanities/Literature courses:
     - 1. COMG 151 or 251 for DA.
     - 2. Any course designated Literature DL. or designated Humanities DH
   - b. Three Natural Sciences courses:
1. Any course designated Biological DB.
2. Any course designated Physical DP.
3. Any course designated Lab DY.
4. Two Social Sciences courses
   1. ECON 130.
   2. Any course designated DS other than ECON.
5. Fulfill the UH Mānoa General Education Hawaiian or Second Language (HSL) Requirements. (12-16 credits) TIM requires that students achieve second-year proficiency. See the TIM advisor for information on waivers or earning up to 16 back credits.
6. Fulfill the UH Mānoa General Education Focus Requirements. See the “Undergraduate General Education Requirements” section.
7. Complete the TIM lower division special requirements (13 credits): TIM 101, ACC 201, ACC 202, and ICS 101B or 101.
8. Complete the internship program, (TIM 100, 200, and 300 or 400B or 400C), including 200 hours with at least one internship in the student’s area of emphasis and one in the U.S.;
9. Complete the TIM upper division core courses (21 credits):
   a. Statistics (BUS 310, ECON 321, NREM 310 or SOCS 225).
   b. With grades of C- or higher: TIM 301, 302, 303, 304, 305, 306. Statistics and TIM 302 must be completed during the first semester the student is eligible.
10. Complete one of the TIM areas of emphasis with grades of C- or higher for each course:
   a. Hospitality Emphasis (21 credits): TIM 313, 314, 333, 431, 401 or 403, one hospitality elective, and one Tourism/Transportation course.
   b. Tourism/Transportation Emphasis (21 credits): TIM 350; one of (TIM 321, 324, 420 or 425); 431; three Tourism/Transportation electives; and one hospitality course.
11. Earn a minimum of 120 credit hours with a minimum cumulative GPA of 2.0
12. Complete at least 45 credits of upper division coursework numbered 300 or higher.
13. Complete at least 36 upper division credits in TIM.
   For more information, please refer to the TIM Program Requirements Sheet and the UH Mānoa Catalog course descriptions.

Certificate in Sustainable Tourism
The Certificate in Sustainable Tourism is designed to provide non-TIM undergraduate students with an opportunity to develop knowledge and understanding of sustainable and responsible tourism principles and practices.

Students must apply to the TIM school to be accepted to the certificate program prior to enrolling in upper-division TIM courses. Admission requirements include completion of TIM 101 with a B grade or better, completion of 54 non-TIM credits and a minimum cumulative GPA of 2.5.

Certificate in Travel Industry Management
The certificate consists of 5 core courses that provide basic fundamentals in travel industry management for non majors.

Students must apply to the TIM school to be accepted to the certificate program prior to enrolling in upper division TIM courses. Admission requirements include the completion of 24 college-level credits and may include other admissions requirements. The required courses are TIM 101 and four of the following five 300-level courses: TIM 302, 303, 304, 305, 306. Please contact the TIM advisor for more information.

Graduate Program
The master of science (MS) degree program in travel industry management is designed to provide a specialized education through coursework and research to master a broad set of interdisciplinary skills and knowledge. Students develop analytical abilities and the critical thinking skills necessary for careers in the travel industry. Students are also expected to engage in understanding and execution of research activities.

The program prepares students for careers and leadership roles in the travel industry including tourism, hospitality, and transportation management as well as areas covering the entire industry including information technology, international hospitality management, strategic marketing, and global tourism analysis. Students can also explore specific topics of interest including sustainable tourism, electronic commerce, services marketing, and management among others. In addition, the program and faculty have a strong emphasis and expertise in travel and tourism in the Asia-Pacific region. Students come from diverse academic backgrounds, which contribute to a rich and stimulating classroom environment. There are, however, certain subjects that entering students must be familiar with in order to work from a common knowledge base in our courses. These subjects are: 1) introductory economics, 2) introductory financial and managerial accounting, and 3) introductory statistics. If you have not yet taken these courses, they are not required for admission and options are available for meeting this requirement.

Admission Requirements
The MS in travel industry management is designed for individuals who hold a baccalaureate degree and a demonstrated interest in the travel industry. It is preferred that individuals have an undergraduate degree in the travel-hospitality field, or prerequisites may be required.

Minimum admission standards include a GPA of at least 3.0 in the baccalaureate work and in the last two years of undergraduate work. Applicants must attain a satisfactory score on the Graduate Management Admission Test (GMAT) or the Graduate Record Examination (GRE). The GMAT is preferred. Students should take the GMAT unless it is not available. Where applicable, the Test of English as a Foreign Language (TOEFL) also is required. The minimum acceptable TOEFL score is 560.

Three letters of reference are required addressing the ability of the applicant to succeed in graduate study and to make future contributions to the travel industry. In addition, two years work experience or equivalent is preferred.
Degree Requirements
The MS is a 36-credit program. Both Plan A (thesis) and Plan B (non-thesis) options are available. Plan A and Plan B students must earn 21 credits in the following required core courses: TIM 601, 602, 603, 605, 606, 607, and 695.

Plan A (Thesis)
In addition to the 21 credits in required core courses, Plan A candidates must complete: three elective courses (9 credits) approved by the graduate chair; and TIM 700 Thesis Research (6 credits).

Plan B (Non-thesis)
In addition to the 21 credits in required core courses, Plan B candidates must complete: four elective courses (12 credits) approved by the graduate chair; and TIM 694 Professional Paper (3 credits).

Instructional and Research Facilities and Programs
Center for Tourism Policy Studies
The Center for Tourism Policy Studies (CTPS) was established in coordination with the World Tourism Organization as one of fourteen such centers throughout the world. CTPS conducts research for academic, government, and industry use, offers professional development programs, and provides technical assistance and other community services in tourism-related areas. Through its programs the CTPS has the following five objectives: 1) conducts research of interest to the travel industry and disseminates the findings and results to the academic, governmental, and private sector communities through publications, conferences, and lectures; 2) provides relevant career-oriented courses for Hawai‘i residents through continuing education, outreach, and extension services; 3) provides professional development seminars at the regional and international levels; 4) maintains the Sunset Reference Center, a comprehensive tourism resource center; 5) maintains linkages with other research and training units within the university, other educational institutions, and tourism-related organizations in Hawai‘i, the Asia-Pacific region, and worldwide.

Professional Development Programs
The TIM school’s professional development programs are designed to improve managerial skills, exchange professional experiences, develop interrelationships among sectors of the travel industry, and increase awareness of the social, cultural, and economic implications of policy decisions. Two summer institutes are held each year:
1. Executive Development Institute for Tourism (EDIT): a two week program for executives and professionals in international tourism; and
2. Hawai‘i International Hotel Institute (HIHI): a series of one-week courses for those with one or more years of experience in the hospitality field.

In addition, TIM conducts both short- and long-term education and training programs for tourism professionals in Hawai‘i and the Asia Pacific region.

Gee Technology Learning Center
The TIM school’s state-of-the-art information technology center houses an executive video conference suite, a multimedia IT training lab, and the Leong Hop and Bernice C. Loui computer lab.

The Sunset Reference Center
With more than 10,000 items, including books, reports, statistical publications, article reprints, and subscriptions to more than 200 periodicals, the Sunset Reference Center has a comprehensive collection of specialized resource material on tourism in Hawai‘i. The Sunset Reference Center provides research material for students, supports the research activities of faculty, and serves as a major resource center for the Asia-Pacific region.

ECO-Hawai‘i Educational & Community Outreach
ECO-TIM is designed to extend TIM’s expertise in and commitment to responsible tourism to the broader community in Hawai‘i through community outreach, service, and continuing education. This program works with community associations, individuals, small- and medium-sized enterprises, and government organizations to provide outreach services and continuing education activities. Activities include outreach projects, lectures, courses, exhibits, forums, conferences, briefing notes, and internet-based information exchange.

Student Organizations
The TIM school has seven student clubs that provide opportunities for students to interact with their peers, meet industry leaders, and practice management skills through a wide variety of activities. These clubs are Travel Industry Management Student Association, Club Managers’ Association of America (UH Chapter), Pacific Asia Travel Association (TIM Satellite Chapter), Young SKAL, American Hotel & Lodging Association Student Chapter, Eta Sigma Delta, and Hospitality Sales and Marketing Association International Student Chapter.

Honors and Awards
The TIM school provides scholarships and awards to qualified students. For a list of these scholarships, see the “Tuition, Fees, and Financial Aid” section of the Catalog.

Eta Sigma Delta
Membership in this international honor society for hospitality management is available to undergraduate and graduate students who have achieved outstanding academic records.

Outstanding Student Awards
These awards are given annually to students who have achieved outstanding academic and service performance in the following categories: (a) senior in travel industry management; (b) graduate student in travel industry management; (c) senior in hotel management; (d) senior in tourism/transportation management; (e) junior in travel industry management; (f) TIM International Award of Excellence (awarded by the TIM Alumni Association); (g) Dean’s Scholar award; and (h) Dean’s Spirit of TIM Award.

Honors
For Honors Program information, see the “Honors” section of this Catalog. Students may apply for UH Mānoa undergraduate research awards.

Dean’s List
For Dean’s List information, see the Academic Honors in the “Undergraduate Education” section of this Catalog.
The College of Tropical Agriculture and Human Resources (CTAHR) was established with the founding of UH in 1907. CTAHR is a leading academic institution in tropical agriculture, biological engineering, food science and human nutrition, fashion design and merchandising, biotechnology, natural resources and environmental management, and family resources. Hawaii’s unique geographic location, ecological diversity, and multicultural population provide students with a living laboratory. The college is the locus of educational opportunities for students preparing to become tomorrow’s scientists, technologists, business leaders, family development specialists, fashion designers and merchandisers, nutritionists, and policy makers.

The land-grant mission of CTAHR provides students with an opportunity to study in an environment that blends teaching, research, and extension programs dedicated to discovering the secrets of basic science while addressing contemporary issues. Faculty members bring to the classroom the unique perspective of emerging research issues, coupled with an abiding commitment to education.

Through its extension activities, the college provides off-campus, noncredit educational programs focused on the advancement of agriculture in Hawaii, protection of the environment, and the strengthening of families and communities.

Through its research activities, the college promotes the advancement of life sciences and applications for productive sustainable agriculture. Investigations cover plant and animal physiology; plant, insect, microbial, aquacultural, bioreactor and environmental biotechnology; diseases, insects, and parasites; agronomy; soils; food science; food processing; environmental management; biological engineering; bioremediation; biochemistry; human and animal nutrition; breeding and genetics; and culture, production, economics, marketing, and quality of life for individuals and families.

CTAHR Program Goals:

To prepare its students for success, CTAHR’s programs focus on four goals that incorporate characteristics desired by prospective employers. Each CTAHR graduate should be able to:

- Communicate appropriately and clearly in a variety of oral and written forms to both professional and non-technical audiences.
- Apply analytical, problem-solving, business management, and technological skills to everyday and discipline-related challenges.
- Develop positive and ethical personal characteristics and appropriate interpersonal and leadership skills.
- Gain a broad understanding of real-world experiences and global issues through the exploration of and involvement in career-related opportunities.

Degrees and Certificates Offered

Certificates: Graduate Resource Management Certificate, Agribusiness Management Certificate

Bachelor’s Degrees: BS in animal sciences, BS in fashion design and merchandising, BS in biological engineering, BS in family resources, BS in food science and human nutrition, BS in molecular biosciences and biotechnology, BS in natural resources and environmental management, BS in plant and environmental protection sciences, BS in tropical plant and soil sciences

Master’s Degrees: MS in biological engineering, MS in entomology, MS in food science, MS in animal sciences, MS in molecular biosciences and bioengineering, MS in natural...
resources and environmental management, MS in nutritional sciences, MS in tropical plant pathology, MS in tropical plant and soil sciences

**Doctoral Degrees**: PhD in entomology, PhD in molecular biosciences and bioengineering, PhD in natural resources and environmental management, PhD in nutrition, PhD in tropical plant pathology, PhD in tropical plant and soil sciences

**Advising**
CTAHR Office of Academic and Student Affairs
Gilmore 210
3050 Maile Way
Honolulu, HI 96822
Tel: (808) 956-8183 or (808) 956-6733
Fax: (808) 956-3706
Email: acadaff@ctahr.hawaii.edu
Web: www.ctahr.hawaii.edu

**Undergraduate Programs**
Undergraduate programs in CTAHR provide students with an opportunity to acquire those scientific, professional, and personal competencies emphasized by Hawai‘i’s business, governmental, community, and scientific leaders. The college provides a balance of educational experiences that include classroom instruction, laboratory sessions, co-curricular activities, supervised internships, and international study. Student exchange programs are also available for those desiring short term exposure to other institutions.

**Admission Requirements**
Students may enter CTAHR as freshmen or as transfer students from other departments or academic institutions. Requirements for admission are the same as those for the UH Mānoa campus in general, except for the food science and human nutrition, family resources, fashion design and merchandising, and natural resources and environmental management majors. Transfer students are required to have a minimum GPA of 2.5 for fashion design and merchandising, and natural resources and environmental management majors, 2.6 for family resources majors, and 3.0 for food science and human nutrition majors. Pre-requisite coursework is also required for food science and human nutrition majors. Information on CTAHR undergraduate programs can be obtained from the CTAHR Office of Academic and Student Affairs.

**College Requirements**
To be eligible for a BS degree from CTAHR, students must complete the General Education Core requirements, CTAHR requirements, course requirements of the CTAHR major, and 45 credit hours of upper division courses (300+ level courses), earn a minimum cumulative 2.0 GPA in major courses, and maintain a minimum cumulative GPA of 2.0 in a minimum of 120-124 credit hours as prescribed by the major. Some majors may require more credit hours. All CTAHR undergraduates are required to complete a set of interrelated courses: FAMR 380/380L Research Methodology/Lab or NREM 310 Statistics in Agriculture and Human Resources; and an internship or capstone course within their major field. Foreign language requirements are specific to each academic program. Check with an academic advisor for more information.

**Double Major or Second Degree**
Students seeking a double major must have a minimum cumulative GPA of 3.25, demonstrate that the proposed majors are substantially different, and obtain approval from undergraduate advisors in both of the relevant programs.

Students seeking a second degree must have a minimum cumulative GPA of 3.0 and demonstrate that the proposed second degree is substantially different from the first degree. At least 30 credit hours are required for the second degree in addition to those associated with the first degree.

**Concurrent Degree**
It is the policy of CTAHR to allow CTAHR students and non-CTAHR students to earn undergraduate concurrent degrees in two separate programs. Students applying for an undergraduate concurrent degree in CTAHR must have earned at least 24 credits and have a UH Mānoa minimum cumulative GPA of 3.25. Students also need to meet other requirements for the concurrent degree.

**Graduate Programs**
Graduate studies leading to a master of science degree are available in nine fields: animal sciences; biological engineering; entomology; food science; molecular biosciences and bioengineering; natural resources and environmental management; nutritional science; tropical plant pathology; and tropical plant and soil sciences. Doctor of philosophy programs are available in six fields: tropical plant pathology, molecular biosciences and bioengineering, entomology, natural resources and environmental management, nutrition, and tropical plant and soil sciences.

Three of CTAHR’s graduate programs in tropical agriculture (entomology, natural resources and environmental management, and tropical plant and soil sciences), have been recognized as distinctive programs by the Western Interstate Commission for Higher Education (WICHE). Qualified students from participating states may enroll in these graduate programs at Hawai‘i’s-resident tuition rates.

CTAHR utilizes general UH Mānoa facilities, including the libraries, which offer extensive collections and information services, and the computing center, which provides access to individual computers as well as large mainframes. Along with the Pacific Biomedical Research Center, CTAHR sponsors the Biotechnology-Molecular Biology Instrumentation Facility for the benefit of researchers throughout UH Mānoa. The college’s facilities include a microcomputer laboratory, several research stations, and specialized laboratories with state-of-the-art equipment, all of which support research and instruction in the food and life sciences. On-campus affiliations with the Hawai‘i Institute of Marine Biology, Water Resources Research Center, East-West Center, Harold L. Lyon Arboretum, Sea Grant College Program, and Hawai‘i Natural Energy Institute extend CTAHR’s resources. The college is also affiliated closely with off-campus institutions, such as the Bernice P. Bishop Museum, USDA/ARS Tropical Fruit and Vegetable Research Laboratory, Hawai‘i Agriculture Research Center, U.S. Geological Survey, National Marine Fisheries Service, and Hawai‘i Department of Agriculture.

Students may contact individual departments, Graduate Education, 2540 Maile Way, Spalding Hall, Honolulu, HI 96822, or Financial Aid Services, 2600 Campus Road, Honolulu, HI 96822 for information on grants, fellowships, assistantships, scholarships, tuition waivers, loans, work-study programs, and job opportunities.
Information on CTAHR graduate programs can be obtained from the Office of Academic and Student Affairs, Gilmore 210, (808) 956-8183, or from departmental offices.

**Admission Requirements**
Students must hold a bachelor’s degree from an accredited U.S. college or university or its equivalent from a recognized foreign institution of higher learning. Admission requirements for various graduate programs are specified under each department’s description. Admission decisions are made by the Graduate Division in consultation with faculty in the field of study.

**College Requirements**
The requirements associated with the master of science degree vary with each program of study. The master of science Plan A (thesis) and Plan B (non-thesis) options are available in all programs; entomology, tropical plant pathology, and tropical plant and soil sciences programs also offer a Plan C (examinations) option.

The PhD degree culminates in a set of comprehensive and final examinations and a dissertation of original work. Special requirements exist in some fields of study. Contact Graduate Education or the departments for additional information.

**Instructional and Research Facilities**
Modern laboratories as well as statewide field laboratories are an important part of undergraduate and graduate instruction. Students are able to learn the latest research methods. Classrooms are well-equipped for learning computer applications.

**Student Organizations**
CTAHR students are encouraged to join and actively participate in student organizations. CTAHR student organizations provide opportunities for students to gain experience in their professional field through diverse activities. Students can acquire transferable skills and competencies outside of the classroom while gaining invaluable knowledge they can utilize in the work force. Developing lasting friendships with peers and faculty are also benefits of active participation in student organizations. Current CTAHR student organizations include:

- Innovators of Fashion
- Pre-Veterinary Club
- Food Science and Human Nutrition Council
- Tropical Plant and Soil Sciences Horticulture Society
- Friends of the Family
- CTAHR Student Ambassadors

- Natural Resources and Environmental Management Graduate Student Organization
- Ka Mea Kolo (Entomology Club)
- SOFT: Student Organic Farm Training
- Tropical Plant Pathology Graduate Student Organization
- Biological Engineering Student Association
- CTAHR Club

Exceptional students may also be recommended for membership to honorary societies such as: Gamma Sigma Delta and Phi Upsilon Omicron.

**Honors and Awards**
The College of Tropical Agriculture and Human Resources and its departments provide scholarships and awards to its students. For a list of these scholarships, see the “Tuition, Fees, and Financial Aid” section of this Catalog. More information on scholarships and awards can be obtained from the CTAHR Academic and Student Affairs Office, Gilmore 210, (808) 956-8183.

**Family and Consumer Sciences**
Fashion Design and Merchandising
Miller 201
Tel: (808) 956-8133

Family Resources
Krauss Annex 7
Tel: (808) 956-6519

2515 Campus Road
Honolulu, HI 96822
Email: FCS@ctahr.hawaii.edu
Web: www.ctahr.hawaii.edu/FCS

**Faculty**
B. W. K. Yee, PhD (Chair)—Asia and Pacific Islander adult development and aging, women’s health, Southeast Asians, minority career paths

Y. Bahng, PhD—retailing, international merchandising, and entrepreneurship

R. A. Caulfield, PhD—infinity, childhood, life span development

M. Cheang, DrPH—family resource management, children’s savings, family caregivers

D. R. Ching, PhD—agricultural leadership

J. L. Chong, MEd—adult and youth volunteer and leadership development, 4-H youth development (Hawai‘i Cooperative Extension Service)

P. Chow, MS—family resource management (O‘ahu Cooperative Extension Service)

M. A. Cristi, MS—merchandising management; consumer behavior and sociology

B. De Baryshe, PhD—child development, early childhood education, family resilience

H. Greenwood Junkemeier, MS—intergenerational and aging programs (Maui Cooperative Extension Service)

J. Kang, PhD—consumer behavior in digital commerce; apparel product development and retail store design using 2D/3D CAD

L. J. Kawamura, MPH—4-H youth development, foods and nutrition (Kaua‘i Cooperative Extension Service)

T. N. Le, PhD, MPH—risk and resilience of Asian and Indigenous youth; mindfulness-based interventions

* Graduate Faculty
The ability to demonstrate personal attitudes and skills appropriate to career positions in apparel and fashion-related industries. Classroom work is enhanced by one of the largest costume collections at a university in the U.S., giving students and faculty a rich source of items to draw upon for their classes and projects. In addition, students have the opportunity to use web-based technologies to supplement classroom activities. Opportunities to study at other universities and to participate in study tours to fashion centers of the world are another plus. A strong foundation for graduate study in apparel and related areas is provided.

All FDM majors take a core set of courses that provides them with:

- An understanding of and appreciation for the impact of global production and distribution of apparel;
- The ability to plan, develop, and merchandise apparel product lines and to evaluate apparel quality;
- An understanding of the role of dress and fashion in their lives and the lives of others;
- An understanding of the design, manufacture, marketing, retailing, and consumption of textile and apparel products;
- The ability to demonstrate personal attitudes and skills appropriate to career positions in apparel.

In addition to courses offered in the department, there are professional and honor society organizations. Phi Upsilon Omicron is a national honor society in family and consumer sciences with membership by invitation. Friends of the Family (FOF) provides service and professional experiences for FAMR majors while Innovators of Fashion (IF) does the same for FDM majors. Majors from any discipline are welcome to join FOF and IF.

**Undergraduate Study**

**Fashion Design and Merchandising Program**

Fashion Design and Merchandising (FDM) is a comprehensive undergraduate program whose mission is to prepare students with appropriate knowledge and skills for career positions in apparel and fashion-related industries. Classroom work is enhanced by one of the largest costume collections at a university in the U.S., giving students and faculty a rich source of items to draw upon for their classes and projects. In addition, students have the opportunity to use web-based technologies to supplement classroom activities. Opportunities to study at other universities and to participate in study tours to fashion centers of the world are another plus. A strong foundation for graduate study in apparel and related areas is provided.

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- An understanding of the design, manufacture, marketing, retailing, and consumption of textile and apparel products;
- The ability to demonstrate personal attitudes and skills appropriate to career positions in apparel.

The FAMR curriculum emphasizes the study of child, adolescent, adult development; family development (such as marriage and parenting); family resource management (such as consumer and family economics and family management); community needs; and leadership in human services occupations.

The program requires an internship providing work experience related to a student’s career interests. Students are prepared for graduate training in child and family studies, early childhood education, life span development, family life education, family and consumer sciences, and marriage and family therapy.

With supplementary course work, students may pursue graduate training in other social science disciplines such as social work, educational counseling, public health, urban and regional planning (e.g., community development), sociology, psychology, and law.

**Degrees Offered**:

BS in fashion design and merchandising, minor in merchandising, BS in family resources, MEd in early childhood education in conjunction with the College of Education.
The Curriculum
A strong FDM core includes required courses in the fashion industry, textiles, fashion illustration, historic costume, the social psychology of dress, and apparel construction. The core prepares students for career positions in both creative and business management areas of local and global fashion industries. Upon completing the core requirements, students take classes in 3 of 4 tracks: Design, Merchandising, Cultural, and Textile and Apparel topics.

Entrance Requirements
New students may be admitted directly into the program when they apply to UH Mānoa. Students transferring from other colleges within the UH System or from other universities must have a minimum GPA of 2.5 to be considered for admission to FDM.

Minor
The merchandising minor gives students who are not FDM majors the opportunity to gain the required theory and applied skills to understand the merchandising/retailing function and skillfully employ techniques that encourage consumers to interface with products and services locally or internationally. Merchandising/retailing is the largest private employer segment of Hawai‘i’s business community. Minimum GPA of 2.5 needed to be considered.

Degree Requirements
A summary of degree requirements is available in Miller 201, (808) 956-8133 or Miller 110, (808) 956-8105.

Goals
From the core courses required of all FDM majors will develop:
1. The ability to evaluate textile and apparel product quality in terms of fiber and fabric performance, product standards and specifications, and consumer needs and preferences;
2. The ability to conduct comprehensive analyses of aesthetic elements in textile and apparel products and to estimate the effect of design decisions on target consumer markets;
3. The ability to apply theories, concepts, and principles to predict the direction of fashion change, to plan seasonal apparel product lines for discrete consumer groups, and to generate creative solutions to design and/or apparel merchandising and marketing problems;
4. The ability to describe current issues in textile and apparel design, production, and distribution systems; to assess the impact of global textile and apparel production and distribution practices on workers, consumers, and the environment; and to relate theories regarding markets, trade, and economic development to issues in the production, consumption, and disposal of textile products;
5. An understanding of concepts, theories and principles regarding the impact of dress on human behavior and its role in sustaining culture and in reflecting and fostering social change, and the ability to analyze and identify aspects of dress in historic and socio-cultural context;
6. The ability to identify, locate, analyze, and synthesize relevant information and to effectively communicate ideas in written, oral, and visual forms using appropriate technologies;
7. The ability to demonstrate personal attitudes and skills appropriate to career positions in fashion-related business and industry, and in related education and service organizations.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Family Resources Program
The Family Resources (FAMR) Program provides students with a comprehensive education in family development and resource management, including course work and study in the areas of family relations, parenting, family economics and resource management, consumer economics, human development, and community leadership and resource development. The curriculum prepares students to work proactively in multicultural settings to enhance the quality of family life, providing students with an understanding of:
- The changing needs and dynamics of families over time;
- The management of personal, family, and community resources to meet these needs;
- The growth and development of individuals over the human life cycle;
- The interrelationship of individuals, families, and communities in the context of diverse socio-economic and cultural systems.

Students gain a social systems perspective of how families operate by studying the theoretical and applied literature that addresses the biological, social, cultural, psychological, and economic well-being of individuals and families and the environments in which they live. Students also study the changing functions of the family, the roles of its members, and the community programs and policies that affect the decisions and well-being of families and consumers. FAMR courses provide students with knowledge that they can apply to their personal development and family life. An internship in the student’s area of interest is an integral part of the curriculum.

Entrance Requirements
New students may be admitted directly into the program when they apply to UH Mānoa. Students transferring from other colleges/schools within the UH System or from other universities must have a minimum GPA of 2.6 to be considered for admission to FAMR.

Degree Requirements
A summary of degree requirements is available in Krauss Annex 7, (808) 956-6519 or Miller 110, (808) 956-8105.

Goals and Objectives
Students completing the FAMR degree are expected to achieve the following goals and objectives:
Goal 1: Acquire a knowledge base in human development.
Objective 1. Demonstrate criterion level knowledge of stages, processes, and ranges of typical human development
Goal 2: Acquire a knowledge base in family science and resource management.
Objective 1. Demonstrate criterion level knowledge of family diversity in the global community.
Objective 2. Demonstrate criterion level knowledge of family resource management processes.
Goal 3: Acquire a knowledge base of the community context in which family functioning and development take place.
Objective 1. Demonstrate criterion level knowledge of the effects of context (social, economic, political, historical, and cultural environment) on family functioning and development.

Goal 4: Acquire professional skills
Objective 1. Demonstrate criterion level skills in written communication.
Objective 2. Demonstrate criterion level skills in oral communication.
Objective 3. Demonstrate a basic level of computer literacy.
Objective 4. Demonstrate basic competence in “helping” skills.
Objective 5. Demonstrate basic research skills.

Goal 5: Apply knowledge and professional skills to address issues encountered in professional settings.
Objective 1. Demonstrate critical thinking skills and problem solving abilities.
Objective 2. Demonstrate commitment to professional values and ethical behavior.
Objective 3. Demonstrate a satisfactory level of preparation for the world of work and responsibility for continued professional growth.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Additional Opportunities

Provisional Certified Family Life Educator

The National Council on Family Relations (NCFR) has approved the family resources undergraduate program as meeting the standards and criteria required for the Provisional Certified Family Life Educator (CFLE) designation. Fully certified Family Life Educators work in the areas of program development, implementation, evaluation, teaching, training, and research related to individual and family well-being. Among other activities, they conduct workshops in parenting, marital relationships, and resource management, in hospitals, HMOs, clinics, and schools. FAMR graduates who complete the specified courses in ten family life substance areas can apply to NCFR for Provisional Certification. Once a graduate has completed two years of work experience in preventive, educational activities related to family well-being, the graduate can apply for full CFLE certification. FAMR internships, which include documented FLE activities may be used as part of the required work experience.

Master of Education in Early Childhood Education

The Department of Family and Consumer Sciences in the College of Tropical Agriculture and Human Resources and the College of Education Departments of Curriculum Studies and Special Education offer an interdisciplinary program leading to the degree of master of education in early childhood education. MEd in early childhood education requirements are located in the College of Education Departments of Curriculum Studies and Special Education section of this Catalog.

Human Nutrition, Food and Animal Sciences

Agricultural Sciences 216
1955 East-West Road
Honolulu, HI 96822
Tel: (808) 956-7095
Fax: (808) 956-4024
Email: hnfas@ctahr.hawaii.edu
Web: www.ctahr.hawaii.edu/hnfas/

Faculty
* H. M. Zaleski, PhD (Chair)—swine production and management, reproductive physiology
* J. Banna, PhD, RD (Graduate Chair, Nutritional Sciences MS program)—community nutrition, nutrition education in minority populations
* Y. Li, PhD (Graduate Chair, Food Science MS program)—food microbiology, food safety and probiotics
* R. Novotny, PhD, RD (Graduate Chair, Nutrition PhD program)—community and global nutrition, nutritional epidemiology
* J. Yang, PhD (Graduate Chair, Animal Sciences MS program)—molecular biology and animal biotechnology
* B. A. Buckley, PhD—beef production and breeding
A. Ditzler, RD—dietetics
* J. Dobbs, PhD—food composition, nutrition, domestic animals, avian and wildlife nutrition
* M. A. Dunn, PhD—nutritional biochemistry, vitamins and minerals
M. W. DuPonte, MS—livestock extension education (Hawai‘i Cooperative Extension Service)
* M. K. Fialkowski, PhD, RD—obesity in indigenous populations
G. K. Fukumoto, MS—livestock extension education (Hawai‘i Cooperative Extension Service)
* C. Y. Hu, PhD—animal growth, adipose differentiation, lipid metabolism
* A. S. Huang, PhD—food chemistry, taro processing
* R. Jha, PhD—feed evaluation and animal nutrition
* S. Jun, PhD—food engineering, biosensors and processing control
N. A. Kanehiro, MS, RD—human nutrition extension education (O‘ahu Cooperative Extension Service)
* Y. S. Kim, PhD—meat science, muscle biology, animal growth, biotechnology
* C. N. Lee, PhD—dairy production management and reproductive physiology
* J. Leslie, PhD, RD—native Hawaiian health
* S. R. Malecha, PhD—aquaculture production and breeding
* S. T. Nakamoto, MBA, PhD—marketing of perishable products, agricultural economics
L. C. Nakamura-Tengan, MS—consumer food safety, extension education and resource management (Maui Cooperative Extension Service)
* T. B. Ron, PhD—aquaculture extension and training
M. A. Segobiano, MS, CEC, CCE, CHE—chef instructor
* A. C. Shovic, PhD, RD—dietetics
M. H. Stevenson, MS—livestock extension education (Kaua‘i Cooperative Extension Services)
* M. L. Stewart, PhD—nutrition, dietary fiber, gut health
* A. M. Stokes, DVM, PhD—veterinary medicine, cardiovascular physiology
* M. S. Thorne, PhD—range production and ecology (Hawai‘i Cooperative Extension Service)
* C. A. Titchenal, PhD—nutrition and human performance, dietary supplements, nutrition journalism
* D. L. Vincent, PhD—reproductive physiology and endocrinology
J. M. Zee, MPH, RD—human nutrition extension education (Hawai‘i Cooperative Extension Service)

* Graduate Faculty
Cooperating Graduate Faculty in Animal Sciences
E. G. Grau, PhD—fish endocrinology
P. Lenz, PhD—neuroecology of zooplankton sensory systems
B. W. Mathews, PhD—aquaculture and nutrition

Affiliate Faculty in Animal Sciences
*S. Atkinson, PhD—marine mammals
J. Carpenter, PhD—livestock and marine mammal nutrition
C. Laidley, PhD—aquaculture reproductive endocrinology
K. R. Longnecker, PhD—invertebrate taxonomy and dietary analysis of Hawaiian monk seals
S. Moss, PhD—shrimp aquaculture
J. Odani, DVM—animal health, pathology
*B. Okimoto, DVM— exotic animal husbandry and diseases
L. Polasek, PhD—marine mammal biology, wildlife and fisheries sciences
L. C. Rawson, DVM—animal diseases, health and welfare
M. Snover, PhD—reptile, wildlife management and conservation biology
K. L. West, PhD—marine mammal science and biology
L. A. Woodward, PhD—fish, wildlife management and conservation biology
T. M. Work, DVM—fish and wildlife, health and conservation biology

Cooperating Graduate Faculty in Food Sciences
H. Ako, PhD—nutritional biochemistry, aquaculture, lipid metabolism
D. Borthakur, PhD—microbiology, biotechnology
L. Gaur, PhD—instrumental quality evaluation
Y. Li, PhD—food microbiology, food safety and probiotics
R. Paull, PhD—fresh fruit and vegetable physiology and handling
A. S. Saulo, PhD—food technology extension, food safety and quality
W. W. Su, PhD—bioprocess engineering
C. S. Tamaru, PhD—live feed, aquaculture

Cooperating Graduate Faculty in Nutritional Sciences
M. J. Berry, PhD—selenoproteins, antioxidants and human diseases
C. J. Bouhey, PhD—nutritional epidemiology, obesity and cancer
H. Davis, PhD—mitochondria
T. Delormier, PhD, RD—global and indigenous nutrition and public health
A. Franke, PhD—analytical chemistry, phytochemicals
R. Hertzler, PhD—exercise physiology, sports nutrition
D. Jenkins, PhD—bioengineering
L. Le Marchand, MD, MPH, PhD—nutritional epidemiology, genetic markers
Q. X. Li, PhD—bioremediation, environmental biotechnology
G. Maskarinec, MD, MPH, PhD—nutritional epidemiology, soy, hormones and cancer
P. V. Nerurkar, PhD—medical biochemistry
C. R. Nigg, PhD—exercise behavior

Affiliate Graduate Faculty in Nutritional Sciences
R. Leon-Guerrero, PhD—obesity and chronic disease prevention, diet assessment

Cooperating Graduate Faculty in Nutrition PhD Program
C. L. Albright, PhD—intervention research on energy balance; weight control; physical activity; dietary fat, fiber, and fruits/vegetables
M. J. Berry, PhD—selenoproteins; antioxidants and human disease
C. J. Bouhey, PhD—nutritional epidemiology, obesity and cancer
R. Cooney, PhD—tocopherols, carotenoids and coenzyme Q-10 mechanisms of action in health and disease
A. Franke, PhD—analytical chemistry, lab assessments, phytochemicals
R. Hertzler, PhD—exercise physiology, sports nutrition
J. D. Latner, PhD—clinical psychology, eating behaviors and disorders, obesity
L. LeMarchand, MD, MPH, PhD—nutritional epidemiology, genetic markers
G. Maskarinec, MD, MPH, PhD—nutritional epidemiology, soy, hormones and cancer
P. Nerurkar, PhD—metabolic disorders and alternative medicine
C. R. Nigg, PhD—theory of health behavior change, intervention, physical activity/exercise and nutrition behavior, research design
M. Okihiro, PhD—childhood obesity, early metabolic risk in Hawai’i
L. Wilkens, DrPH—biostatistics

Affiliate Graduate Faculty in Nutrition PhD Program
H. Turner, PhD—cell biology and immunology

Degrees Offered:
BS in animal sciences, BS in food science and human nutrition, MS in animal sciences, MS in food science, MS in nutritional sciences, PhD in nutrition

The Academic Program
The Department of Human Nutrition, Food and Animal Sciences (HNFAS) offers both undergraduate and graduate programs leading to BS, MS, and PhD degrees. Two BS degrees are available: animal sciences (ANSC) and food science and human nutrition (FSHN). The pre-veterinary medicine program is located in the department to provide advising for students seeking to attend veterinary professional training after college. Three MS degrees are offered: animal sciences, nutritional sciences, and food science. The department is also the home for the inter-college PhD program in nutrition. The MS and PhD programs are described under graduate study.

Animal science is the application of experimental investigation, cutting edge technology, and other scientific principles for the advancement of efficient and environmentally friendly animal agriculture and improved food quality and safety. Students receive training in both basic and applied agricultural systems, as well as in animal sciences. One focus of the animal science program is on pre-veterinary training but the program also emphasizes preparation for work in production and management systems for the major farm animals such as swine, sheep and goats, beef and dairy cattle, and aquatic/aquaculture animals. Students are also exposed to the challenges of proper care/welfare and management of pets and companion animals (including horses), marine mammals, exotic wildlife and/or zoo animals, and aquaculture animals. Unlike most continental U.S. institutions, the emphasis of the present program is on tropical production systems with particular reference to the Pacific Basin or other subtropical regions. Animal scientists have careers in management and production, veterinary medicine, food processing and marketing, animal biotechnology, zoo and wildlife management, the pharmaceutical and feed and aquaculture industries, teaching, extension education, and research. Those positions require skills in disciplines such as nutrition, genetics, physiology, environmental and waste management, meat science and growth biology, animal health, feed and forage/browse utilization, engineering, business management/marketing, and salesmanship. Other skills of critical importance are computer proficiency, written and oral communication, problem solving, and ability to build effective interpersonal relationships.

The undergraduate curricula in food science and human nutrition (FSHN) have a strong science base that is applied to food and human nutrition. Options in the curricula include dietetics, human nutrition, and science education. Interest in nutrition, food, and the relationship of food to human health and fitness has never been greater than today. Students majoring in any of the curriculum options are prepared for diverse careers in the food industry, health-care and fitness facilities, hospitals, nutrition education and communication enterprises,
government or private-sector food and nutrition agencies, science related research laboratories, and science education. Students learn problem-solving skills, approaches to critical thinking and basic principles in two related disciplines. The dietetic option has been approved by the American Dietetic Association. The human nutrition option can be directed toward nutrition education, sports nutrition, or other interests. The human nutrition option can serve as a pre-professional program in medicine, dentistry, nutrition, or other scientific graduate programs. The science education option provides students with a curriculum that fulfills the academic requirements for a chemistry, biology, or general science certification as a secondary school science teacher. To complete certification requirements, a student can apply for the College of Education Post-Baccalaureate Certificate in the Secondary Education Program.

Students are strongly encouraged to take required chemistry and biological sciences courses prior to entering the program. Students who want to transfer into the food science and human nutrition (FSHN) program are required to have a minimum GPA of 3.0 and to have completed FSHN 185 with a grade of B (not B-) or better and to have completed the following courses with a grade of C (not C-) or better: MATH 140, ANSC 200, 201, 244, 301, 321, and 445.

Upon entering either program, animal sciences (ANSC) or food science and human nutrition (FSHN), students will be assisted by academic advisors to identify their career objectives and select an appropriate option for study.

**Advising**
All FSHN and ANSC majors are required to report for advising prior to registration each semester.

**Undergraduate Study**

**BS in Animal Sciences/Pre-Veterinary Medicine**

**Degree Requirements**
- Course work in the basic sciences, mathematics, economics, and animal sciences including the following:
  - MATH 140 or above (except MATH 161)
  - PHYS 151/151L
  - CHEM 161/161L, 162/162L, and 272/272L
  - NREM 220 or ECON 131
  - MBBE 402/402L
  - BIOL 171/171L
- Animal sciences required courses:
  - ANSC 200, 201, 244, 301, 321, and 445
  - Four of the following: ANSC 446, 451, 453, 454/454L, 462, and 472
  - One of the following production courses: ANSC 431, 432, 433, and 450
  - Additional electives to make a total of 120 credit hours

In order to enroll in animal science courses, all prerequisite courses must be passed with a grade of C (not C-) or higher.

Because of the diversity among fields of specialization within animal sciences, specific course requirements will vary considerably among students. On the recommendation of the student's major advisor, courses will be selected from those offered in animal sciences, as well as in natural resources and environmental management, bioengineering, anatomy and reproductive biology, biochemistry and biophysics, chemistry, environmen-
Degree Requirements–All Human Nutrition Options

Course work in the basic sciences and mathematics for all human nutrition options include the following: MATH 140 or above, CHEM 161/161L, 162/162L, 272, PHYL 141/141L, 142/142L, MBBE 375 or 402, BIOL 171/171L, NREM 310. COMG 151 or 251 is also required.

Course work within the major include the following: FSHN 181/181L, 185, 370, 389, 485, 486, 492. To fulfill degree requirements, students must also complete the coursework designated in one of the options listed below.

Contact the Human Nutrition, Food, and Animal Science Department for current degree requirements, Ag Sci 216, 1955 East-West Road, (808) 956-7095.

Human Nutrition Dietetics Option

Students choosing a professional career as a registered dietitian (RD) and who desire to do nutrition counseling should select the academic course work outlined in this option. The Didactic Program in Dietetics at UH Mānoa is currently granted accreditation by the Accreditation Council for Education in Nutrition and Dietetics (ACEND), 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995, (800) 877-1600 ext. 5400. Upon receiving a bachelor of science degree, students must be accepted into an accredited internship or an approved pre-professional practice program. Upon successful completion of a 6 to 11 month internship, or Preprofessional Practice Program, the student is eligible to take the national dietetic registration examination administered by the Commission on Dietetic Registration. Students generally need to have a GPA of 3.2 or above to be competitive for internship programs. Students may contact Dr. Anne Shovic ((808) 956-3847, email: shovic@hawaii.edu), the Dietetics Program Director, and are encouraged to refer to the Dietetics Option Student Handbook for more information about this option (www.ctahr.hawaii.edu/hnfas/degrees/undergrad/DSH2012.pdf). Work and/or volunteer experience in the field of interest is highly recommended. Courses required for the Dietetics Option include BIOL 340 or CMB 411, PHRM 203, SOC 100, PSY 100, FSHN 311, 312, 322, 381, 440, 451, 467, 468, 469, 480, and 488.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Human Nutrition Pre-professional Option

This course of study allows students to prepare for post-baccalaureate study in nutrition and nutrition-related disciplines. With guidance from their advisor, students can design a course of study to prepare them for post-baccalaureate studies in health professional programs (medicine, dental, pharmacy, etc.), or a graduate degree program in nutrition or other biomedical science. This course of study does not meet all of the undergraduate academic requirements of the Academy of Nutrition and Dietetics to apply for a dietetic internship. Students in the Pre-professional option must take the following: a minimum of 9 credits of FSHN courses numbered 200 or higher; and MICR 130/140L or FSHN 440; and MBBE 402L; and a course in genetics or molecular biology; and 17 credits of electives.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Human Nutrition Sports and Wellness Option

Students who are interested in pursuing a career in sports and wellness, are required to complete course work in Structural kinesiology, Exercise Physiology (KRS 353, 354, and 354L), and Nutrition in Exercise and Sport (FSHN 480). Students in the Sports and Wellness option must take the following: a minimum of 9 credits of FSHN courses numbered 200 or higher; and MICR 130/140L or FSHN 440; and KRS 353, 354/354L, FSHN 480, and 8 credits of electives.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Degree Requirements–Food Science Option

This study track educates and develops skills in students who desire to work in food processing, regulation, and food business arena, both in the public and private sector. This track also prepares students for managerial positions since there is a high demand for people with skills in food science and knowledge of business, accounting, and interpersonal skills. Students learn about food chemistry, microbiology, structure, engineering, safety, regulation, sanitation, quality control, and business-oriented courses.

Course work in the basic sciences and mathematics for all food science options include the following: MATH 140 or above, CHEM 161/161L, 162/162L, 272, PHYL 151, MICR 130, 140L, MBBE 375 or 402, BIOL 171/171L, NREM 310. COMG 151, or 251 is also required.

Students in the Food Science option must take the following FSHN courses: FSHN 181/181L, 185, 381, 403, 411, 430/430L, 440, 445, 460, 477/477L, 494. All FSHN majors selecting the Food Science Option must select one of the following specialties to complete degree requirements:

Business: ACC 201, BUS 312, 315, ECON 130, IS 250

Pre-professional: CHEM 272L/273, MATH 215, 216, PHYS 152.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Requirements

A total of at least 120 credits are required for graduation. Students seeking additional information and advising should contact the Department of Human Nutrition, Food and Animal Sciences, Agricultural Sciences Building, 1955 East-West Road, Room 216, Honolulu, HI 96822; (808) 956-7095, email: hnfas@ctahr.hawaii.edu.

Graduate Study

The department offers graduate programs leading to MS and PhD degrees. Students can choose from three MS degree options: animal sciences, nutritional sciences, or food science. The department is also the home locus for the inter-college PhD program in nutrition. Admission and degree requirements for each program are listed below, but are subject to change. For current information, contact the Department of Human Nutrition, Food and Animal Sciences, Agricultural Sciences Building, 1955 East-West Road, Room 216, Honolulu, HI 96822; (808) 956-7095, email: hnfas@ctahr.hawaii.edu.

MS in Animal Sciences

The MS in animal sciences is offered in both the basic and applied areas of genetics, nutrition, physiology, reproduction, animal health, molecular biology of growth and metabolism, and animal muscle biology.
Specialty areas consist of beef-cattle nutrition, grazing management, and genetics; dairy-cattle nutrition and physiology (especially the management of cattle in a hot climate); swine management; reproductive physiology and endocrinology of sheep, cattle, fish and swine; molecular biology of animal growth and metabolism; muscle biology and meat science; reproduction, animal health; nutrient/waste management; and freshwater and saltwater shrimp breeding and production, nutrition, and pond management systems. Emphasis is placed on the application of scientific methods for both the development and improvement of animal industries in subtropical and tropical environments. There is also the opportunity for cooperative studies in the areas of care/welfare and management of pets and companion animals (including horses), marine mammals, exotic wildlife, and/or zoo animals. Candidates wishing to specialize in animal breeding and genetics should be particularly strong in mathematics, including statistics, with a good biological background.

Admission Requirements
To be considered for admission to the animal sciences program, an applicant must: (1) hold a bachelor’s degree with a major in animal science (or the equivalent thereof) from an accredited institution of higher learning with a GPA of 3.0 or higher, (2) provide evidence of superior scholarship in previous academic work, (3) arrange for three letters of recommendation, (4) submit GRE general test scores, (5) submit an application including a statement of objectives, (6) submit a resume, and (7) submit a TOEFL score of 580 minimum, 600 recommended (250 computer) if a foreign student. Interviews by phone or in person in Hawai’i may be requested by the admissions committee. An applicant with a bachelor’s degree in a major other than animal or veterinary sciences who otherwise qualifies for admission will be required to take ANSC 200 or 201, one production course, and such other undergraduate courses deemed necessary by the department as essential background to the applicant’s studies. The ANSC 200 or 201 requirements may be satisfied through meeting the teaching experience requirement. The deadlines for receipt of all application materials are February 1 for fall applicants, and September 1 for spring semester applicants.

Degree Requirements

Plan A (Thesis)
Students must complete a minimum of 30 credit hours, including:
- At least 18 credits of course work at the graduate level, 12 of which must be at the 600 level or above (excluding 699 and 700) including two credits of ANSC 641 (Seminar in Animal Sciences) and FSHN 601;
- a maximum of 2 credits of Directed Research (ANSC 699); and
- 10 credits of Thesis Research (ANSC 700).

Plan B (Non-thesis)
Students must complete a minimum of 30 credit hours, including:
- At least 18 credits in course work numbered 600 and above (excluding 699), including two credits of ANSC 641 and FSHN 601.
- 6-9 credits of Directed Research (ANSC 699).
- Remaining credits must be at the graduate level.

Both Plan A and B
A general exam on basic knowledge in the animal sciences is required of all students to advance to candidacy for the MS degree. A final exam based on the student’s Plan A Thesis Research or Plan B Directed Research is also required. Students are required to attend weekly seminars each semester and present a minimum of three formal seminars during their graduate training (including their thesis defense). A maximum of 2 credits is allowed for graduate seminar (ANSC 641). The following courses are recommended as a core for most graduate students in animal sciences: ANSC 642, 643, 644, 650, 652, 657, 687, and a graduate-level statistics course.

Each student will be required to serve as a teaching assistant (TA), in either a paid or non-paid status, for a minimum of one course for one semester. This experience must include leading laboratory or discussion sections, and evaluation by the instructor.

In both plans (on the recommendation of the student’s graduate committee), the graduate credit hours will be selected from the graduate courses offered in animal sciences or other related disciplines such as anatomy and reproductive biology, biochemistry, chemistry, genetics, microbiology, physiology, public health, and zoology. Because of the diversity of specializations within animal sciences, specific course requirements will vary considerably among students. Further information is available at www.ctahr.hawaii.edu/hnfas/degrees/grad/ANSC.html.

MS in Nutritional Sciences
The MS in nutritional sciences prepares students to understand the scientific basis of nutrition, its application to health and fitness, and the skills needed to conduct basic and applied nutrition research. Subject areas of concentration include clinical nutrition, obesity, dietary fiber, functional fiber and bioactive food components, diet and cancer, mineral nutrition and toxicology, sports nutrition, nutrition education, nutritional product development, community and international nutrition, nutritional biochemistry, and nutritional epidemiology. The program does not include an RD internship. Cooperating programs include public health, kinesiology and rehabilitation science, food science, animal sciences, physiology, John A. Burns School of Medicine, and the University of Hawai’i Cancer Center.

Depending on the area of focus, students are prepared for diverse careers in nutrition and food-related industries, government agencies, and academic institutions. Graduates have found employment as college instructors; nutrition educators or consultants in the private sector; nutritionists in the food industry, fitness facilities, or health-related government agencies; and as research scientists in the health-care industry, private sector, government, or academic research institutions. Many have pursued PhD or other professional degrees at major universities around the country.

Admission Requirements
Academic prerequisites include a bachelor’s degree in nutrition or a closely related field, a minimum grade point average of 3.0, and undergraduate course work in nutrition, physiology, biochemistry, and statistics. Motivated students without a nutrition related degree may apply, but will be expected to make up undergraduate course deficiencies if admitted into the program. Students are strongly encouraged to take introductory science courses prior to applying to the program including at least two of the above mentioned prerequisites (one preferably being in-
Introductory nutrition). Additional requirements include submission of GRE General Test scores (no minimum score required), two confidential recommendations (using our program’s recommendation forms), a TOEFL score of 580 minimum, 600 recommended (250 computer, 100 internet) if a foreign student; a personal resume; and a completed Graduate Admissions Application including statement of objectives. Interviews by phone (or in person if in Hawai‘i) may be requested by the admissions committee. The deadlines for receipt of all application materials are February 1 for fall semester applicants, and September 1 for spring semester applicants.

Further information is available at www.ctahr.hawaii.edu/hnfas/degrees/grad/NUTRMs.html.

Degree Requirements

Two MS degree options are available: Plan A (thesis) and Plan B (non-thesis). Generally, students are expected to follow Plan A unless the Plan B option is approved by the graduate chairperson and the student’s advisor.

Plan A (Thesis)

Students must complete a minimum of 30 credit hours, including:

- 18 credit hours of course work at the graduate level, 12 of which must be at the 600 level (excluding 699 and 700);
- 2 credits of 699; and
- 10 credits of 700.

Plan B (Non-thesis)

Students must complete a minimum of 30 credit hours, including:

- At least 18 credit hours of course work at the 600 level or above (excluding 699) and
- 6-9 credits of Directed Research (699); and
- Remaining credits are fulfilled by graduate level electives that are selected in consultation with the graduate advisor.

Both Plan A and B

All students are required to pass an oral exam of basic nutrition knowledge to advance to candidacy for the MS degree, and pass a final exam/oral defense of their Thesis Research (Plan A) or Directed Reading and Research (Plan B). The following courses are required as a core for most graduate students in nutritional sciences: FSHN 601, 681, 685, 689, a graduate-level statistics course, and at least one of the following: FSHN 668, 682, 784, or 785. FSHN 681 Seminar in Food and Nutritional Sciences, must be taken at least four times, including at least twice for a letter grade (A-F). Each student will be required to serve as a teaching assistant (TA), in either a paid or non-paid status, for a minimum of one semester. This experience must include a significant instructional component and evaluation by the instructor.

In both plans (in consultation with the student’s graduate committee), the graduate credit hours will be selected from the graduate courses offered in nutritional sciences as well as other related disciplines such as food science, cell and molecular biology, epidemiology, genetics, physiology, public health, kinesiology, and statistics. Because of the diversity of specializations within nutritional sciences, specific course requirements will vary among students. Please see our website at www.ctahr.hawaii.edu/hnfas/degrees/grad/NUTRMs.html.

MS in Food Science

The MS in food science offers areas of concentration in food safety and quality, food processing and engineering, food chemistry and biochemistry, food microbiology, product development, and food science education. Graduates have found employment as college instructors, technical personnel in the food industry, regulatory or other governmental agencies, and researchers. Others have pursued further postgraduate studies.

Admission Requirements

Academic prerequisites include a bachelor’s degree in food science or a closely related field, a minimum grade point average of 3.0, and undergraduate course work in introductory foods, biochemistry, introductory nutrition, and statistics. Motivated students without a food science-related degree may apply, but will be expected to make up undergraduate deficiencies if admitted. Students are strongly encouraged to take chemistry and introductory food courses prior to applying to the program.

Additional requirements include: submission of GRE General Test scores (no minimum score required); two confidential recommendations (using our program’s recommendation forms); a TOEFL score of 580 minimum, 600 recommended (250 computer) if a foreign student; a personal resume; and a completed Graduate Admissions Application including statement of objectives. Interviews by phone or in person if in Hawai‘i may be requested by the admissions committee. The deadlines for receipt of all application materials are February 1 for fall semester applicants, and September 1 for spring semester applicants.

Degree Requirements

Plan A (Thesis)

Students must complete a minimum of 30 credit hours, including:

- At least 18 credit hours of course work at the 600 level or above (excluding 699) and
- 6 to 9 credits of Directed Research (699); and
- Remaining credits are fulfilled by graduate level electives that are selected in consultation with the graduate advisor.

Both Plan A and B

All students are required to pass an oral exam of basic nutrition knowledge to advance to candidacy for the MS degree, and pass a final exam/oral defense of their Thesis Research (Plan A) or Directed Reading and Research (Plan B). The following courses are required as a core for most graduate students in nutritional sciences: FSHN 601, 607, 608, 681, 701, and a graduate-level statistics course. Each student will be required to serve as a teaching assistant (TA), in either a paid or non-paid status, for a minimum of one course for one semester. This experience must include a significant instructional component and evaluation by the instructor.
In both plans (in consultation with the student’s graduate committee), the graduate credit hours will be selected from graduate courses offered in food science as well as other related disciplines such as biochemistry, nutrition, microbiology, genetics, biotechnology, cell and molecular biology, and statistics. Because of the diversity of specializations within food science, specific course requirements will vary among students. Further information is available at www.ctahr.hawaii.edu/hnfas/degrees/grad/FSHN.html.

**PhD in Nutrition**

In today’s world, the relationship between diet and health is of great interest among consumers, medical professionals, research scientists, government policy makers, and private industries related to food, agriculture, and healthcare. To serve these clients and improve human health, especially in Hawai’i and the Asia-Pacific region, the PhD program in nutrition is designed to prepare future leaders and innovators who can expand our knowledge about food and health, solve nutrition-related problems, propose effective nutrition policies, guide new product and service development, and be ethical and effective researchers, communicators, and educators. To ensure that graduates are prepared for these roles, students will be expected to demonstrate:

1. Comprehensive understanding of core nutrition knowledge;
2. Advanced scholarship in a specialty area (i.e., expertise in at least one overlapping biomedical discipline e.g., biochemistry, physiology, cell and molecular biology, food science/functional foods, epidemiology, biostatistics, medicine, etc.);
3. Appropriate exposure to social and career-building disciplines (e.g., education, communications, information technology, technical writing, social sciences, etc.);
4. Ability to conduct original scholarly research, develop skills in research methodologies and grant writing, understand research ethics, and effectively dissemination research findings via peer-reviewed publications, seminars, and practical applications such as teaching.

To accomplish these goals, the PhD program integrates faculty and resources from the instructional and research programs housed in the College of Tropical Agriculture and Human Resources (CTAHR), John A. Burns School of Medicine (JAB-SOM), and University of Hawai’i Cancer Center to create an inter-college PhD program that will produce highly marketable, interdisciplinary graduates that can assume leadership roles in industries related to food, agriculture, and healthcare. To serve these areas, these prerequisites must be made up early in the student’s program. The admissions committee will determine course deficiencies in an applicant’s background.

Additional admission requirements include a minimum grade point average of 3.4 out of 4.0 for applicants with a BS, and 3.6 out of 4.0 for applicants with a MS or other advanced degree; submission of GRE general test scores that demonstrate performance above the 50% percentile in all areas; three letters of recommendation from individuals that can comment on academic and research potential, a personal resume, and a completed Graduate Admissions Application including a personal statement of objectives that includes reasons for wanting to attend graduate school, research interests, and career goals. Foreign applicants must obtain a minimum TOEFL score of 600 (paper), 250 (computer), or 100 (internet). Interviews (in person or by phone) are required of all applicants deemed admissible by the admissions committee. In selecting applicants for admission, particular attention will be paid to the quality and depth of the personal statement, the strength of the letters of recommendation (i.e., they must indicate exceptional potential), and the professional qualities and academic depth presented in the personal interview.

The deadline for receipt of all application materials are **February 1** for fall and **September 1** for spring applicants. The resume and personal statement of applicants should be sent electronically to the graduate chair PhD in Nutrition at hnfas@ctahr.hawaii.edu.

Further information is available at www.ctahr.hawaii.edu/hnfas/degrees/grad/NUTRPhd.html.

**Degree Requirements**

The principal requirements for the PhD degree are:

1. Pass a qualifying examination,
2. Complete required course work,
3. Pass a comprehensive exam to demonstrate advanced scholarship in the field, and
4. Defend a doctoral dissertation that presents original, independent research.

In addition, all PhD candidates are required to participate in a substantial teaching project with a graduate faculty mentor during at least one semester of their program (if entering with a BS, two semesters are required).

**Qualifying exam.** The purpose of the qualifying exam is to evaluate the student’s basic knowledge in nutrition-related fields, determine if the student has a strong enough background to proceed successfully with their doctoral program, and enable advisors to assist the student in planning an appropriate program of study. The areas covered by the exam include basic nutrition, biochemistry, physiology, statistics, epidemiology, and experimental design. The exam may be oral and/or written as decided by the examining committee. The committee will consist of at least three members of the graduate faculty chosen by the student in consultation with their advisor, and must be approved by the graduate chair. The exam is repeatable once after successful petition to the graduate chair. Students failing the exam twice must withdraw from the program. Students entering the program with a BS degree will be required to pass the qualifying exam within the first two years of their program.
Candidates entering with a MS or other advanced degree must pass the exam within one year. Extensions can be made for students with course deficiencies to make up. Students entering from the nutritional sciences MS program at UH Mānoa within five years of receiving their MS degree are exempt from the exam, as suitability for the PhD program will be assessed during their MS program via the candidacy exam and thesis defense/final exam.

Dissertation proposal defense. Students entering with a BS degree are required to defend their dissertation research proposal to the satisfaction of their dissertation advisor. They must do this after they pass their qualifying exam and after they have met all other requirements for the Plan A master’s degree in nutritional sciences except the completion of a formal thesis. The proposal should consist of a written and oral presentation of the proposed dissertation research. This proposal defense serves as a capstone, similar to a MS thesis defense, and assures that the student can demonstrate sufficient research skills and knowledge of the research plan to proceed with the dissertation research. The dissertation committee will consist of the student’s advisor and at least four members of the graduate faculty chosen by the student in consultation with their advisor, and must be approved by the graduate chair. The student must pass the proposal defense to be eligible for the comprehensive exam. The defense is repeatable once after successful petition to the graduate chair.

Required course work. PhD students are required to have at least 18 credits of graduate level course work (excluding research credits) beyond their MS degree. If entering with a BS degree, at least 36 credits of graduate level course work (excluding research credits) beyond the BS are required. These course requirements are described below.

Students entering with a BS degree are required to meet all requirements for the Plan A master’s degree in nutritional sciences, excluding the production of a formal written thesis. The course requirements include any course deficiencies recommended by the admissions committee plus the following 18 credits of graduate level coursework:

- 11 credits of required nutrition courses [FSHN 601, 685, 689 and at least one of the following: FSHN 668, 682, 784, or 785], including 2 credits of FSHN 681
- 3 credits in statistics at the graduate level (e.g. PH 655)
- 4 credits of advisor-approved electives

In addition, at least 12 credits of 699 are required.

Students entering with a MS or other advanced degree are required to make up any course deficiencies in their background prior to taking the qualifying exam. Course deficiencies will be assessed by the admissions committee. Credits obtained by making up course deficiencies cannot be used to meet the 18 credit course requirements for the PhD.

After the above requirements are met by students entering with a BS or MS, all continuing PhD students must take a minimum of 18 credits of course work (excluding research credits) consisting of at least:

- 6 credits of graduate nutrition courses including 2 credits of FSHN 681
- 6 credits in graduate level courses that will foster development of a specialty area in a field overlapping with the discipline of nutrition. For example: biochemistry, cell and molecular biology, epidemiology, medicine, biostatistics, functional foods/food science.

- 6 credits in graduate level courses from career-building disciplines such as communications, education, information technology, technical writing, or social sciences.

The student in consultation with his or her dissertation advisor will decide on the specific courses used to meet the above 18-credit requirement. An example of a model course of study for a student entering with a BS in nutrition, and examples of available specialty area courses and career-building courses are available on our program website at: www.ctahr.hawaii.edu/hnfas/degrees/grad/NUTRPhd.html.

Required teaching experience. To foster teaching skills, all PhD candidates must participate in a substantial teaching project during at least one semester of their program. All students who are not paid teaching assistants are required to develop, with an instructor of their choice, an instructional experience equivalent to a quarter time teaching assistantship (10 hours per week) that includes in-class lectures/instructional activities, or laboratory instruction. At the conclusion of the experience, their instructional mentor must submit a written evaluation of their performance to the graduate chair. Unsatisfactory evaluations will result in the need to repeat the experience until a favorable evaluation is achieved. Students entering with a BS must additionally fulfill the instructional experience required as part of the MS in nutritional sciences (6 hours per week for one semester) prior to sitting for their dissertation proposal defense.

Comprehensive exam. When candidates have completed all, or most of their course work toward the PhD, they must pass a comprehensive exam to verify that they can function as a professional in the field. The timing of the exam will be decided upon by the student in consultation with their advisor. The purpose of this exam is to determine the student’s comprehension of fundamental nutrition knowledge, expertise in an overlapping discipline, and competence in research, communications, and critical thinking skills. The form of the exam is both written and oral. It will be conducted by an examination committee composed of at least three members of the graduate faculty (excluding the student’s advisor) with collective expertise to cover the range of expectations listed above. The composition of the committee is proposed by the student in consultation with their advisor. To insure the quality and consistency of exam committees, its composition must be approved by the graduate chair. The time frame and grading of the exam will be decided by the committee. The examination criteria and procedures will conform to Graduate Education’s standards for all Mānoa doctorate programs. A student must pass this exam to achieve candidacy and remain in the PhD program. The exam is repeatable once after successful petition to the graduate chair. After passing the exam the student is eligible to formally select their doctoral committee as described below.

Dissertation

All PhD candidates must conduct scholarly, independent, original research that contributes new knowledge to the field. The candidates develop and conduct research projects under the direction of their dissertation advisor and doctoral committee. The doctoral committee is selected by the student in consultation with their dissertation advisor, and must be approved by the graduate chair. The dissertation advisor (chair of the doctoral committee), and a majority of the committee members must come from the nutrition graduate faculty. The committee must have at least 5 members, with one member being from a graduate faculty outside the student’s field of study and area
of specialization. At the conclusion of the research process, students write a dissertation, i.e., a scholarly presentation of their research in publication form. The student’s doctoral committee then conducts a final examination to assess the student’s ability to orally present their dissertation in a seminar format, and defend their research and written dissertation. The final exam is repeatable once after successful petition to the graduate dean. The dissertation, final exam criteria and procedures will conform to Graduate Education’s standards for all UH Mânoa doctorate programs. Further information is available at: www.ctahr.hawaii.edu/hnfas/degrees/grad/NUTRPhd.html.

**Honors and Awards**

The department has several teaching assistantships, research assistantships, and scholarships that are awarded to deserving qualified students.

## Molecular Biosciences and Bioengineering

Agricultural Science 218  
1955 East-West Road  
Honolulu, HI 96822  
Tel: (808) 956-8384  
Fax: (808) 956-3542  
Email: mbbe@ctahr.hawaii.edu  
Web: www.ctahr.hawaii.edu/mbbe/

**Faculty**

*D. Christopher, PhD (Chair)—photosynthesis, plant biotechnology,*  
*gene regulation, genomics, protein folding*

*D. Borthakur, PhD (Graduate Chair)—plant-microbe interaction,*  
*plant biotechnology*

*H. Ako, PhD—aquaculture, environmental biochemistry and biotechnology*

*J. P. Bingham, PhD—peptide synthesis, marine neurotoxins*

*L. D. Gaut—bioproduction control and automation,*  
electromechanical systems engineering

*A. Hashimoto, PhD—bioengineering, bioenergy*

*D. M. Jenkins, PhD, PE—biosensors and bioinstrumentation*

*E-S. Kan, PhD—environmental engineering, bioremediation,*  
*and bioenergy*

*S. Khanal, PhD, PE—bioenergy and bio-based products; waste to energy heat and mass transport in chemically reacting ecosystems,*  
*energy conversion, bioremediation*

*C. Kinoshita, PhD—heat and mass transport in chemically reacting systems,*  
*energy conversion, bioremediation*

*Q. Li, PhD—bioremediation, environmental biotechnology*

*P. Nerurkar, PhD—cancerogenesis-induced metabolic disorders and biochemical mechanisms of environmental carcinogenesis*

*G. Presting, PhD—bioinformatics*

*V. Stenger, PhD—particle astrophysics*

*W-W. Winston Su, PhD—biochemical engineering, cell culture engineering*

**Graduate Faculty in Molecular Biosciences and Bioengineering**

All faculty of the department are regular graduate faculty in Molecular Biosciences and Bioengineering.

**Cooperating Graduate Faculty**

R. Allsopp, PhD—stem cells, regulation of telomerase expressor in cells

A. Alvarez, PhD—plant-pathogen interactions, biocontrol of plant diseases

A. S. Bachmann, PhD—tumor growth and cell differentiation

S. Cao, PhD—natural products therapeutics

M. Carbone, MD, PhD—cancer biology

S. Chang, PhD—vaccine development, molecular immunology

E. D. H. Cheng, PhD—hydrology, hydrotics, wind engineering

M. Cooney, PhD—marine biotechnology

H. G. de Couet, PhD—molecular biology, invertebrate biology, biotechnology

M. Dunn, PhD—molecular nutrition

T. Ernst, PhD—magnetic resonance imaging

G. Grau, PhD—marine biology

C-E. Ha, PhD—biochemistry, human serum albumin

T. Hoang, PhD—molecular microbiology

J. Hu, PhD—plant virology

S. Jun, PhD—food engineering

Y. S. Kim, PhD—animal biotechnology

C. C. Liu, PhD—bioengineering

P. S. Lorenzo, PhD—cancer biology

S. M. Masutani, PhD—thermal conversion of biomass

C. Morden, PhD—molecular systematics

L. Ndhlovu, PhD—HIV immunology

V. Nerurkar, PhD—molecular virology and epidemiology

H. L. Ng, PhD—protein structure

J. Ramos, PhD—cancer biology

C. Ray, PhD—ground water hydrology, bioremediation

R. Shoher, MD—molecular medicine

V. A. Stenger, PhD—magnetic resonance imaging

S. Sung, PhD—bioremediation

C. Tamaru, PhD—aquaculture

S. Q. Turn, PhD—biomass gasification

C. Walton, PhD—cardiovascular research

A. A. Yanagihara, PhD—biochemistry, peptide toxins

J. Yang, PhD—animal molecular biology and biotechnology

J. Yu, PhD—bioengineering, marine bioproduct development

**Affiliate Graduate Faculty**

A. J. Stokes, PhD—cell biology

J. Zhu, PhD—plant transformation, biotechnology

**Degrees Offered:** BS in biological engineering, BS in molecular biosciences and biotechnology, MS in biological engineering, MS in molecular biosciences and bioengineering, PhD in molecular biosciences and bioengineering

**The Academic Program**

The Molecular Biosciences and Bioengineering Department (MBBE) features a multidisciplinary faculty having a broad spectrum of interests in biotechnology, molecular biology, biochemistry, and biological engineering. The department’s strong basic and applied research programs and its active, internationally recognized faculty combine to provide students with exciting learning opportunities. The department houses degree-granting programs in biological engineering (BS and MS) and in molecular biosciences and bioengineering (MS and PhD), and molecular biosciences and biotechnology (BS).

**Biological Engineering Program**

The mission of the biological engineering (BE) program is to provide engineering students a unique opportunity to study biological systems from the engineering perspective. The biological engineering program teaches the importance of the systems approach to problem solving. Undergraduate (BS) and graduate (MS) degrees are offered in biological engineering.
Undergraduate Study

BS in Biological Engineering
The mission of the biological engineering program is to provide students a unique opportunity to study the fundamentals of engineering and biology and the application of engineering to biological systems. Example applications in biological engineering include processing of biomass for alternative energy uses or added value, bioreactor design for producing high-valued biologically-based products, bioremediation and biological treatment of wastes, and sensors and control engineering for biological systems. Undergraduates complete a comprehensive curriculum including the basic sciences (biology, chemistry, and physics), engineering mathematics, core engineering (civil, electrical, and mechanical), and fundamental and specialized biological engineering courses. Students receive integrated training in biology and engineering, culminating in a two-semester engineering design sequence.

To fulfill its mission, the BE program has four educational objectives, which describe the achievements of graduates within a few years after graduation.
1. Use engineering skills to solve problems involving living systems to benefit society.
2. Contribute to the design, manufacture, testing, and/or operation of systems involving biology in fields such as biotechnology, environmental systems, energy, or agriculture.
3. Pursue professional development, e.g., attain professional licensure, earn a graduate degree, and attend professional meetings and workshops.
4. Demonstrate strong professional ethics, effective communication, teamwork, and safe practices.

Students are expected to demonstrate accomplishment of the following outcomes at the time of graduation:
- An ability to apply knowledge of mathematics, science, and engineering.
- An ability to design and conduct experiments, as well as to analyze and interpret data.
- An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- An ability to function on multidisciplinary teams.
- An ability to identify, formulate, and solve engineering problems.
- An understanding of professional and ethical responsibility.
- The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- A recognition of the need for, and an ability to engage in lifelong learning.
- A knowledge of contemporary issues.
- An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

The bachelor of science in biological engineering is the only undergraduate degree offered by the program. Students benefit from small class size and one-on-one interactions with faculty.

Requirements
General Education Requirements, including the following:
- ENG 100 or approved FW course (FW)

Graduate Study

MS in Biological Engineering
The research areas in biological engineering open to MS students include management of wastes and wastewater; engineering for cell culture, fermentation, micropropagation, and bioconversion; engineering-intensive horticultural and aquatic biosystems; modeling and optimization of bionresource production and processing systems; water management and irrigation system design; spatial decision support systems for environmental protection and resource development; bioremediation; biological and thermochemical conversion; control, automation and mechanization of biological systems. Graduates of the program have entered careers in industry and public agencies or have undertaken further study in a PhD degree program. Intended candidates for the MS must present a bachelor’s degree from an accredited engineering program or the equivalent.

Plan A Requirements
- 21 course credits and 9 thesis research credits.
MBBE 699 and 700 cannot be used to satisfy course credit requirements.
12 or more course credits must be at 600 level or above.
12 or more course credits must be in biological engineering; of these 9 must be earned in courses numbered 600-698.
One graduate seminar in biological engineering or equivalent.
Pass a final oral examination administered by a committee of three or more graduate faculty, chaired by the student’s thesis advisor.
Enrolled in the graduation semester. If all other course work is completed, one credit of BE 700 must be taken in the graduation semester.

Plan B Requirements
27 course credits and 3 credits of MBBE 699 on a design or research project.
MBBE 699 cannot be used to satisfy course credit requirements.
18 or more course credits must be at 600 level or above.
18 or more course credits must be in biological engineering; of these 12 must be earned in courses numbered 600-698.
One graduate seminar in biological engineering or equivalent.
Pass a final oral examination administered by a committee of three or more graduate faculty, chaired by the student’s advisor.
Enrolled in the graduation semester. If all other course work is completed, one credit of BE 500 must be taken in the graduation semester.

General Guidelines and Requirements for MS Plan A
Minimum course requirements: 12 credits of 600-level courses (not including MBBE 699), 6 credits of 400 level courses (not including 499), 6 credits of 699 and 6 credits of 700. Graduate students are encouraged to take one credit seminar (610 or equivalent) each academic year. They require at least one seminar credit for MS degree. The thesis proposal or defense seminar cannot be used to meet this requirement. All courses must be approved by the committee and the graduate chair.
Two-page proposal. Like PhD students, MS students also need to discuss with their major advisors about their research projects and write a two-page proposal within the first semester.
A thesis proposal seminar: MS students need to present their preliminary results and the plan of work in a proposal seminar. MS students who conduct research in laboratories outside the Mânoa campus may present their proposal seminars in their laboratory locations.
Presentation at the CTAHR symposium. MS Plan A students must make at least one presentation in the CTAHR symposium. They are encouraged to make presentations in other national and international conferences.
The thesis defense. MS Plan A students must present a public presentation of work in the final semester. Students should consult with their committee and the graduate chair for a convenient date for this presentation at the middle of the final semester.
Publication. Students are encouraged to publish a paper before defense.

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MBBE 700 cannot be used to satisfy course credit requirements.
18 or more course credits must be at 600 level or above.
18 or more course credits must be in biological engineering; of these 12 must be earned in courses numbered 600-698.
One graduate seminar in biological engineering or equivalent.
Pass a final oral examination administered by a committee of three or more graduate faculty, chaired by the student’s advisor.
Enrolled in the graduation semester. If all other course work is completed, one credit of BE 500 must be taken in the graduation semester.

General Guidelines and Requirements for MS Plan B
Minimum course requirements: 18 credits of 600-level courses (not including MBBE 699), 9 credits of 400 level courses (not including 499), 3 credits of 699. Graduate students are encouraged to take one credit seminar (610 or equivalent) each academic year. They require at least one seminar credit for MS degree. The final research presentation cannot be used to meet this requirement. All courses must be approved by the graduate chair.
Research report, final presentation and oral exam. The Plan B students also do a research project for at least one semester.
The results of this research should be written as a ‘research report’ and submitted to a committee composed of the research advisor, another faculty, and the graduate chair. The results also must be presented as a seminar in the final semester. At the end of the presentation, the committee will ask questions about the research project and other related subject. The written report should be about 10–20 pages, double space, and should contain the following sections: abstract (200–300 words), introduction (background and justification, 1-page), literature review (3–7 pages), objectives, materials and methods (3–7 pages), results and discussion (3–10 pages), and references. For graduation, a student must obtain satisfactory grades in the research report, oral presentation, and the oral exam.

**General Guidelines and Requirements for PhD Degree**

- **A temporary committee:** graduate chair appoints a temporary committee for each PhD student. The committee comprises the student's supervisor (major advisor), graduate chair, and a faculty member. The committee advises on course work and other academic and research related matters.
- **Course work.** Students are required to take a minimum of three high-level courses. The courses must be pre-approved by the major advisor and graduate chair. Graduate students are encouraged to take one credit seminar (610 or equivalent) each academic year. They require at least two seminar credits for PhD degree. The dissertation proposal or defense seminar cannot be used to meet this requirement.
- **Two-page proposal.** Students need to discuss with their major advisors about their research projects and write a two-page proposal. The proposal must be submitted to the graduate chair within the first semester. The proposal should have the following sections: (i) Introduction (background and justification), objectives, and approach. If the scope and objectives of the project are changed or modified later, the temporary committee should be informed and a copy of the revised proposal should be submitted to the graduate chair.
- **Qualifying exam:** PhD students have to take a qualifying exam within the first, second, or third semester. As a part of this exam, students are asked to write a manuscript from the results obtained within the first one or two semesters.
- **Permanent committee:** After completing the qualifying exam, a PhD student can form a permanent committee in consultation with his supervisor and the graduate chair.
- **CTAHr Symposium:** Students are encouraged to make a poster presentation in the CTAHR symposium in the first year. They must make a presentation in the second year and should continue to make presentations in subsequent years until graduation.
- **Other presentations:** Students are encouraged to make oral and poster presentations in other national and international conferences. A number of travel scholarships are available from the Graduate Student Organizations. Often the supervisors provide funds for student travel. Students can also make presentations in a number of research symposia organized at UH Mānoa. These include Tester Symposium, Microbiology Symposium, and BioMed Symposium.

- **The first manuscript:** Students should try to complete the manuscript that was started as a part of the qualifying exam and get it published as soon as possible.
- **Committee meetings:** Students should meet at least once a year with the committee.
- **Proposal seminar:** Frequent discussions are encouraged between the student and the major advisor about the progress and direction of research. When a student and the major advisor both agree that the project is going well and there are some good data, the student may be allowed to write a full proposal and then present a proposal seminar. All graduate faculty and students are invited to the proposal seminars. A proposal seminar must not be delayed beyond three years. If it is delayed beyond three years, the graduate chair will discuss with the committee and consider transferring the student to the MS program.
- **Revision of dissertation proposal.** Sometimes, a project may not go as expected and run into unexpected problems. Under such a situation, the project may have to take a new direction and some of the objectives may have to be modified. The student should invite a committee meeting and present a revised proposal.
- **Comprehensive exam:** It is an oral exam given by the committee and the graduate chair. The graduate chair or a representative appointed by him serves as the moderator for the exam. The committee will ensure that the student has learnt molecular biosciences or bioengineering and mastered the subject well. The comprehensive exam must not be delayed beyond three years. If it is delayed beyond three years, the graduate chair will discuss with the committee and consider transferring the student to MS program.
- **Review of literature:** The students are encouraged to conduct an extensive literature review related to his or her research subject. He or she should discuss with his or her supervisor about the main focus of the “review of literature” chapter of his or her dissertation. This must be completed and forwarded to the committee within the first three years.
- **Publications:** Publications are essential requirements of a PhD degree in MBBE. Students are encouraged to publish several papers in refereed journals. There must be at least one publication as the first author in a standard refereed journal. Only under an exceptional situation, where research subject is very problematic, and the supervisor assures and convinces the committee and the graduate chair that a publication is forthcoming, a student may be considered for graduation without a publication on the day of defense.
- **Submission of dissertation to the committee:** Students are encouraged to write and submit the ‘Review of Literature’ chapter to the committee well in advance, preferably one year before submitting the complete dissertation. They can also write the chapters ‘Introduction’ and ‘Materials and Method’ in advance. All chapters of the dissertation must be first submitted to and corrected by the major advisor before submitting to the rest of the committee. The committee members may refuse to read the chapters if these were not previously read, corrected, and approved by the major advisor.
- **Final dissertation defense:** The final dissertation defense seminar is perhaps the most important event for PhD. Therefore, a student must prepare well for this presentation. A student...
must get approval of the major advisor and the committee for presenting a defense seminar. Graduate Education must be notified in advance by the student through the graduate chair about the date, time, and place of dissertation defense. Graduate faculty and students must be invited to the defense seminar.

List of Approved Courses for MBBE Graduate Students

The following 400-level courses are recommended:
- MBBE 401, 402, 405, 408, 412, 483,
- BE 410, 420, 431, 460,
- BIOL 407

The 600-level courses can be selected from the following list of courses. Students can select other courses after obtaining approval from the committee and the graduate chair.
- MBBE 601, 620, 625, 650, 651, 683, 687,
- BE 606, 622, 625, 634, 638,
- CMB 621, 622,
- MICR 625, 632, 671,
- PEPS 630, 646, 681,
- TPSS 604, 614, 640

Financial Assistance

Most students in the MBBE program are currently supported through teaching assistantships, research assistantships, or fellowships. In addition, tuition is waived for all assistantships and most fellowships. It is recommended that students interested in research assistantships contact faculty working in their area of interest regarding availability. Additional fellowship support is available from the East-West Center, which offers scholarships to Asian, Pacific, and American students for affiliation in one of their programs.

Contact Information

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Molecular Biosciences and Biotechnology Program

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Email: acadaff@ctahr.hawaii.edu
Web: www.ctahr.hawaii.edu/site/programmbb.aspx

Participating Faculty

H. Ako, PhD (Coordinator)—biochemistry, aquaculture
A. M. Alvarez, PhD—bacterial diseases
J. P. Bingham, PhD—peptide biochemistry
D. Borthakur, PhD—molecular genetics of bacteria and their interactions with plants
D. A. Christopher, PhD—plant molecular biology, regulation of gene expression
J. S. Hu, PhD—transgenic disease resistance
D. Jenkins, PhD—biosensors
E. S. Ken, PhD—bioremediation, bioenergy
C. M. Kinoshita, PhD—bioremediation
P. S. Leung, PhD—biotechnology economics
Q. Li, PhD—environmental biochemistry
R. M. Manshardt, PhD—tropical fruit breeding and genetics
P. Nerurkar, PhD—metabolic disorders, signal transduction, alternative medicine
G. Presting, PhD—plant genomics, bioinformatics
H. Spafford, PhD—insect biology and conservation
W. W. Su, PhD—cell culture, biochemical engineering
A. Wieczorek, PhD—molecular systematics, public education on biotechnology
J. Yang, PhD—animal molecular biology and biotechnology
J. Zhu, PhD—plant and biotechnology transformation biotechnology

Degrees Offered: BS in molecular biosciences and biotechnology

Program Goals

- Understand fundamental core science concepts and ability to apply their knowledge in the field of biotechnology;
- Have the knowledge and core sets of skills that span across basic sciences and biotechnology, and mathematics portions of (STEM) education;
- Understand and identify ethical issues and social impacts associated with biotechnology, and practice ethical standards of integrity, honesty, and fairness in scientific practices and professional conduct;
- Communicate orally and in writing in a clear, well-organized manner that effectively informs and clarifies scientific principles and lab techniques to others;
- Able to solve problems using hypothesis development and experimental methods on biological systems; and
- Well prepared for employment in the critically important and dynamic biotechnology industry.

The Academic Program

Biotechnology is dramatically influencing the agricultural, environmental, and pharmaceutical sciences. Molecular Biosciences and Biotechnology (MBB) is an interdisciplinary Bachelor of Science degree program designed to educate students in the

* Graduate Faculty
exciting and growing field of biotechnology, which promises to be a predominant science of the 21st century. MBB graduates will be qualified for employment in agricultural, pharmaceutical, environmental clean-up, forensics, and biotechnology industries; to work in government agencies, environmental groups, and consulting forms; to teach secondary education, or to embark on graduate studies to prepare for advanced research and teaching positions.

The program provides a thorough foundation in molecular biology, biochemistry, genetics, biotechnology, and the life sciences. It serves as excellent and rigorous training for graduate and professional school.

Students tailor their studies to meet their interests by choosing electives, senior research projects, and a laboratory in the following subjects: environmental and microbial biotechnology, plant biotechnology, insect and pathogen biotechnology, and aquaculture and bioreactor biotechnology. Students participate in hands-on laboratory work culminating in research and a senior thesis. Graduates are competent for employment using modern methods such as molecular diagnostics, forensics, tissue culture, genetic engineering, microbial detection, bioremediation, algal bioenergy, marine biotechnology, proteomic, bioinformatic, and genomic analyses. They will have the skills for employment in the burgeoning biotechnology industry and for entering graduate or professional school.

**Undergraduate Study**

**BS in Molecular Biosciences and Biotechnology**

**Requirements**

Students must fulfill the General Education Requirements of UH Mānoa and the college.

Among the courses they must include in these requirements are:

- PHYS 100/100L or 151/151L; 152/152L
- CHEM 161/161L; 162/162L; 272/272L
- BIOL 171/171L; 172/172L; 275/275L
- MATH 215 or 241
- NREM 220
- NREM 310

In addition, students must complete the following major core requirements:

- MBBE/BIOL 304
- ANSC 446 or PEPS/TPSS 371 or BIOL 375
- MBBE/BIOL 401
- MBBE 402
- MBBE/BIO 408
- MBBE 483
- MBBE 499

**Electives**

Students are required to take 18 credits of electives in the various sciences related to their interests in the environment, animals, microbiology, plants, the health sciences, crop protection, or aquaculture. The following are the approved list of electives:

- BE 150 Introduction to Biological Engineering
- BE 373 Transport Phenomena
- BE 410 Biomass Conversion to Biofuels and Bioenergy
- BE 420 Sensors and Instrumentation for Biological Systems
- BE 431 Environmental Biotechnology
- BE 440 Bioremediation Principles and Practices
- BIOL 407 Molecular Cell Biology I
- BIOL 408 Molecular Cell Biology II
- BOT 101/101L General Botany
- BOT 470/470L Plant Physiology
- CHEM 273/273L Advanced Organic Chemistry
- MICR 351/351L Biology of Microbes
- MICR 461 Immunology
- MICR 475 Bacterial Genetics
- MICR 485/485L Microbes in the Environment
- MBBE 412 Environmental Biochemistry
- PEPS 363 General Entomology
- PEPS 405 Plant Pathogens and Disease
- PEPS 421 Foundations of Pest Management
- PEPS 422 Biocontrol of Invasive Species
- TPSS 453 Plant Breeding
- TPSS 440 Tissue Culture and Transformation
- ZOOL 320/320L Vertebrate Zoology

**Natural Resources and Environmental Management**

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Fax: (808) 956-6539
Email: nrem@ctahr.hawaii.edu
Web: www.ctahr.hawaii.edu/nrem/

**Faculty**

*C. Chan, PhD (Chair)—agricultural and international development and environmental economics, marketing
R. J. Cole, PhD—restoration ecology/tropical ecology
*L. J. Cox, PhD—community economic development
*S. E. Crow, PhD—soil ecology and biogeochemistry
*C. I. Evensen, PhD—natural resource management, environmental quality

*J. B. Friday, PhD—tropical forestry/agroforestry extension
*P. V. Garrod, PhD—marketing and production economics
*T. W. Idol, PhD—tropical forestry/agroforestry
*F. Inman-Narahari, PhD—tropical tree improvement and conservation genetics

*J. J. K. Leary, PhD—invasive species control
*C. Lepczyk, PhD—ecosystem management, wildlife ecology, landscape ecology

*P. S. Leung, PhD—production, fisheries, and aquaculture economics
*C. M. Litton, PhD—forest ecology and management, biogeochemistry
*T. Miura, PhD—geospatial analysis, remote sensing
S. Y. Nagano, MS—4-H youth program, county extension
*K. L. Oleson, PhD—ecosystem service valuation, environmental ethics, policy analysis

*P. C. Selmants, PhD—forest ecology
*P. C. Trauerntich, PhD—wildfire management extension
*M. D. B. Vaughan, PhD—collaborative resource management and environmental education

*J. F. Yanagida, PhD—production economics, price analysis, international trade
A. Youkhauna, PhD—carbon sequestration and agroforestry

**Cooperating Graduate Faculty**

K. M. Burnett, PhD—invasive species assessment and management (SSRI)

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* Graduate Faculty
J. DeFrank, PhD—herbicide management
A. Ei-Kadi, PhD—groundwater hydrology
T. Giambelluca, PhD—climatology, hydrology
M. Habte, PhD—soil ecology, microbiology (TPSS)
N. V. Hue, PhD—organic cycling (TPSS)
Q. Li, PhD—environmental chemistry (MBBE)
Y. Li—tropical forest ecology and management (UH Hilo)
T. Radovich, PhD—sustainable farming (TPSS)
C. Ray, PhD—ground water hydrology and chemistry (CEE)
H. Valenzuela, PhD—vegetation physiology and management (PEPS)

Affiliate Graduate Faculty
G. Bruland, PhD—soil and water conservation (Principia College)
J. Fox, PhD—social forestry (East-West Center)
A. Friedlander, PhD—biogeography, fisheries (Charles Darwin Foundation)
C. Giardina, PhD—forest ecology (IPIF-USPA-FS)
S. Gray, PhD—human ecology (U of Massachusetts)
S. Hess—wildlife ecology (USGS)
R. Mackenzie—aquatic ecology (USDA Forest Service)
M. Pan—fishery economics (NOAA Fisheries)
S. Pooley, PhD—marine resource economics (NMFS)

Degrees and Certificates Offered: BS, MS, and PhD in natural resources and environmental management.

The Academic Program
The Natural Resources and Environmental Management (NREM) program emphasizes the science and management of natural resources and their interlinks to environmental quality. It provides students with scientific knowledge of the physical, chemical, biological, economic, social, and policy elements of natural resources management and allows them to understand the principles that underpin productive, sustainable natural resource use, and enhanced environmental quality. Graduating students will be able to solve contemporary resource use problems and assist in sound decision making for optimizing land use and managing agriculture and forestry systems, watersheds, coastal ecosystems, and landscapes in an ecologically sound manner. Graduates will also be skilled in addressing resource and environmental policy issues and the needs of diverse stakeholders and communities including policy makers and planners. Scientific objectivity will be emphasized as an important element of environmental planning. Thus, students will be trained in the use of quantitative models and such tools as decision aids for optimizing natural resource management and ecosystem stewardship.

Undergraduate Study
BS in Natural Resources and Environmental Management
The bachelor of science degree in natural resource and environmental management is a science-based interdisciplinary degree emphasizing the management of natural and environmental resources, that is, decision-making and actions to modify the resource base in order to achieve specified goals. The focus is on tropical island ecology and terrestrial and coastal ecosystems, with special consideration given to Hawai‘i’s unique physical and social environment. The program gives students the ability to conceptualize and critically analyze environmental problems, identify management options, implement suitable interventions, and evaluate their effectiveness. Students receive comprehensive training in basic and applied natural and social sciences, management skills and techniques, and real-life problem-solving including community experiences. Students also develop an individual specialization in an upper division study area of their choice. Graduates have challenging and rewarding career opportunities with government agencies, non-profit organizations, and private businesses in resource-based industries and environmental protection. The BS degree also provides solid academic preparation for post-baccalaureate professional training and graduate study in natural resources and related environmental fields.

Advising
Undergraduate majors are required to report for advising prior to registration each semester. An entering student must meet with the undergraduate program chair to determine the student’s interest and preparation for the NREM major. The student is then assigned to an advisor, with whom he or she meets every semester to plan courses and chart progress toward graduation. After a student decides on a track specialization, the advisor assists the student in arranging an internship (NREM 492), selection of elective courses, career advising, and his or her professional development.

Entrance Requirements
Freshmen may be admitted directly into the program when they apply to UH Mānoa. Students transferring from another program in the UH System or other universities must have a minimum 2.5 GPA for transferable credits.

Degree Requirements
The BS degree requires a total of 120 credit hours, with at least 45 credits in upper division (i.e., 300+ level). Regardless of selected specialization, all students must complete a set of basic core courses. Many of these courses also satisfy General Education Core requirements. Required basic courses include:
- CHEM 151/151L or 161/161L
- BIOL 171/171L and 172/172L
- One course from MATH 203, 215, 241, or NREM 203

All students must also complete an applied science program core, which requires the following courses:
- NREM 210
- NREM 220 or ECON 130
- NREM 301/301L, 302, and 310
- NREM 492/492L and 494

Specializations and Their Requirements
Students have a choice between two tracks within which to develop an upper-division specialization. Both tracks require a set of specific courses and selected electives totaling 30 credits. Some electives, however, may require additional prerequisite courses and credits.

Specialization in Resource Management and Conservation
This track focuses on the biological/physical and natural science aspects of resource management. Course requirements include:
- PHYS 151/151L
- CHEM 162/162L
- NREM/TPSS 304
- NREM 477
- 18 upper division credits in a natural resource specialization area, with at least one course that emphasizes analytical lab,
or field research methods (course selection requires advisor approval).

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Specialization in Resource Development and Policy

This track emphasizes the social sciences and business/public management skills. Course requirements include:
- NREM 341 or 351 or 429
- FAMR 352 or NREM 420
- One course from NREM/TPSS/ECON 429, NREM 358 or 477, or GEOG 413
- 12 upper division credits from social science disciplines such as anthropology, economics, geography, political science, or sociology (course selection requires advisor approval)
- 3 upper division credits in social science analytical/field research methods or in advanced communication (COM, COMG, JOUR)
- 9 upper division credits in natural resource area(s) or field study methods

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Options for Meeting UH Mānoa Hawaiian/Second Language Requirement

As part of the graduation requirements for all undergraduate students at UH Mānoa, NREM majors will select one of the following three options for Hawaiian/Second Language study, in consultation with the faculty advisor:

Option 1: Show proficiency in Hawaiian/Second Language at a 202 course level. Native and bilingual speakers of a second language may be granted a waiver for the foreign language requirement by the College of Languages, Linguistics, and Literature.

Option 2: Show proficiency in Hawaiian/Second Language at a 102 course level and take one additional course each in the Social Sciences (3 credits) and in the Natural Sciences (3–4 credits).

Option 3: Take two additional courses each in the Social Sciences (total 6 credits) and in the Natural Sciences, including at least one course with a laboratory (total 7–8 credits). The additional Social and Natural Science courses can be chosen from any 100–200 level UH Mānoa courses in the respective area but cannot be used to meet other UH Mānoa General Education requirements (except focus) or NREM major requirements.

Graduate Study

NREM offers the following graduate degrees: MS (Plans A, B, and C), and PhD degrees in Natural Resources and Environmental Management; a university-wide Graduate Resource Management Certificate; and a university-wide Graduate Resource Management Certificate. NREM graduate programs bring together natural and social scientists to offer an integrative and interdisciplinary program to understand and manage tropical and sub-tropical terrestrial and aquatic ecosystems. Emphasis is placed on island settings and their relevance to managing land and seascapes. The NREM curriculum emphasizes the application of physical, biological, and social sciences to the conservation and sustainable management of natural, environmental, and economic resources. The program also provides a science-based foundation to assess the processes that control the structure and function of terrestrial and aquatic ecosystems, and the human behaviors and policies that impact those processes. Studies in NREM incorporate the various components and scales (spatial and temporal) that determine ecosystem structure and function, and that bear upon the social and economic welfare of residents in diverse communities and environmental settings.

Students are expected to acquire quantitative reasoning, critical thinking, and other advanced skills that enable them to solve contemporary resource use and environmental problems and to assist in sound policy development and implementation. NREM graduates should be skilled in addressing natural resources and environmental policy and management issues of the competing needs of diverse clientele and communities. NREM graduates are expected to serve as professional leaders in natural resources and environmental management and policy, academic teaching and research, and applied research and extension in educational and governmental institutions, international, national, and state technical assistance and policy agencies, agricultural and forestry industries, consulting firms, and private nonprofit and non-governmental organizations.

Natural resources and environmental management issues are attracting considerable national and global attention, as well as growing donor interest, especially in the Asia-Pacific and tropical and subtropical regions. Graduate training, therefore, features collaboration with national and international institutions to foster programs that provide students with opportunities to learn about the ways in which people from other countries and cultures manage their natural resources and interact with their environments. As such, NREM has a diverse mix of domestic and international graduate students.

To underscore its integrative and global nature, the NREM Graduate Program features strong collaboration with other academic departments within and outside of CTAHR, as well as collaborating institutions in and outside of Hawaiʻi such as transitional economies in Asia, eastern Europe, and the Middle East. In addition, cooperating and affiliate graduate faculty in NREM complement and supplement departmental expertise.

Specialization Areas

NREM is an interdisciplinary department that offers integrative graduate curricula necessary for quality decision-making and solution-oriented natural resource and environmental management. As a foundation for graduate training, all NREM students are expected to acquire a common base of knowledge embodied in a set of core courses. Beyond that, students are expected to develop knowledge and skills within a chosen specialization area. This helps to ensure that students have the real-world skills needed to perform specific tasks, analyze resource management and policy issues, carry out original and meaningful research, and effectively perform outreach and educational activities.

Examples of specialization areas include, but are not limited to: aquaculture economics and management; coastal watershed management; contaminant hydrology; contaminant sources and transport in watersheds; ecological and environmental economics; economics of sustainable resource utilization; fishery economics and management; forest economics; forest ecosystem management; integrated resource management; irrigation and water management; land and water use policy assessment; land degradation processes and models; land resource inventory
and interpretation; land, soil, and water conservation reclamation and remediation; landscape ecology; natural resource and environmental non-market valuation; restoration ecology; remote sensing and geospatial analysis; sustainable community economic development; sustainable land and resource management; tropical forestry and agroforestry; water quality; watershed hydrology; and wildlife.

The student’s advisor and thesis/dissertation committee will assist in choosing appropriate coursework and research, or other activities, to develop a specialization area. Students are expected to declare a specialization area by the completion of their first year in the department.

**Admission and Deficiencies**

Regular, probationary, and conditional status is determined based on student’s academic performance at the time of application. If you are admitted as regular status, you may start your formal graduate program immediately. If you are admitted as probationary or conditional status, you have specific criteria that must be fulfilled such as a BS or MS degree, course deficiencies, expected minimum GRE score of 302–308 combined Verbal and Quantitative Reasoning (equivalent to 1,100–1,200 on the prior scale), or other documents. These criteria are specified in your letter of acceptance, and should be discussed immediately with your advisor upon matriculation. It is expected that students will move from probationary and/or conditional status to regular status by the end of their first year by completing Form I. Applicants for the MS degree are required to have a BS or equivalent degree and applicants for the PhD degree are required to have an MS or equivalent degree (but see below for admission to the PhD degree without a BS degree).

The minimum required TOEFL score (for foreign applicants only) is: (a) MS student: 550, 213, or 80 for paper-based, computer-based, or internet-based examinations, respectively; and (b) PhD student: 600, 250, or 100 for paper-based, computer-based, or internet-based examinations, respectively. The minimum required IELTS score is: (a) MS student: 6.0 and (b) PhD student: 7.0. The TOEFL/IELTS requirement applies to all foreign students, except those who are native speakers of English or have received a bachelor’s degree or an advanced degree from an accredited/recognized college within the last five years in the U.S., U.K., Ireland, Canada, New Zealand, Singapore, or Australia. Students with low TOEFL/IELTS scores are required to enroll in remedial ELI (English Language Institute, www.hawaii.edu/eli/index.html) courses.

NREM requires prior completed coursework (with a grade of C or higher) that is equivalent to or higher than NREM 203, 220 (or ECON 130), 310, CHEM 151, and BIOL 171. Students who do not have coursework in one or more of these areas may be accepted into the program, but will be expected to make up course deficiencies within their first 1–2 semesters on campus and complete Form I.

**Students Applying to PhD Program**

(1) Admission to PhD After Finishing NREM MS

An NREM PhD student who also completed his or her MS in NREM and has subsequently been accepted into the NREM PhD program has the option to take directed reading (NREM 699) for half of the required elective credits (12 of the 24) if NREM courses that are applicable to the student’s degree have already been taken as part of the MS degree plan. At least 6 of the non-NREM 699 credits must be for graduate research methods courses. Also, the student is still required to take all 7 credits of NREM PhD core classes. In the case where a student took some/all of these core credits as electives during their MS degree program, an equivalent number of 600-level credits (but not NREM 699) must be taken.

(2) Admission to PhD Without Finishing NREM MS

A currently enrolled NREM MS student can be admitted into NREM’s PhD program prior to completing their MS degree if ALL of the following criteria are met:

- Unanimous approval by the student’s MS committee
- Record of excellent academic achievement including, at a minimum:
  - Maintaining a GPA >3.5 in the MS NREM program
  - The student has the proven ability to undertake independent research, which can be demonstrated by ALL of the following:
    - Authored/co-authored (student as 1st author) ≥ 1 presentation at a national or international professional conference
    - Authored/co-authored (student as 1st author) ≥ 1 peer reviewed journal article
    - Accumulated ≥ 2 years of meaningful research experience at school, jobs etc.

(3) Admission to PhD From BS

A student with a BS degree can be admitted directly into NREM’s PhD program if ALL of the following criteria are met:

- A faculty member agrees to advise the student and commits to at least 3 years of funding
- Record of excellent academic achievement including, at a minimum:
  - Undergraduate GPA >3.5
  - Average verbal, quantitative and written GRE scores >75th percentile
  - The student has the proven ability to undertake independent research, which can be demonstrated by ALL of the following:
    - Authored/co-authored (student as 1st author) a minimum of 1 presentation at a national or international professional conference
    - Authored/co-authored (student as 1st author) a minimum of 1 peer reviewed journal article
    - Accumulated at least 2 years of meaningful research experience at school, jobs, or internships

**Advising**

Admitted students will check in with his or her advisor upon arriving on campus. An advisor has been identified for every student based on the student’s stated interest and consent of the advisor. If you do not know who your advisor is, check with the NREM office staff or the graduate chair immediately. The primary responsibilities of the advisor during your first semester are to verify entrance and background deficiencies, prescribe remedial courses as early as possible in the student’s program, and provide guidance in course selection. All of these items should be completed by the end of the student’s first year. Submit Form I to the graduate chair upon fulfilling all deficiencies. If there are no deficiencies, Form I should be submitted at the beginning of the first semester.
Degree Requirements

A “NREM graduate course” is defined as a NREM course at the 500-level or above. MS Plan A: A maximum of 9 credits at the 400-level may be taken to meet the degree requirement, excluding the “NREM graduate courses” degree requirement. MS Plan B: a maximum of 12 credits at the 400-level may be taken to meet the degree requirement. PhD: A maximum of 9 credits at the 400-level may be taken to meet the “other than NREM graduate courses” degree requirement. For additional course applicability criteria, refer to: manoa.hawaii.edu/graduate/content/course-applicability.

MS in Natural Resource and Environmental Management

NREM offers three options for the MS degrees: Plan A is a thesis-driven research degree, and a student will be accepted into this plan if a faculty sponsor has agreed to advise the student; Plan B is a course driven, professional degree that also requires an integrating capstone experience; and Plan C is only for students with exceptional prior work experience that requires a minimum of two semesters of full-time resident study at UH Mānoa and a final written and oral comprehensive examination.

Once admitted, MS students must select a specialization (Plan A) or concentration (Plan B) area with the approval of their advisor. To meet the integrative, interdisciplinary intent of the NREM program, a set of graduate level courses (the Primary MS Core) will be required of every student, regardless of his or her selected Plan option or specialization/concentration area.

The course requirements for each plan are:

Plan A

In addition to the Primary MS Core, a set of electives and thesis credits are required for a total of 30 credits. Electives provide background in research methods and depth in the student’s area of specialization. The remaining credit requirements will be met with thesis credits (NREM 700) for conducting the research project. Once the thesis topic is finalized, a research proposal must be approved by the committee. An oral defense of the proposal in front of the thesis committee is also required for final approval of the thesis topic. A public thesis defense is also required, and an announcement with thesis abstract, defense date, and location must be sent to the graduate program chair, departmental secretary, and Graduate Education at least 2 weeks in advance.

Primary MS Core (9 credits):

NREM 600 (3); 601 (3); 605 (2); 701 (1)

Electives (15 credits):

Course in graduate research methods (3); NREM graduate courses (500-level and above, 6); Other graduate courses for specialization from within or outside of NREM (6); where all 6 credits can be satisfied by 400-level course credits.

Thesis Option (6 credits):

NREM 700 Thesis (6)

Plan B

Plan B is a course-driven professional degree that requires a total of 36 credits. Students are required to declare a concentration from one of four possible concentration areas (see below). Courses include the Primary MS Core (9 credits), research methods (3 credits), a minimum of 9 elective credits from the chosen concentration area, a minimum of 3 elective credits from each of the other three concentration areas, and a 6 credit capstone experience.

Primary MS Core (9 credits):

Same as Plan A.

Research Methods (3 credits):

Course in graduate research methods (3).

Concentration Areas (total 18 credits):

Plan B students must select a concentration area from the following: Geospatial Analysis and Modeling, Environmental Policy and Economics, Land and Water Resource Management, and Applied Terrestrial Ecology. Students are required to take a minimum of 9 credits from their concentration area and 3 credits from each of the other areas. Of the 18 elective credits required: (i) at least 12 credits must be NREM courses; and (ii) a maximum of 6 credits of upper-division undergraduate course credits (400-level) are allowed. The list is not comprehensive, and substitutions will be considered via a written petition from the faculty advisor to the graduate committee.

Geospatial Analysis & Modeling

NREM 477, 664, 677, GEOG 470, 472, PLAN 473, 673, GEOG/TPSS 680.

Environmental Policy and Economics

NREM 420, 611, 627, 637, 658, 671, 691, NREM/ ECON/TPSS 429, GEOG 413, 621, 622, GEOG/PLAN 637, PLAN 620, 625, 628, 640, 671.

Land & Water Resource Management


Applied Terrestrial Ecology

NREM 450, 480, 680, 682, 685, 691, NREM/BOT/ZOOL 690, TPSS 481, 604, BOT 444, 456, 651, 661, ZOOL 439.

Capstone Experience (6 credits):

A capstone experience is required for all Plan B students. The capstone experience consists of: (i) NREM 695 (1 cr), to be taken when the student is preparing their proposal; and (ii) NREM 696 (3 cr) and NREM 699 (2 cr; register with faculty advisor), to be taken when the student has completed their capstone experience and is writing up their final document. All capstone experiences require approval from the Plan B Capstone Panel, which consists of the faculty advisor, the NREM 695 course instructor, and an at-large Panel member.

The Capstone Experience requirement may be fulfilled in a number of ways, based on each individual student’s interests. In as much, it will vary from student to student, but typical capstone experiences will involve: (i) an internship/coop/special field experience; (ii) an investigation of a special topic; and/or (iii) development of a project, directed readings/study, or a research project. Each student is expected to take the primary role in identifying and organizing their capstone experience. In meeting this requirement, it will be important for students to demonstrate that they are getting an “integrative” experience in natural resources and environmental management. Each student will be required to give a public proposal and defense presentation, and provide a written proposal and final document on their capstone experience, both of which will be evaluated by the Plan B Capstone Panel.
Plan C
Plan C is for students with exceptional prior work experience. Requirements include residence for two semesters of full-time study, a minimum of 18 graduate credit hours, and a final examination (written and oral). This option is only available to students who are mid-career professionals, having at least 5 years of relevant work experience in natural resources and environmental management.

Primary MS Core (9 credits):
Same as Plan A.

Electives (9 credits):
NREM graduate courses (with no more than 3 credits of NREM 699)

PhD in Natural Resource and Environmental Management
The PhD degree in NREM is awarded only to students with outstanding scholarly achievement. Applicants for the PhD program with academic records that do not match NREM core requirements will be expected to incorporate these into their PhD program. To meet the integrative, multi-disciplinary intent of this program, a set of graduate level courses (Primary PhD Core) will be required of every student regardless of his or her selected specialization area. In addition, a set of electives will also be required. These electives are meant to provide background in research methods and depth in the student’s specialization area. The remaining degree requirements will be met by dissertation credits (NREM 800). All PhD students must pass a written and oral comprehensive examination (described below) before being advanced to candidacy. The student’s dissertation committee is responsible for designing and administering the comprehensive examination.

Primary PhD Core (7 credits)
- NREM 611 (3)
- NREM 612 (3)
- NREM 701 (1)

Electives (24 credits)
- Graduate research methods (500-level or above, 6)
- NREM graduate courses (500-level or above, 9)
- Other graduate courses for specialization from within or outside of NREM (9); a maximum of 9 credits of upper-division undergraduate course credits (400-level) allowed from within or outside of NREM

Dissertation (1 credit)
- NREM 800 (1)

Comprehensive Examination
The final outcome of the comprehensive examination is the acceptance of the student to the PhD candidacy in NREM. Based on this examination, the student’s committee will determine if the student: (i) is ready, (ii) needs to take more courses to remediate deficiencies in her or his training, or (iii) that the student is not fit for the NREM PhD program. In the process of administering the examination, the committee will test the rigor of the student’s training as: (i) a scientist in general (that the student can follow the scientific method and procedure to address a research problem and also has the analytical skills to conduct research), (ii) a scientist in NREM (has in-depth knowledge of what makes her or him unique compared to other graduates of UH that might have similar interests; in other words, a NREM student focusing on hydrology should not only be trained to deal with a hydrology problem but also should be able to address the natural resources and environmental management implications of that problem as compared to a hydrology graduate from Civil and Environmental Engineering, Geology and Geophysics, or Geography), and (iii) a scientist in her or his specialty area (for example, a NREM PhD student with a specialty in hydrology should have more in-depth expertise in hydrology than other NREM PhD students working in other specialty areas).

Based on this understanding, the comprehensive examination questions can cover: (i) his or her specialty (i.e., hydrology, forest ecology and management), (ii) general topics related to NREM (i.e., core courses, background knowledge), (iii) knowledge of general research methods (i.e., statistics, analysis methods, etc.), and (iv) the proposed dissertation research.

Plant and Environmental Protection Sciences
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Faculty
*M. G. Wright, PhD (Chair)—integrated pest management, tropical fruits and nuts, insect ecology, biological control
*A. M. Alvarez, PhD—bacterial diseases
*W. B. Borth PhD—plant virology, micoplasmas
*Z. Cheng, PhD—turfrass and landscape pest management
*R. H. Ebesu, MS—extension education (Hawaii Cooperative Extension Service)
*S. A. Ferreira, PhD—crop protection, extension education
*J. K. Grace, PhD—urban entomology, termite and social insect biology and control, insect behavior
*R. T. Hamasaki, MS—fruit and vegetable crops extension education (Hawaii Cooperative Extension Service)
*A. H. Har, PhD—horticultural entomology, post-harvest insect control, regulatory entomology (Komohana Agricultural Research Center, Hilo)
*J. Hu, PhD—virology
*M. Kawate, PhD—pesticide registration
*P. Krushelnick, PhD—entomology, invasion biology
*M. Melzer, PhD—agrosecurity, virology
*R. H. Messing, PhD—insect ecology and biological control (Kauai Agricultural Research Center)
*S. C. Nelson, PhD—insect ecology and biological control (Kauai Agricultural Research Center)
*D. Rubinoff, PhD—pest systems and ecology, invasive species, conservation biology
*K. T. Sewake, MS—extension education (Hawaii Cooperative Extension Service)
*R. Shimabuku, MS—vegetable crops production and disease management extension education (Maui Cooperative Extension Service)
*B. S. Sipes, PhD—nematology, alternative control methods
*H. Spafford, PhD—integrated pest management, biological control
J. S. Sugano, MS—extensions education (Oahu Cooperative Extension Service)

* Graduate Faculty
studies.

Students will be well prepared for professional and graduate work, and environmental resource management. Undergraduate coursework is part of the PEPS academic and research program. Students are introduced to the intriguing plant, human, and pest interactions that are a part of the Crop Protection, biological control, integrated pest management, cultural, traditional, and genetically based methods. Hawai‘i’s location in the global ecosystem. Students receive interdisciplinary exposure to entomology, plant pathology, weed science, and environmental science and can focus on one of these areas in their upper division studies. This holistic program is developed so each student has the opportunity to learn pest management, crop protection, biotechnological approaches, environmental regulations, toxicology, and rural and urban sociology as these relate to their focus areas.

The instructional program is structured to achieve the following student learning outcomes: (1) students will demonstrate growth in the ability to analyze and communicate an environmental issue; (2) students will recognize and be able to explain the biology of at least 10 insect orders; (3) students will recognize and be able to describe biology and management methods for at least five significant plant pathogens in each category: fungi, viruses, bacteria, nematodes; (4) students will be able to describe the biology and damage of at least five invasive insects, pathogens, or plants (weeds), and explain the limitations and implications of control strategies; (5) students will be able to explain and provide examples of economic injury level and threshold based pest management options; (6) students will demonstrate ability to apply skills learned to a real world situation or employment experience and effectively describe the experience; and (7) students will demonstrate the ability to clearly communicate the results of self analysis and critical thinking.

Requirements (120 credit hours)

PEPS offers a flexible and individualized degree program that allows students to select among several different options to fulfill university core requirements. In accord with their own particular interests and in consultation with their advisor, students also choose from a variety of departmental courses and general electives. PEPS 499 (Directed Research) is a unique requirement that provides students with the opportunity to work individually with faculty members throughout their program.

Specific requirements are:

- CHEM 161/161L, 162/162L
- BIOL 171/171L or BOT 101/101L or ZOOL 101/101L
- NREM 310 or FAMR 380/380L
- PEPS 210 or 250
Peps 363/363L, 405, 481 and 495; 2 courses numbered from 200 to 391; 6 credits of 499; and 9 credit hours of courses numbered from 400 to 491.
- 29 credit hours of approved electives based upon students’ academic interests.
- Additional credit hours as necessary to meet UH Mānoa General Education Core and graduation requirements.

Hawaiian/Second Language Requirement: Undergraduate students in Peps, in consultation with their undergraduate advisor, will be asked to select one of the following three options:
- Option 1: Show proficiency in a Hawaiian/Second Language at the 202 level;
- Option 2: Show proficiency in a Hawaiian/Second Language at the 102 level, and take one additional 3-credit semester course in the Social Sciences and one additional 3 or 4-credit semester course in Natural Sciences;
- Option 3: Take two additional 3-credit semester courses in Social Sciences and two additional 3 or 4-credit semester courses in Natural Sciences. One of the courses in the Natural Sciences must include a laboratory.

Prospective majors should consult with the department to design an appropriate curriculum tailored to their interests.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Graduate Study

Entomology
MS and PhD degrees are offered in the entomology program. Courses are offered in biological control of insect and weed pests, insect ecology, insect physiology, insect transmission of plant pathogens, pest management, systematics, urban entomology, and tropical pest management. Thesis and dissertation research can be selected from any of these subject areas.

Students applying for graduate programs in entomology are expected to have acquired a bachelor’s degree with credit hours in entomology and biology, including general biology, general entomology, integrated pest management; one year of chemistry; and an appropriate course in mathematics and/or statistics. Deficiencies in undergraduate preparation can be satisfied during the graduate program. The statement of objectives submitted with your application should describe your goals and interests in entomology. Applicants should also arrange to have three confidential letters of reference sent directly to the graduate program chair.

The MS and PhD degrees in entomology are recognized by the Western Interstate Commission for Higher Education (WICHE) regional graduate programs. Residents of Alaska, Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, Utah, Washington, and Wyoming are eligible, upon admission, to enroll at Hawai‘i-resident tuition rates.

Master’s Degree

The MS degree program is offered under either Plan A (thesis) or Plan B (non-thesis). A total of 30 credit hours are required for each degree option. An advisory committee composed of at least three members of the graduate faculty provides guidance to the student. For a general description of these options, see “Requirements” for each option.

The program provides an education in general knowledge of entomology, including basic principles of insect identification, biology, and control and prepares the student for employment in private industry, government agencies, and research institutions. Expected student learning outcomes are: (1) acquire and demonstrate competency/skills as a biologist; (2) acquire and demonstrate entomological knowledge necessary for professional success; (3) acquire and demonstrate communication and literacy skills; (4) write and defend a thesis of entomological research; and (5) present findings of their research in oral and/or poster formats in scientific form and publish the results of their research in peer-reviewed journals. Students shall develop into competent and knowledgeable biologists. They demonstrate this competency by having a basic understanding of entomology, insect ecology, phylogeny, and pest management.

MS Plan A (Thesis)
- 16 credit hours of course work including seminars
- 2 credit hours of Peps 690
- 12 credit hours of Peps 700
- 2 credit hours of Peps 799
- Final oral defense and submission of acceptable thesis

MS Plan B (Non-thesis)
Students preparing for a career in research or admission to a doctoral program are advised to enroll in MS Plan A (thesis).
- 23 credit hours of course work including seminars
- 2 credit hours of Peps 690
- 1 credit hour of Peps 799 (CR/NC) during the semester in which a proposal for the directed research project is given.
- Final defense of the directed research project and examination on other aspects of entomological training before the advisory committee.

Doctoral Degree

Intended candidates for the PhD program should have earned the MS degree in entomology or equivalent from a recognized institution. Those with a BS or BA may petition for admittance into the PhD program only after enrolling in the MS program.

The goal of the PhD program is to have students possess broad general knowledge in all areas of entomology, in-depth knowledge in at least one area of specialization and develop the capability for original independent research. Employment options for PhD graduates are in teaching, research, and extension at universities and in research, consulting, or management with private industries and government agencies. Expected student learning outcomes are: (1) acquire and demonstrate competency/skills as a biologist; (2) acquire and demonstrate entomological knowledge necessary for professional success; (3) acquire and demonstrate communication and literacy skills; and (4) demonstrate the ability to apply creative and critical thinking in the independent development and conduct of research.

Requirements
- 3 credit hours of Peps 690
- 2 credit hours of Peps 799 (CR/NC)
- 1 credit hour of Peps 800 during semester of graduation
- Additional course work as determined by the doctoral advisory committee
- Oral, or oral and written comprehensive examination administered by the doctoral committee.
Tropical Plant Pathology

Plant pathology is the study of plant diseases, their causes, and the interactions with the environment. The primary thrust in the program focuses on agricultural crops of economic importance; however, opportunities exist for discovery research in natural ecosystems and the laboratory. The field consists of several sub-disciplines including phytomycology, plant virology, bacteriology, nematology, epidemiology, crop protection, and molecular biology of host-pathogen interactions.

Tropical plant pathology has three student learning outcomes. Students in the program will communicate effectively; write and defend a thesis of original phytopathological research; present findings of their research in oral and/or poster formats in scientific forums; publish the results of their research in peer-reviewed journals; and assist others in learning plant pathology. Students are competent and knowledgeable biologists. They demonstrate this competency by having a basic understanding of molecular biology and genetics; with a general knowledge of the four major pathogen groups, by possessing understanding of plant disease epidemiology; having strong knowledge of their specialized field of study; and conducting research in plant pathology. Students will propose and formulate research objectives to address relevant plant pathological questions; and will conduct research using appropriate design and methods.

Students should have their undergraduate preparation in botany, horticulture, agronomy, microbiology, or plant and environmental protection sciences. Plant pathology has its foundation in biology and agriculture and offers wide opportunities in both basic and applied areas of biology, plant sciences, and agriculture. The tropical plant pathology program at UH Mānoa offers students a unique opportunity to gain knowledge of plant diseases on a vast diversity of tropical crops and native plants as well as the impacts of plant protection practices on the environment.

Please see the Graduate Education website for general graduate admissions requirements and procedures. Applications for admission must include GRE scores for verbal and quantitative aptitude. Candidates may need to demonstrate evidence of adequate preparation in other subject areas as well. Deficiencies may be corrected during the graduate program. In addition, applicants must: (1) submit a Statement of Objectives describing their goals and interests in plant pathology directly to the graduate program chair, and (2) arrange to have three confidential letters of reference sent directly to the graduate program chair.

Master’s Degree

The MS degree program is offered under either Plan A (thesis) or Plan B (non-thesis). A total of 30 credit hours are required for each degree option. An advisory committee composed of at least three members of the graduate faculty provides guidance to the student. For a general description of these options, see “Requirements” for each option.

The MS degree in tropical plant pathology provides a basic education and understanding of the pathogen groupings. Employment opportunities exist in industry, government agencies, research institutions, consulting, and farm management.

**MS Plan A (Thesis)**

- Research: 12 credits in PEPS 700 and submission of acceptable thesis.
- Courses: 16 credits in courses approved by the candidate’s committee, including 10 credits in courses numbered 600-698, excluding 660 and 699, including at least 6 credits selected from 616, 630, 646.
- Seminars: Minimum of 2 credits in 660, which is required each semester except when enrolled in 799; 2 credits in 799 (CR/NC). CR/NC credits are not counted towards degree credit requirements.

**MS Plan B (Non-thesis)**

- Research: 6–9 credits in PEPS 699, preferably taken in 2-3 different laboratories.
- Courses: 19–22 credits in courses approved by the candidate’s committee, including 16 credits in courses numbered 600-698, excluding 660 and 699, including at least 6 credits selected from 616, 630, 646.
- Seminars: Minimum of 2 credits in 660, which is required each semester except when enrolled in 799; 1 credit in 799 (CR/NC). CR/NC credits are not counted towards degree credit requirements.

**Doctoral Degree**

Intended candidates for the PhD program should have earned the MS degree in plant pathology or equivalent from a recognized institution. Those with a BS or BA may petition for admittance into the PhD program only after enrolling in the MS program.

Employment options for PhD graduates are in teaching, research, and extension at universities and in research, consulting or management with private industries and government agencies.

**Requirements**

- No minimum course requirement. A candidate’s committee develops a course plan together with the student.
- 1 credit hour of PEPS 660 each semester, except when enrolled in 799.
- 2 credit hours of 799 (CR/NC).
- Comprehensive and final defense examinations.
- 1 credit hour of 800 during semester of graduation.
- Submission of acceptable dissertation.
Tropical Plant and Soil Sciences

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Faculty

* R. S. Yost, PhD (Chair)—soil-plant relations, soil management, geospatial analysis
*A. M. Wieczorek, PhD (Graduate Chair)—molecular ecology, population genetics, biotechnology
*T. D. Amore, PhD—floriculture breeding
*H. C. Bittenbender, PhD—coffee, kava and cacao physiology and management
*J. L. Brewbaker, PhD—plant breeding, biochemical genetics
*K. T. Cheah, PhD—tissue culture, ornamental horticulture, business management
*R. A. Cireley, PhD—floriculture, flowering physiology, plant propagation (Emeritus)
*J. Deenik, PhD—soil fertility, soil management (Emeritus)
*J. DeFrank, PhD—weed science
*M. Habte, PhD—soil microbiology-biochemistry
*N. V. Hue, PhD—soil chemistry
*A. Kaufman, MLA, PhD—landscape systems, design and management, environmental psychology
*K. D. Kobayashi, PhD—floriculture and fruit physiology, computer modeling
B. A. Kratky, PhD—vegetable physiology and management (Emeritus)
*K. L. Leonhardt, PhD—ornamentals
*R. M. Manshardt, PhD—tropical fruit breeding and genetics
*S. C. Miyasaka, PhD—alternative crops, plant nutrition
M. A. Nagao, PhD—development physiology, growth regulation (Emeritus)
*R. Ogoshi, PhD—biofuels
*R. E. Paull, PhD—plant growth & development, postharvest handling
*T. Radovich PhD—vegetables, sustainable farming
*A. A Saulo, PhD—food technology extension, food safety and quality
*B. Turano, PhD—biofuels

Cooperating Graduate Faculty

D. Borthakur, PhD—plant-microbe interactions, plant biotechnology
C. I. Evensen, PhD—water quality extension, environmental education
A. El-Kadi, PhD—hydrology
J. Leary, PhD—invasive weed management
W. S. Sakai, PhD—ultrastructure, physiological plant anatomy
R. Sutherland, PhD—geomorphology, soil erosion, water quality
M. J. Tanabe, PhD—in vitro propagation, turf management, plant propagation
M. Wright, PhD—integrated pest management, tropical fruits and nuts, insect ecology, biological control

Affiliate Graduate Faculty

M. Austin, PhD—crop breeding, hybrid seed production
M. M. M. Fitch, PhD—tissue culture, genetic engineering
M. C. Jackson, PhD—biochemistry, economics
T. Matsumoto, PhD—horticulture
J. J. McHugh, PhD—vegetable management, integrated pest management
P. Moore, PhD—plant development, sugar metabolism

C. N. Nagai, PhD—sugar cane genetics and tissue culture
D. Ragone, PhD—ethnobotany, conservation
C. Stiles, PhD—soil science
F. Zee, PhD—plant breeding, genetics

Degrees Offered: BS, MS, and PhD in tropical plant and soil sciences, minor in plant production and management, agribusiness certificate

Program Goals

Upon graduation, students will be able to:

- Integrate discipline- and thematic-specific knowledge of basic and applied plant and soil sciences for its analysis, evaluation and application in the improvement, management, and production of managed and natural ecosystems.
- Demonstrate an awareness of practices that minimize damage to the environment and ensure a safe food supply.
- Perform competitively in the diverse professions available to them and to take advantage of the opportunities afforded by changing situations.

The Academic Program

The Tropical Plant and Soil Sciences (TPSS) program at UH Mānoa is unique. Students have an opportunity to take courses in tropical flower, fruit, and vegetable crop production, turf and landscape management, plant physiology, breeding and genetics, and soil science. They learn about the full spectrum of subjects and activities required to understand and responsibly manage land, water, crops, and their environments for the benefit of humankind. In addition, they learn about the adaptation and application of new technologies, such as molecular biotechnology, computer-based systems, and the internet, to enhance plant production systems, assure a safe food supply, and protect the environment.

Our students come from many backgrounds including those with little practical environmental or agricultural experience. They have in common a keen interest in applying science for the purpose of finding practical solutions to problems. Mature students are especially welcome. A host of career prospects await our students. The comprehensive undergraduate program affords students the opportunity to study molecules to whole plants to managed agro-ecosystems. Students majoring in TPSS prepare for careers including plant production and management, plant breeding and genetics, services, marketing, extension, research, and teaching. UH Mānoa students trained in tropical plant and soil sciences have embarked on successful careers in international organizations and governmental agencies, in ecological and environmental protection, in agricultural extension as individual entrepreneurs and teachers at all levels, in farming, in golf course/sports field management, park administration, landscape contracting, and as middle and upper management in corporate agriculture. They work in increasing the food supply, improving food quality, and assuring food safety while protecting the environment and improving the quality of life. Undergraduates are encouraged to obtain practical experience, which involves research under the direction of a faculty member and work in a commercial industry via our internship program. Students have found satisfaction in applying their course work and research studies to challenging problems in business, environmental protection, land-use, and agricultural crop production.
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Students are advised by the department’s undergraduate advisor: Dr. Ken Leonhardt. Undergraduate options are detailed in the following section. Each student may identify a faculty member to act as a mentor in the student’s area of interest and specialization. All students in TPSS must receive approval of their program of courses from their advisors prior to registration each semester.

Graduate students are advised initially by an advisor or by the department’s graduate program chairman.

Undergraduate Study
The program offers a BS degree in tropical plant and soil sciences with specializations in: (1) plant physiology and genetics, (2) plant production and management, (3) environmental soil science, and (4) landscape horticulture. A student is required to complete 128 credits to graduate with a BS in TPSS.

Requirements
Students must complete the General Education Requirements (Core) of UH Mānoa. An updated list of the courses recommended to satisfy the UH Mānoa General Education Requirement is available from the undergraduate advisor. The UH’s Hawaiian/Second Language graduation requirement can be met by language and certain natural science courses.

The College has a core consisting of the following courses:
- NREM 310 or FAMR 380/380L
- TPSS 492

Option in Plant Physiology and Genetics
The option crosses the traditional boundaries that have separated genetics, plant physiology, molecular biology, and traditional crop production areas. The option links laboratory approaches and plant production systems through the application of plant biotechnology to solve multi-disciplinary problems. Students can select courses that allow concentration on genetic engineering to address real-world problems or to whole plant physiology and plant breeding.

Students selecting this option must take MATH 140 or NREM 203, BOT 101/101L, and CHEM 161/161L and 162/162L to fulfill the Natural Science requirement of the UH Mānoa core.

Major Courses (Option in Plant Physiology and Genetics)
Take the following 2 courses:
- TPSS 200
- TPSS 351

Take a minimum of 12 credits from the following courses:
- TPSS 371
- TPSS 440
- TPSS 453
- TPSS 470
- BIOL 340
- MBBE 304
- MBBE 401

Additional supporting courses are available on the Bachelor Degree Program Sheet. For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Electives (variable number of elective credits)
While students may choose from the array of courses offered at UH Mānoa, an advising list of courses will be available to assist students in selecting courses that prepare students for a career in plant sciences and genetics.

The advising list includes courses in botany, chemistry, biology, physics, geography, business, history, and philosophy. Undergraduate advisors will assist students considering enrollment in graduate school in the selection of appropriate courses.

Option in Plant Production and Management
This option prepares students to produce, manage, and market plants grown as crops or in landscapes. The aim is to enable graduates to perform competitively in their chosen profession and to have a sufficiently broad educational background to take advantage of the opportunities afforded by changing situations.

Students selecting this option need to take MATH 140 or NREM 203, BOT 101/101L, and CHEM 161/161L and 162/162L to fulfill the Natural Science requirement of the UH Mānoa core.

Major Courses (Option in Plant Production and Management)
Take all 10 of these courses
- TPSS 200
- TPSS 300
- TPSS/NREM 304
- TPSS 351
- TPSS 364
- TPSS 420
- TPSS/PEPS 481
- PEPS 363
- PEPS 363L
- PEPS 405

The student must take 4 courses from a list of over 30 choices.

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Elective Courses (variable number of elective credits and other courses approved by the undergraduate advisor)
While students may choose from the array of courses offered at UH Mānoa, an advising list of courses will be available to assist students in selecting courses that prepare students for a career in horticultural crop production and management.

The advising list includes courses in botany, chemistry, biology, physics, geography, business, and courses in other departments; PEPS, MBBE, NREM, and HWST. Undergraduate advisors will assist students considering enrollment in graduate school in the selection of appropriate courses.

Option in Environmental Soil Science
The environmental soil science option will prepare students to effectively manage soil for the production of agricultural commodities and preserve this important natural resource for the benefit of man and the protection of the environment.

Students selecting this option need to take BOT 101/101L or BIOL 172, CHEM 161/161L and 162/162L (or their
Major Requirements (Option in Landscape Horticulture)
The following courses need to be taken for this major:
- TPSS 200
- TPSS 300
- TPSS/NREM 304
- TPSS 351
- TPSS 435
- TPSS 450
- NREM 301

Electives
The student must take 12 credits from following electives for this option:
- TPSS 460
- TPSS 463
- TPSS 499
- GEOG 101/101L
- ICS 101/101L
- MET/ATMO 101
- NREM 461
- MICR 485

For information on a Bachelor Degree Program Sheet, go to www.manoa.hawaii.edu/ovcaa/programsheets/.

Option in Landscape Horticulture
The Department of Tropical Plant and Soil Science’s Landscape Horticulture Option prepares students for exciting and diverse careers in the landscape industry. UH Mānoa is centered within the Pacific rim, and is the only U.S. landscape program for sub-tropical and tropical environments, making studying at UH Mānoa a unique experience.

The landscape horticulture option will prepare students to effectively design, install, and maintain landscapes that include trees, shrubs, flowers, house plants, and turf grass that are used to enhance the environment. Students of the program learn theoretical foundations, which lead to a practical understanding of how to produce environmentally and economically sustainable landscapes.

The landscape industry in Hawai‘i is a multi-million dollar business incorporating landscape nurseries, landscape architects, landscape contractors, arborists, and landscape maintenance, and interior landscape companies. Hawai‘i has lush resorts, parks, recreation and athletic fields, world-class golf courses, master planned residential communities, and a variety of commercial projects, which offer TPSS students excellent opportunities to choose from upon graduation.

Students selecting this option need to take MATH 140 or NREM 203, BOT 101/101L (or their equivalent) and CHEM 161/161L and CHEM 162/162L (or their equivalent) to fulfill the natural science requirement of the UH Mānoa Core. These are considered prerequisite to some upper division courses in the major.

Major Requirements (Option in Landscape Horticulture)
The following courses need to be taken for this major:
- TPSS 200
- TPSS 304

Electives
The student must take 7 courses from a list of over 30 choices.

Certificate in Agribusiness Management
This certificate fulfills business and management needs for undergraduate students in the technical fields of agriculture and for business/economics students who want to concentrate in agriculture. Faculty from four departments within the college coordinate and manage the program. The certificate is open to undergraduate majors in any CTAHR program, economics and business. NREM 220 or ECON 130 are prerequisites for the program.

The certificate program consists of courses concentrating on the applications of business, management, and economic principles to agribusinesses with particular emphasis on the factors that differentiate agriculture and related products and services from other businesses. The certificate program includes four core agribusiness courses:

Core Courses (12 credits)
- TPSS 322 or BUS 312
- TPSS 341
- TPSS 351
- TPSS 429

Academic Minor in Plant Production and Management
A minimum of 15 credits of upper division level courses must be completed with a grade of C (not C-) or higher for each course. Transfer credits toward the minor will be accepted if an appropriate UH Mānoa course is determined to be equivalent, and if the grade is C (not C-) or higher. Required courses are TPSS 200, 300, and 364. Several optional courses can be selected. See the TPSS academic advisor for details (Dr. Ken Leonhardt, email: leonhard@hawaii.edu).

Graduate Study
Tropical Plant and Soil Sciences
In order to solve the complex problems facing agricultural plant production systems, many disciplines must be integrated successfully. Candidates may specialize in genetics and breeding of tropical fruits, vegetables, or ornamentals; physiology, culture, and management of tropical fruits, vegetables, or ornamentals; morphogenesis; crop and stress physiology; post-harvest physiology; growth regulation; plant biochemical genetics; plant cytogenetics; weed science; computer modeling; or turf and landscape management, cropping systems, plant-soil relationships, soil chemistry, soil physics, soil management, soil and water conservation, soil fertility, and soil microbiology. Courses offered in botany, biochemistry, plant pathology, food science, genetics, microbiology, and zoology, combined with courses offered in TPSS, will provide considerable flexibility in the development of a program suited to a student’s career objectives.

The department offers graduate study leading to MS (Plan A, Plan B, and Plan C) and PhD degrees. The TPSS gradu-
ate program offers a degree in TPSS and an option in TPSS (horticulture). The degrees emphasize the development of problem-solving skills that integrate molecular, biochemical, physiological, chemical, genetic, and ecological approaches to collaborative research in plant and soil sciences.

The TPSS degree aims to provide the student with a thorough hands-on understanding of the principles and techniques in the adaptation and application of biotechnology to tropical crop plant production, and the role of soils in supporting the whole system of crop production systems. The option requires understanding of fundamental biological processes, molecular and organism biology, genetics, plant physiology, chemistry, physics, and microbiology. Soil is studied both for intrinsic properties, as well as its role in supporting crop growth and as an environmental resource.

The horticulture option explores the many facets of tropical food and ornamental crop production and requires the understanding of agricultural systems, plant production, soil fertility, and protection of the environment, as well as supporting disciplines such as crop ecology, plant physiology, and molecular biology.

The MS and PhD in TPSS are recognized Western Interstate Commission for Higher Education (WICHE) regional graduate programs. Residents of Alaska, Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, Utah, Washington, and Wyoming are eligible, upon admission, to enroll at Hawai‘i-resident tuition rates.

Entrance Requirements

For admission to the TPSS graduate programs, applicants must present a bachelor’s degree with a GPA of 3.0 (4.0 equals A scale) or the equivalent in the last four semesters or approximately 60 semester credits of the applicant’s undergraduate record. The GRE is required for all applicants. A minimum CBT TOEFL score of 173 is required of all foreign students. All applicants must submit 2 letters of recommendation at the time of application.

Transfer of Credits

The transfer of credits to meet the requirements of the MS or PhD is not automatic. The student must petition the graduate program chairman, certifying that the transfers make programmatic sense and that the courses to be transferred are equivalent in rigor and scholastic content to graduate-level (600+ level) courses offered at UH Mānoa. The graduate program chairman may consult with the graduate faculty as to the certification. The maximum number of credits that can be transferred is 12.

Only those credits that have not been applied towards the fulfillment of a previous degree may be transferred. An exception may be made if the subject matter area could not be met by course offering at UH Mānoa, provided the courses transferred meet the rigor and programmatic appropriateness criteria described above.

Graduate Committee

Upon entering the graduate program, students will meet with their advisor. If a faculty advisor has not been selected, the graduate chairman or his representative will perform this function. The selection of an advisor must be made before the end of the first semester in residence. The advisor, with the approval of the graduate chairman, shall guide the student on course selection matters, insure progression in the program, and advise the student until the permanent graduate program committee is established.

Students shall meet their permanent graduate program committee at least once each semester to access academic and research progress and to establish goals for the next semester. It is the student’s responsibility to schedule this meeting and to file the Academic Progress Report with the graduate chairman.

Master of Science Degree, Plan A (thesis) and B (without thesis)

The intended study of the MS Plan A program is to further a student’s graduate studies leading to the PhD degree or successful entry to careers as researchers and technicians. Graduates of the MS Plan B program typically enter careers in education, agribusiness, extension service, and other agricultural related occupations.

Requirements

Master of Science Plan A: Students must complete a minimum of 24 credits hours of course work and 6 credit hours of thesis preparation. A final oral examination is also required.

Master of Science Plan B: Students must complete a minimum of 30 credits as follows: at least 6 credits in TPSS 600+; 6 credits in TPSS/CTAHR/Botany 600+ (see graduate chair for list of allowed courses), 6 credits in other 600+; 6 credits of 699; 6 credits in other 400/600 level classes

Proposal defense: Master of Science Plan A students are required to give a thesis proposal seminar, preferably in the second semester.

Seminar: All students must take TPSS 654 (Communications in Science) during their graduate study and register for TPSS 667 (Graduate Seminar) once every academic year in which they are registered as full-time student or equivalent. An exception can be made during the final semester, in which the dissertation defense or Plan B project report is given in place of TPSS 667.

Lecture Requirement: All MS students are required to give one lecture in a TPSS course during their program. The student will be evaluated by the faculty teaching the course, and this evaluation will be added to the student’s file.

Master of Science-Thesis Plan A: See graduate chair on thesis preparation. Upon development of a thesis proposal in conjunction with your advisor and the selection of graduate committee, the student will advanced to candidacy. The thesis topic must be submitted and approved by your graduate committee prior to mid-term of the semester after you have been advanced to candidacy. You may register for TPSS 700 only after your thesis topic has been approved by your committee.

Final Examination-Master of Science Plan A: A final oral examination on course of study and project is required. The first part of the examination consists of a seminar presentation and defense of the research, which is open to the public and is one hour in length. Following the presentation, student will be examined in detailed on the conduct and results of the thesis by the committee.

Final Examination-Master of Science Plan B: A final oral examination on the thesis is required. The examination consists of a seminar presentation which is open to the public and is one hour in length. The seminar will be presented on a topic agreed upon by the student and their advisor/committee chair. Topics presented included the research conducted under the advisor’s direction in TPSS 699.
**Master of Science Degree Plan C**

Graduate Education and TPSS in CTAHR allow for a Plan C Masters degree. See the graduate chair for more information.

**Doctor of Philosophy Degree**

PhD graduates are expected to enter careers as researchers and/or educators in institutions of higher learning, both in public and private institutions. The PhD is awarded only for original scholarly achievement. The dissertation, which is a significant original contribution to basic knowledge in the candidate’s field is required. Only students with above average academic records in pre-doctoral programs will be accepted in the program.

**Requirements**

For all PhD students, a minimum of 12 credit hours in courses numbered 400 or above is required for the major, not including seminar, directed research, thesis/dissertation research. Course requirements are established by the student’s Graduate Committee.

**Proposal defense:** PhD students are required to give a thesis proposal seminar within the first year of their program.

**Seminar:** Candidates must register for TPSS 667 (Graduate Seminar) once every academic year in which they are registered as full-time or equivalent. An exception is made in the final semester in which the dissertation defense can be substituted for seminar. All students must take TPSS 654 (Communications in the Sciences) or its equivalent during their first year as a substitute for one semester of TPSS 667.

**Lecture Requirement:** All PhD students are required to give three lectures in TPSS courses during the course of their program. The student will be evaluated by the faculty member teaching the course, and this evaluation will be added to the student’s file.

**Comprehensive Examination:** An oral or oral and written comprehensive examination is conducted by your graduate committee for all PhD candidates. This examination may cover any subject thought pertinent by your committee members. The comprehensive examination may be repeated once at the option of your committee. If the student fails to pass the exam the second time, the student will be dropped from the program.

**Dissertation:** The PhD is awarded only for original scholarly achievement. The dissertation, which is a significant original contribution to basic knowledge in the candidate’s field is required. For further information, see the graduate chair. The dissertation proposal must be submitted and approved by your graduate committee during the semester following completion of the qualifying examination. You may register for TPSS 800 (Dissertation Research) only after approval of your dissertation proposal.

**Final examination:** A final oral examination on student’s dissertation is required. The first part of the examination consists of a seminar presentation and defense of your research, which is open to the public and is one hour in length. Following the open seminar presentation, there will be more thorough examination of the research and results of the dissertation by the members of your committee and any other members of the graduate faculty who wish to attend.
Courses

This listing describes the large range of courses available. Please note that this list of courses changes due to the dynamic nature of academic disciplines.

Each semester, the courses available are listed in the Check Class Availability website at www.sis.hawaii.edu/uhdad/avail. classes?i=MAN. Summer classes are listed in the Summer Session Catalog/MyUH Portal.

The course headings are abbreviated and include a two- to four-letter department code, course number (including alpha suffix, if applicable), title, level, credits, description, repetitability, major restrictions, grade option, prerequisites, co-requisites, frequency, cross-listings, and core designation. For further clarification, please refer to the sample course description.

Sample Course Description

ABCD 123 Introduction to Courses (3) (2 Lec, 1 3-hr Lab) This sample describes an introductory course. Open to nonmajors if space available. Repeatable one time. CR/NC only. Pre: 122, HIST 101 and COMG 188 (or concurrent); or consent. Co-requisite: 123L. (Cross-listed as DCBA 123) DA Course number (ie. 123) reflects course level (see “Course Numbering System” below). An “A” following the number designates a Selected Studies (honors) section. An “L” following the number designates a laboratory course that is companion to a lecture course bearing the same number. All other suffixes (“B–K,” “M–U,” and “W–Z”) mark separate sections of an Alpha course, each having a distinctive content that a student may earn credit toward the degree for each section taken.

Course titles will be entered exactly as they appear on UHM forms, so it is important to use appropriate punctuation and capitalization. Diacritical and other punctuation marks that are not included on a keyboard are not available in the online Catalog. Two or more courses within the same subject should not share the same title. An exception is for honors courses and their non-honors counterparts. The word “online” should not be included in a course title to indicate that the course is offered via the internet.

Roman numerals (I, II) indicate the level of a course in a sequence, e.g., Calculus II is a more advanced course following an introductory-level course.

Credit hours (ie. (3)) are shown in parentheses following the course title. Variable credit courses are designated “(V).” Some classes break down the time spent in lecture and laboratory. (e.g., 2 Lec, 1 3-hr Lab)

Description includes class size/format (e.g., lecture, discussion, seminar, lab, workshop, studio) and major subjects covered. Other features may include learning experiences (e.g., term papers, guest lecturers).

Repeatability how many times indicates that a course may be taken again for additional credit toward a degree.

Grade option A-F only indicates that the course is offered only for grade. CR/NC only indicates that the course is offered only for credit (CR) or no credit (NC). Credit is given if a student achieves a passing grade. Satisfactory only indicates whether the course is satisfactory or unsatisfactory. No Grading (NG) is for graduate courses only.

Pre: indicates the prerequisites necessary to register for a course, which may include courses, general education designation, class standing, consent of the instructor or instructor approval (consent), or departmental approval. Some prerequisites may be taken concurrently. When a department has a prerequisite common to a large group of courses, that fact is noted in italics preceding these course listings as a blanket statement.

Co-requisite indicates that the course must be taken in conjunction with another course.

Frequency of course will determine how often the course is offered. (Fall only) means that the course is offered only in the fall, (Spring only) means the course is offered only in the spring. (Alt. years) means that the course is offered only every other year.

Cross-listed courses (Cross-listed as ABCD 123) indicates that the course fulfills a requirement in more than one department and specifies the alternate departmental course listing.

Non-Introductory (NI) courses are 200-level with an explicitly stated course prerequisite, or 300-level or higher.

Upper Division Courses Junior- and senior-level courses, numbered 300–499, which generally have prerequisites.

General Education designation (e.g., DA) indicates that the course meets a General Education Core requirement. See the key in the right column for designations. Courses that meet the Focus requirement are not designated in the Catalog. Focus-designations are in the Registration Guide.

Course Numbering System

Undergraduate Courses (1–499)
1–99 Courses not applicable for credit toward a bachelor’s degree
100–199 Initial or introductory courses
200–299 Second-year courses in a sequence or development in a field of study.
300–499 Third- and fourth-year courses in a sequence of courses or first courses in professional curricula. May be accepted by Graduate Division to fulfill graduate degree requirements (petition may be required). Courses numbered 300 or above are upper division and count toward the 45 upper division credit requirement.

Post-Baccalaureate Courses (500–800)
500 Directed Study (master’s Plan B)
500–599 Courses applicable toward first professional degrees (architecture, law, and medicine) and in-service training programs in education
600–699 Graduate courses
700 Thesis Research (master’s Plan A)
700–799 Advanced graduate courses
800 Dissertation Research

Special Numbers: Courses ending in “-99 are directed research or directed study. Experimental courses ending in “-97 or “-98 and single course offerings are not listed in the Catalog.
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(##) Total number of courses the department offers in this category.

* Departments offering introductory level course(s) in this category.
### General Education Designations

Courses that meet the UH Mānoa General Education Core Requirements are identified with one of the following designations at the end of the course description:

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### Foundations Requirements

- **Written Communication (FW)**
- **Symbolic Reasoning (FS)**
- **Global and Multicultural Perspectives (FG)**
- **Women's Studies (WS)**
- **Zoology (ZOOL)**

### Diversification Requirements

- **Arts (DA)**
- **Humanities (DH)**
- **Literatures (DL)**
- **Social Sciences (DS)**
- **Biological Sciences (DB)**
- **Physical Sciences (DP)**
- **Laboratory (science) (DY)**

### UH Mānoa Graduation Requirements

Hawaiian/Second Language (HSL)

For more information, see the “Mānoa Undergraduate General Education Requirements” section of this Catalog.

### Please Note:

- Consult your college/school advisor for a list of updated General Education courses. Additional courses may have been approved after the publication of this Catalog.
- Some programs specify which courses their students must take to fulfill the Core Requirements or to fulfill lower division college/school requirements. For these programs, students should consult an advisor from their department prior to selecting courses.
**Academy for Creative Media (ACM)**

**College of Arts and Humanities**

A grade of C or better in the prerequisite courses is required for continuance.

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**ACM 310 Cinematic Narrative Production (4)**

Prerequisite emphasis on acting and personality in animated characters. ACM majors only. A-F only. Pre: 215 and 216. B or better in 255, or consent. ADD

**ACM 321 Cinematic Character Production (3)**

Creating the illusion of life through the principles of animation. Application of theory to practical scene work with emphasis on animated characters. ACM majors only. A-F only. Pre: 215 and 216 or B or better in 255 and ART 113, or consent.

**ACM 370 Directing the Actor on Screen (3)**

Detailed analysis of cinematic grammar, placement, movement, focus, and effects of the camera to create the mise-en-scene. Examines theories and projects to apply theory to individual creative work. ACM majors only. A-F only. Pre: 310 or concurrent.

**ACM 380 Genre and Narrative Theory in Creative Media (3)**

Focus on the concept of genre, genre films, genre film criticism and popular genres such as Western, film noir, documentary, and Chinese martial arts. A-F only. Pre: 255 or concurrent.

**ACM 382 Authors in Creative Media (3)**

In-depth study of the author theory and specific application to the roles of the screenwriter, director, and animation team. ACM majors only. A-F only. Pre: 255 or concurrent.

**ACM 384 Study Abroad (3)**

Intensive study of selected topics, genres, filmmakers, or digital media production in the host country in a UH Mānoa-approved study abroad program. Repeated one time. A-F only. Pre: 255 and concurrent.

**ACM 385 Topics in Creative Media (3)**

Topics of interest to faculty and students; taught by regular and visiting faculty. Repeated one time on different topics. ACM majors only. A-F only. Pre: 255 and concurrent.

**ACM 386 Techniques in Creative Media (3)**

Specialized techniques in the creation of digital media: taught by regular and visiting faculty. Repeated one time on different topics. ACM majors only. A-F only. Pre: 255 and concurrent.

**ACM 390 Workshop in Creative Media (V)**

Short-term intensive workshop in focused area of media production. Repeatable one time with instructor approval. ACM majors only. A-F only. Pre: 310 and 350, or concurrent.

**ACM 405 Documentary Production (3)**

Analysis and practical knowledge of the documentary process including, but not limited to, research, organization and story structure, shooting, camera coverage, and editing. ACM majors only. A-F only. Pre: 310 and 350, or concurrent.

**ACM 410 Advanced Cinematic Production (4)**

Production of a major cinematic/digital narrative project. Working in groups, each student takes on creative and technical roles and responsibilities of a principle crew position. Emphasis on artistic form in narrative development; timely execution from pre-production to post-production. Repeatable one time with instructor approval. ACM majors only. A-F only. Pre: 310 and 350, or concurrent.

**ACM 415 Computer Game Production (3)**

Students will work as a team to produce to design and produce a computer game: 2D and 3D elements, animation, story, music, audio, and project software. ACM majors only. A-F only. Pre: 315 or ICS 313, or consent.

**ACM 420 Computer Animation Production II (3)**

Student teams produce a short, animated film. Prior knowledge of 2D and 3D media authoring tools and animation techniques is necessary. ACM majors only. A-F only. Pre: 320 and 350 or concurrent.

**ACM 450 Indigenous Filmmaking (3)**

Theories and studies of indigenous films and creation of a cinematic project based in indigenous cultural and value systems. Students must complete a certification workshop in camera and editing processes to be enrolled in this course. ACM majors only. A-F only. Pre: 310, and 350 or 355; or concurrent.

**ACM 455 Indigenous Filmmaking (3)**

Theories and studies of indigenous films and creation of a cinematic project based in indigenous cultural and value systems. Students must complete a certification workshop in camera and editing processes to be enrolled in this course. ACM majors only. A-F only. Pre: 310, and 350 or 355; or concurrent.

**ACM 480 Oceanic Media and Culture (3)**

Involves close textual analysis of film, TV and multimedia content. The course includes cinematic and television screenings. ACM majors only. A-F only. Pre: 255 or concurrent.

**ACM 482 The American Documentary (3)**

In-depth study of the nature and impact of documentary filmmaking in America, focusing on the interplay between filmmaker, subject, and audience. Will critically examine documentaries for their use of rhetoric, ethics, and narrative voice. ACM majors only. Junior standing or higher. A-F only. Pre: 255.

**ACM 485 Seminar in Creative Media (3)**

Intellectual issues in creative media. Conducted by regular and visiting faculty with extensive student participation and scholarly presentation. Repeatable one time on different topics. ACM majors only. A-F only. Pre: 255 and junior standing, or concurrent.

**ACM 490 Global Media (3)**

Involves close textual analysis and strategic analysis of the globalism phenomenon, with an emphasis on transnational media corporations. ACM majors only. A-F only. Pre: 255 or concurrent. (Fall only)

**ACM 495 Creative Media Internship (3)**

Internship in professional cinematic, television, animation and digital media production company under professional and faculty supervision. Repeatable up to six credits. ACM majors only. A-F only. Pre: 310 or 315 and 360, or concurrent.

**ACM 499 Directed Study (V)**

Independent research or creative project under supervision of ACM faculty member. Only six credits of 499/499 in any combination can be applied to meet requirements for the major. Repeatable up to six credits. ACM majors only. Pre: 310 or 315 and 360, and concurrent.

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**Accounting (ACC)**

**Shidler College of Business**

**ACC 201 Introduction to Financial Accounting (3)**

Introduction to financial accounting and meth-
ods used to record and report financial information to decision makers external to the firm. Use and limitation of financial reports. Pre: sophomore standing.

ACC 202 Introduction to Management Accounting (3) Introduction to managerial accounting and methods for providing financial information to decision makers internal to the firm. Cost accounting, budgeting, standard cost systems, reporting and analyzing performance. Pre: 201 with C- or better.


ACC 395 Accounting Internship (V) On-the-job experience in the accounting community. Term paper and meeting with faculty advisor required. C/NC only. Pre: consent.

ACC 399 Directed Reading and Research (V) Reading and research of a special area in major under direction of faculty member(s). Project must include statements of difficulties, outline of activities planned, results expected, and how they are to be reported and evaluated. Must be approved in advance by the department chair and faculty advisor.

ACC 401 Federal Individual Income Taxation (3) Examines federal income tax concepts, such as gross income, exclusions, deductions, exemptions, and tax credits, especially for sole proprietors. Introduces taxation of property transactions. Development of professional writing skills is integral to this course. Pre: 202 with C- or better.

ACC 407 Taxation of Business Entities (3) A survey of the general concepts, rules, and practices involved in the taxation of sole-proprietorships, corporations, partnerships, and subchapter S corporations. Pre: 401 with C- or better.

ACC 409 Accounting Information Systems (3) Accounting systems control and design in manual and computerized environments. Knowledge and skills of information technology for auditing AIS systems. Emphasis on internal control, use of microcomputers and a computerized accounting system. A-F only. Pre: 323 with C- or better or concurrent) and BUS 311 (with C or better).

ACC 413 Law for the Accountant (3) Intensive study of areas of law of importance to accountants. Particular attention is given to principles of law relating to contracts, sales, commercial paper, secured transactions, property, legal entities, agency, securities, and accountant’s legal liability. Pre: BLAW 200 or consent.

ACC 415 Advanced Financial Accounting (3) Accounting topics relating to consolidation requirements and introduction to the fundamentals of fund accounting, general fund, special revenue fund, debt service fund, enterprise funds, general long-term account group, general fixed assets account group, and accounting entries for encumbrances. Pre: 323 with C- or better.

ACC 416 Special Topics in Accounting (3) Address current issues impacting the accounting profession. Topics vary each semester. Repeatable three times. Pre: 323.

ACC 418 Auditing (3) Auditing concepts including standards, objectives and ethics for external auditors. Emphasis on ethical standards, internal control, evidence, statistical sampling, IT audits and assurance. Development of professional writing skills is an integral part of this course. Pre: 323 and 409, both with C- or better.

ACC 460 Accounting Capstone (4, 1 credit per al- pha) Lectures, discussions, case analysis. Integration of numerous elements of the accounting program. Current accounting issues discussed. Relevant topics for (B): managerial; (C) financial, (D) auditing and accounting information systems; (E) tax and ethics. Repeatable one time, credit earned for one time only. ACC majors only. Pre: ACC 415 or (coreq), no waiver. Co-requisites: C, D, and E for (B); B, D, and E for (C); B, C, and E for (D); B, C, and D for (E).

ACC 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Repeatable unlimited times. Pre: master’s Plan B or C candidate and consent.

ACC 581 Financial Accounting I (5) Accounting process and the application of GAAP to the recognition and measurement of cash, receivables, inventories, property plant and equipment, depreciation and depletion, intangibles, and current liabilities. Pre: 201 (with C- or better) and 202 (with C- or better).

ACC 582 Financial Accounting II (5) Application of GAAP in recognition and measurement of investments, property, plant and equipment, depreciation and depletion, intangibles, current liabilities, and long-term liabilities. A-F only.

ACC 584 Regulation and Accounting (5) Will cover tax accounting topics for individuals, estates, and business entities. Also will cover Government and Not-for-profit topics. A-F only.

ACC 585 Auditing and Attestation (4) Concepts include standards, objectives, and ethics for external auditors. Emphasizes reporting standards, internal control, statistical sampling, EDP audits, and assurance. Also covers information systems and relevant measurement topics. A-F only. Pre: 581.

ACC 610 International Corporate Governance (3) Understanding of complex and critical issues of international corporate governance, financial reporting, and ethical conduct. Includes corporate governance in the U.S., major European markets, and Asia. Emphasis on international and external stakeholders, regulators, and gatekeepers. Graduate students only. A-F only.

ACC 616 Accounting Theory and Development (3) History and theoretical background of accounting standards. Including accounting theories, formulating and testing theories; scientific, pragmatic, And accounting standards; normative and positive theories; the interrelation of theoretical and critical of accounting theories and standards. Pre: 323 or 582 with C- or better, or consent.

ACC 619 Advanced Auditing (3) Focus on auditing processes, standards, and guidance specific to IT risks. Exposure to advanced audit software and its practical application and real world IT audit issues. Pre: 418 or 585 with C- or better, or consent.

ACC 620 Global Accounting (3) Theory and fundamental causes of international variations in accounting practice. Special problems such as international variations create for financial reporting, control, and decision-making within multinational business enterprises. Pre: 325 or 582 with B- or better, or consent.

ACC 625 Accounting and Tax Research (3) In-depth examination of tax and accounting research, IRS, and SEC procedures. Extensive practice in issue identification, reading and analyzing primary authority, and communicating results. Credit not given for both 400 and 625. Pre: 401 or 584 with C- or better, orientation project (coreq).

ACC 631 Tax of Partners/Partnerships (2) Examines advanced topics in federal taxation of partners and partnerships regarding the contribution, operation, and distribution from partnerships and transfers of partnership interests. Pre: 407 with C- or better.

ACC 635 Advanced Public Sector Accounting (3) Provides the tools necessary for understanding the principles of fiscal accountability and reporting in governmental and not-for-profit organizations. Pre: 415 or 582 with C- or better, or consent.

ACC 638 Estate and Gift Taxation and Planning (2) Examines estate and gift tax provisions and basic estate planning techniques to avoid probate. Overviews generation-skipping transfer taxes and income taxes on estates and trusts. Pre: 401 or 584 with C- or better, or consent.

ACC 639 Multijurisdictional Taxation (2) Examines international, state, and local tax issues. Topics include U.S. International taxation of in- and out-bound transactions, sourcing of income and deductions and nexus. Pre: 401 with C- or better.

ACC 660 Analysis and Decision-Making (3) Integrates learning through analysis and communication of comprehensive business problems. Stresses research, critical thinking, and analytical and communication skills applied to contemporary accounting and tax issues. Pre: 625 with C- or better (or concurrent), no waiver.

ACC 690 Current Topics in Accounting (V) Concentration on current issues impacting the accounting profession. Topics vary each semester. Repeatable up to six credits.

ACC 695 Accounting Internship (V) On-the-job experience in the accounting community. Necessary evaluation reports and meetings with faculty advisor required. Pre: consent.

ACC 700 Thesis Research (V) Required for Plan A candidates only; six credit hours required, must be taken during semester degree is being awarded. Repeatable up to six credits. ACC majors only. Satisfactory only. Pre: MAcc student and School of Accountancy Director approval.

ACC 701 Financial Accounting Research (3) Provides an overview of financial accounting research. Specific research studies are examined as to their theoretical basis, design, implications, methodology, relevance, etc. A-F only. Pre: PhD student status in international management or consent.

ACC 702 Managerial Accounting Research (3) Provides an overview of managerial accounting research. Specific research studies are examined as to their theoretical basis, design, implications, methodology, relevance, etc. A-F only. Pre: PhD student status in international management or consent.

ACC 703 Research in Behavioral Accounting (3) Provides an overview of accounting research in behavioral accounting topics. Specific research studies are examined as to their theoretical basis, design, implications, methodology, relevance, etc. A-F only. Pre: PhD student status in international management or consent.

ACC 704 Research in Accounting Information Systems (3) Provides an overview of accounting research in accounting information systems topics. Specific research studies are examined as to their theoretical basis, design, implications, methodology, relevance, etc. A-F only. Pre: PhD student status in international management or consent.

ACC 705 Research in Taxation (3) Provides an overview of accounting research in taxation topics. Specific research studies are examined as to their theoretical basis, design, implications, methodology, relevance, etc. A-F only. Pre: PhD student status in international management or consent.

ACC 799 Directed Reading and Research (V) Reading and research in an area of accounting under the direction of faculty member(s). A-F only. Pre: PhD student status in international management or consent.

Aerospace Studies (AS)

Aerospace Studies (AS) ROTC Programs

The leadership laboratory is required for all courses. Conducted within the framework of the United States Air Force with progression of experiences designed to develop leadership potential. Involve Air Force customs and courtesies, drills, and career progression.

AS 101 Foundations of the United States Air Force (1) Study of the total force structure, strategic
Agricultural and Resource Economics (AREC)

College of Tropical Agriculture and Human Resources, see also Natural Resources and Environmental Management (NREM)

AREC 610 Biosystems Modeling (3) Introduction to system thinking, procedures for developing system models, characteristics of important agricultural, system modes, computer approach to evaluation and optimization of system models. Pre: one of MATH 215, MATH 241, MATH 251A; or consent. (Cross-listed as BE 638)

AREC 626 Econometrics I (3) Review of probability, estimation, small sample and asymptotic properties. Bivariate and multiple regression and matrix algebra formulation. Regression diagnostics. Introduction to heteroskedasticity, autocorrelation, simultaneity, dichotomous variables, advanced topics. Pre: NREM 310 or ECON 321, and MATH 241; or consent. (Cross-listed as ECON 628)

AREC 634 Econometrics II (3) Specification, statistical estimation, inference, and forecasting of economic models. Includes advanced topics for single-equation models, pooled models, qualitative dependent variables, simultaneous systems, distributed lags, and time series. Pre: 626 and ECON 628, or consent. (Cross-listed as ECON 629)

AREC 700 Thesis Research (V) Repeatable unlimited times.

AREC 800 Dissertation Research (V) Repeatable unlimited times.

American Studies (AMST)

College of Arts and Humanities

The minimum required grade for prerequisites is a grade of C (not C-) or better. Sophomore standing or consent is required for all 300-level courses except as noted.

AMST 110 Introduction to American Studies (3) Introduction to different types of college-level writing through analyses of contemporary American culture and to the main themes and approaches used in American studies and the humanities. DH

AMST 150 America and the World (3) Examines America’s role in world history and the influence of world affairs on U.S. culture and society. Focuses on U.S. interdependence with African, European, Native American, Asian, and Polynesian civilizations, from 1492 to present. FGB

AMST 201 American Experience: Institutions and Movements (3) Interdisciplinary course that examines history and changes in American varieties and institutions—political, economic, legal, and social. DH

AMST 202 American Experience: Culture and the Arts (3) Interdisciplinary course that examines diversity and changes in American values and culture—literature, film, visual arts, and architecture. DH

AMST 211 Contemporary American Domestic Issues (3) Interdisciplinary exploration of current American domestic issues; topics such as politics, economics, race, gender, family, life, the justice system, and the environment. DH

AMST 212 Contemporary American Global Issues (3) Interdisciplinary exploration of current global issues as international diplomacy, economic development, national security, demographic change, and environmental protection. DH

AMST 220 Introduction to Indigenous Studies (3) Interdisciplinary survey that examines the histories, politics, popular representations, self-representations, and contemporary issues of the indigenous peoples of the U.S. and its territories, including Native Americans, Alaska Natives, Kanaka Maoli, Chamarro, and Samoans. DH

AMST 301 Hip-Hop and American Culture (3) Survey tracing hip-hop to its roots and the Caribbean musical beginnings to contemporary adaptations and interpretations. Students will analyze various materials and will pay attention to the relationships between hip-hop and contemporary social forms. Pre: sophomore standing or consent. DH

AMST 310 Japanese Americans: History, Culture, Lifestyles (3) Explores the experiences of Japanese Americans in Hawai‘i and the U.S. at large: historical and cultural heritage, biographies, changing family ties, ethnic lifeways, gender relations, local identity, and the future of island living. DH

AMST 313 African Americans: Issues, Culture, History (3) traces the history and culture of African Americans and outlines contemporary issues. Topics include: slavery and racism, community formation and dissolution, cultural expression, African American diversity, civil rights, gender and class relations. DH

AMST 316 U.S. Women’s History (3) History of U.S. women and gender relations. Topics include women’s work in and outside of the home, women’s involvement in social movements, changing norms about gender and sexuality, and shared and divergent experiences among women. (Cross-listed as HIST 361 and WS 311) DH

AMST 317 American Popular Music and Culture (3) Analysis of a variety of American musical genres and histories through focused writing assignments (record and performance reviews, personal narratives, interviews, research proposals, research papers). Pre: second year standing or consent. (Alt. years) DH

AMST 318 Asian America (3) History of selected Asian immigrant groups from the 19th century to the present. Topics include: immigration and labor history, Asian American literature, and cultural productions, community adaptations and identity formation. (Cross-listed as ES 318) DH

AMST 319 America, Hawai‘i and World War II (3) Examines WWII as a watershed in American and Hawai‘i’s history and culture. Topics include: Pearl Harbor, Japanese American internment, sex and racial tensions, Anti-Semitism and the Holocaust, and the dawn of the Atomic Age. DH

AMST 320 American Environments: Survey (3) Survey of social, political, and cultural transformations in diverse, contemporary American environments including: island societies, urban centers, suburbs, Indian reservations, farming communities, and national parks. Special emphasis on contemporary environmental issues in Hawai‘i. DH

AMST 325 Religion and Law in the U.S. (3) Surveys church-state jurisprudence since the 1940s, with special attention to difficulty of defining religion, and applies the religion clauses to current issues. A-F only. Pre: sophomore level or higher standing. Consent. (Once a year) (Cross-listed as POLS 325) DH

AMST 326 American Folklore and Folklife (3) Examination of the history and ethics of folklore studies and the dynamics and social functions of traditional culture in diverse communities through ritual, storytelling, games, gossip, belief, music, and cultural tourism. Junior standing or higher. (Cross-listed as ANTH 326) DH

AMST 334 Digital America: Online Communities and Virtual Worlds (3) Seminar on the impact of the digital revolution and virtual communities on American culture and society, with an emphasis on questions of identity and participatory democracy. Open to nonmajors. Pre: sophomore or higher standing. Consent. DH

AMST 339 Religions in America (3) Examination of American religious traditions, both historical and contemporary, with an emphasis on the principles of religious liberty, American pluralism, and pluralism. Pre: sophomore standing or consent. DH

AMST 340 War and Media (3) Examination of a range of media, including photography, film, print journalism, television, video games, and the internet, as they have shaped popular representations and experiences of war in America from the Civil War through the present. A-F only. (Alt. years) DH

AMST 343 American Thought and Culture (3) Politics, family, philosophy, technology, etc.; their interrelationship with the total society. Pre-Colonial to end of Reconstruction. Pre: 150 or 201 or 202 or 211 or 212 or HIST 151 or HIST 152; or consent. (Cross-listed as HIST 373) DH
AMST 434 American Thought and Culture (3) Continuation of 343: 20th century. Pre: 150 or 201 or 202 or 211 or 212 or HIST 151 or HIST 152; or consent. (Cross-listed as HIST 374) DH

AMST 438 American Design: An Historical Survey (3) Examination of design in American culture over the last century. Readings in industrial, graphic, interior, architectural, landscape, and user interface design used to study issues of gender, race, and class in the U.S. Open to all class standings. A-F only. (Alt. years) DH

AMST 349 Contemporary American Design (3) Investigates design in contemporary American culture. Graphical, industrial, urban, and user-interface design practices are situated within broader social and economic contexts, the history of design practices, production, and consumption studied as reflection of American society today. A-F only. (Alt. years) DH

AMST 350 Culture and Art in America: Survey (3) Popular attitudes toward art, travel, fashions, craft and industrial productions of the era. Past used to explain the present. DH

AMST 352 Screening Asian Americans (3) Survey of Asian and Asian American representations in American film and television from the silent era to the present, with an emphasis on Orientalism and multiculturalism, as well as performance and spectatorship. ACM majors: A-F only. Pre: junior standing or consent. (Cross-listed as ACM 352) DH

AMST 353 Indigenous Lands and Waters (3) Examines indigenous peoples born of and located in Indigenous places. Analyzes how indigenous knowledge of place informs Indigenous cultural, linguistic, intellectual, and political survivance and sovereignty, and resistance. DH

AMST 354 American Travel Writing (3) Survey examines the roles that travel writing plays in American identity- and nation-formation, from early colonial history to the present. A-F only. Pre: 110, 150, 201, 202; or 201 (Alt. years) DH

AMST 360 American Cinema (3) Introductory history of American cinema from the silent to the digital era, with an emphasis on criticism, genre and style, as well as cultural and sociopolitical context. DH

AMST 365 American Empire (3) Examines the interplay between an “American culture of empire,” and the rise of the U.S. as a superpower. Topics: imperialism and political, social movements and international affairs, race, gender and class relations. (Cross-listed as HIST 365) DH

AMST 373 Filipino Americans: History, Culture and Politics (3) An introduction to the study of Filipino Americans in the U.S. and the diaspora. The course pays special attention to labor migration, cultural production and community politics. Pre: sophomore standing. (Cross-listed as ES 373) DS

AMST 381 Junior Seminar (3) Materials and methods for the study of American life and thought. For American studies majors and minors only. DH

AMST 382 Junior Seminar (3) Continuation of 381. For American studies majors and minors only. DH

Junior standing or consent required for all 400-level courses.

AMST 401 Filipino Americans: Research Topics (3) A research seminar on the study of Filipino Americans. Special topics (short fiction, poetry), films, etc. that address issues of representation and how native peoples actively resist colonial ideology. DH

AMST 405 Native Literatures and Cultures (3) Interdisciplinary, comparative course examining native literatures in fiction, poetry, film, etc. that address issues of representation and how native peoples actively resist colonial ideology. DH

AMST 410 Asian American Music Cultures (3) An exploration of how Asian American music making is related to community formation, labor migration, and cultural sensibilities throughout the 20th century. DH

AMST 411 Japanese Americans: Research Topics (3) Research and thematic seminar on Japanese American culture, issues, and history. Pre: junior standing or consent. DH

AMST 413 Regionalism: The South (3) Definition of a Southern identity and its relation to the larger U.S. culture, using literary and visual arts to explore the South and the American South. DH

AMST 418 Hawai‘i’s Multiculturalism (3) A multidisciplinary examination of the dynamics of the Hawaiian Islands’ racial and cultural diversity from the perspectives of historical trends, social processes, and contemporary political, social, and economic issues as they impact intercultural relations. DS

AMST 420 American Ideas of Nature (3) The natural world in American thought from Native Americans to modern ecologists. DH

AMST 423 History of American Architecture (3) History of American architecture in terms of style, techniques, and symbolism, with emphasis on the built environment. Cross-listed as ARCH 473) DH

AMST 425 American Environmental History (3) Survey history of the complex relations between American societies and diverse U.S. ecosystems, from European contact and colonization to the present. (Cross-listed as HIST 480) DH

AMST 431 History of American Workers (3) Conditions of labor in major phases of American development: research, leisure, and community in changing workplaces, environments, and instruments of work. Capitalism, unions, race, gender, law, etc. Emphasis on 20th century. (Cross-listed as HIST 477) DH

AMST 432 Slavery and Freedom (3) Examines the history of slavery, race, and abolition in the Americas from a comparative point of view and traces the legacy of slavery in the post-emancipation societies of the New World. (Cross-listed as HIST 473) DH

AMST 433 Islands, Empires, and the Arts (3) Histories of colonialism, neocolonialism, and cultures of resistance in literature, art, and arts of the Caribbean and American diaspora. Role of arts in political dissent; historical memory; nation building; construction of race, class, gender. Junior standing or higher. A-F only. Spring. DH

AMST 434 Politics in Hawai‘i (3) Discussion of modern politics against the background of recent history and major contemporary issues. DS

AMST 435 History of Crime and Punishment (3) History of American crime and punishment from 18th century to the present. Topics: changing crime patterns, evolving punishment methods, penal reform movements, convict resistance, growth of prison industrial complex, racism, class, and gender. Repeatable one time. Pre: junior standing or consent. DS

AMST 436 Gender, Justice and Law (3) Exploration of landmark U.S. Supreme Court cases related to sex and gender. Topics may include sex discrimination, sexual orientation discrimination, privacy, and reproductive freedom. A-F only. Pre: one of WS 151, WS 175, WS 176, WS 202, WS 360, WS 381, or consent. (Cross-listed as POLS 436 and WS 436) DS

AMST 438 Asian Women (3) History, culture, and contemporary reality of Asian women in Asia and the U.S. Includes critical analysis of American feminist theories and practices. Emphasis on indigenous and national expressions. Pre: junior standing or consent. (Cross-listed as ART 450) DH

AMST 440 Race and Ethnicity in America (3) examines the role of race and ethnicity in American society. Pre: junior standing or consent. (Cross-listed as HIST 476) DH

AMST 442 Radical Traditions (3) Varieties of radicalism that have provided a continuing critique of prevailing attitudes toward home and nation. DH

AMST 445 Racism, American Culture and Film/Media (3) An exploration of the critique of racial ideologies in American film. The course also examines how aggrieved communities develop cultural sensibilities and resist racialized identities through film, video and media work. DH

AMST 450 Victims, Virtue, and Violence (3) Examination of the history and significance of melodrama as a dominant mode of American cultural production from the early republic to the present, with a focus on issues of race, gender, and national identity. DH

AMST 451 Popular Culture (3) Major themes, dominant, and marginalized popular or mass culture in the U.S.; emphasis on cultural trends and social implications. DH

AMST 452 The '20s and '30s (3) Novelists, painters, poets, jazz musicians as examples of culture of the 1920s and 1930s in American society. DH

AMST 453 Culture, Society, and Literature (3) Literary and non-fictional exploration of the intellectual and moral response of Americans to institutions and culture of 20th-century marketplace economy. DH

AMST 454 Fashioning America (3) Examines linkages between American identity, representation, labor and capital through fashion theory, clothing discourses and other practices of textile production over history. A-F only. Pre: junior standing or consent. DS

AMST 455 U.S. Women's Literature and Culture (3) Reading of selected works of U.S. women’s literature and cultural texts (such as art and film). Emphasis on historical and cultural context and diverse expressions of women’s gendered identities. (Cross-listed as ENG 455 and WS 445) DL

AMST 456 Art of the United States (3) Emphasis on the 18th and 19th centuries. Pre: 202 or ART 176, or consent. (Cross-listed as ART 472) DH

AMST 457 Museum Interpretations (3) Studies the interpretive strategies and methods used by museums to communicate with visitors in museums, art galleries, historic sites, parks, and related places. Considers how interpretations contribute to cultural knowledge. Repeatable one time. Pre: consent. (Cross-listed as ART 481) DH

AMST 458 Film in American Culture (3) Comprehensive survey of varieties of film experience from historical and contemporary points of view. DL

AMST 459 Sports in America (3) Sports as reflected in literature, films, and TV. DS

AMST 460 Early 20th Century American Art (3) American art in the first half of the 20th century and its impact on American culture. Junior standing or higher. Pre: ART 176 or consent. (Alt. years: fall) (Cross-listed as ART 460) DS

AMST 461 America’s World Role (3) Examination of America’s role in modern world affairs, against the background of history, perceptions, and values. DS

AMST 464 America and Africa (3) American attitudes toward Africa, as well as how Africa has functioned within the dynamics of American culture and history. DH

AMST 465 American Experience in Asia (3) Comparison of American experiences in Japan, China, and Southeast Asia within historical and perceptual frameworks. DH

AMST 469 Religion and Homosexuality in American Public Life (3) Examines the roles of religious groups and religious values with regard to homosexuality in American public culture. Pre: junior standing or consent. DH

AMST 474 Preservation: Hawai‘i, Asia, and the Pacific (3) Lectures and discussions on historic preservation issues in Hawai‘i, Asia, and the Pacific. Emphasis on indigenous and national expressions. Pre: junior standing or consent. (Cross-listed as ARCH 474) DH

AMST 475 Documentation of Historic Architecture (V) Study and documentation of existing buildings, structures, sites of historic and/or cultural significance, including field measurements and drawings, historical research, photo documentation, and preparation of archival drawings to be deposited in the Library of Congress. Documentation conducted according to standards of the Historic American Building Survey/Historic Engineering Record (HABS/HAER). Repeatable three times. Pre: consent. (Cross-listed as ARCH 472)
AMST 480 Approaches to American Studies (3) Required seminar in American Studies methods in preparation for the senior research seminar or the senior capstone project. AMST majors only. A-F only. Pre: 382. (Fall only)

AMST 481 Senior Research Seminar (3) Capstone course for American studies students to undertake a major research and writing project. Requires a 20 page minimum final research paper. For AMST majors only. A-F only. Pre: 480 and consent. (Spring only)

AMST 489 World Maritime History (3) Survey of world maritime history from earliest times to the present, with emphasis on the evolution of nautical technology, motives from maritime enterprises, and the impact of cross-cultural encounters between oceanic peoples. (Cross-listed as HIST 489) DH

AMST 490 (Alpha) Topics in American Studies (3) Topics in American history, political science, and/or local communities and cultures. Introduction to governance, planning, institutions (art galleries, historic houses, zoos, parks). History and theory of museums and related institutions (art galleries, historic houses, zoos, parks). Repeatable unlimited times. A-F only. Pre: graduate standing and consent. (Cross-listed as HIST 628 and PLAN 675)

AMST 499 Readings in American Studies (V) Directed readings and research for majors. Pre: consent.

AMST 500 Master’s Plan B/C Studies (1) Graduate standing or consent required for all 600-level courses.

AMST 600 Approaches to American Studies (3) Introductory survey of methodological issues underlying research in American studies.

AMST 601 Patterns of American Cultures (3) American cultural origins and development.

AMST 610 Early America (3) Interdisciplinary approach to understanding early American culture and history. Repeatable one time. Pre: graduate standing or consent. (Cross-listed as HIST 632B)

AMST 611 Asian America (3) The Asian American experience from an interdisciplinary and humanities perspective. Asian American history, literature, media, and theater arts. Comparative study of Hawaii’s and the Continental.

AMST 612 Women in American Culture (3) Historical/contemporary status of women in the U.S.; women’s roles as defined by legal, educational, political, economic, and social institutions; implications for social sciences. Pre: 612 (or equivalent, as approved by the department). (Cross-listed as WS 612)

AMST 614 Advanced Topics: American West (3) Examination of the U.S. colonization of the American West. Topics include: European-indigenous relations, migration and labor, regional literature, frontier ecology, ethnic conflict, and new community formation. A-F only. Pre: graduate standing and consent. (Cross-listed as HIST 639F)

AMST 615 Performance, Culture, and Theory (3) Survey of major critical works in fields of performing arts and public culture (e.g., dance, theater, music, commemoration). Topics include: theoretical application for the discipline of American studies, and the impact of social movements and labor migration on the performing arts.

AMST 616 Gender and the African Diaspora in the Americas (3) Explores the impact of the African Diaspora on the cultures and histories of the Americas through interdisciplinary and feminist scholarship and cultural sources including fiction, foodways, film, poetry, religion, music, and dance. A-F only. Pre: consent. (Spring only)

AMST 617 Social and Cultural Diversity in America (3) Examination of selected subcultures in America.

AMST 618 American Sexualities (3) Aspects of sexual identity within the context of American culture.

AMST 620 Indigenous Identity (3) Interdisciplinary and comparative focus on how Indigenous identity is constructed, negotiated, asserted, ascribed, and deconstructed within and without Indigenous communities with attention to the U.S. Graduate students only. Pre: graduate level standing or higher.

AMST 623 American Architecture (3) Cultural analysis of the evolution of American architecture from the Colonial period to the present involving sociopolitical and economic, as well as aesthetic, considerations.

AMST 624 Wilderness in America (3) American wilderness as both physical setting and social construction. A-F only. Pre: graduate standing or consent.

AMST 625 Material Culture (3) Physical artifacts considered as documents of American cultural and regional development.

AMST 626 Environment and Society (3) Theoretical development in cultural perspective; its relation to the American environment, science, capitalism, public policy, and values.

AMST 632 Mass Media (3) Appraisal of major media of communications in American society with attention to political, educational, cultural, and ethical implications.

AMST 635 Public History and Commemoration (3) Approaches to public presentations of history and examination of various ways in which historic memory is constructed in sites such as museums, memorials, and national parks.

AMST 638 American Punishment (3) Examines the history of American criminal punishment, from the birth of the penitentiary to the rise of the prison-industrial complex. A-F only. Pre: graduate standing. (Cross-listed as SOC 638)

AMST 640 Writing for Publication (3) Advanced seminar designed to convert graduate research projects into publishable scholarly articles. Repeatable one time. A-F only.

AMST 643 Critical Traditions in America (3) Examination of various dissident movements in American history.

AMST 645 Historic Preservation (3) Federal, state, and local laws and regulations that regulate and provide protection to significant archaeological and historical resources in Hawai’i and the region. (Alt. years: spring only) (Cross-listed as ANTH 645)

AMST 646 Advanced Topics: Social/Cultural/Intellectual (3) Readings and research on American social and intellectual history. Repeatable one time. Pre: graduate standing and consent. (Cross-listed as HIST 639B)

AMST 647 Advanced Topics: Business/Labor/Technology (3) Readings and research on American business, labor, and technological history. Repeatable one time. Pre: graduate standing and consent. (Cross-listed as HIST 639B)

AMST 649 American Intellectual Traditions (3) Examination of intellectual figures and movements in American history.

AMST 656 Film in America (3) Examination of various roles of motion picture film in America with particular respect to art form, cultural artifact, document, and myth.

AMST 659 Arts in America: Modern to Post-Modern (3) Survey of the literature of the field.

AMST 664 America in Asia (3) Topics in U.S. economic, political, military, and cultural relations with East and Southeast Asia, from the 18th century to the present.

AMST 668 Globalization and Transnationalism (3) Examines the socioeconomic and cultural meanings of globalization and transnationalism. Emphasis on how the deployment and flows of power beyond the nation-state have an impact on regional, national, and/or local communities and cultures.

AMST 669 Advanced Topics: America and the World (3) Historical and contemporary issues in America’s global relationships.

AMST 670 Comparative Methods in American Studies (3) Examines approaches to American studies that use comparison as a primary method. Comparison of histories, institutions, of phenomena between the U.S. and another country as well as among communities in the U.S. Graduate standing only. Co-requisite: 600 or 601 or 602, or consent. (Every 2-3 years)

AMST 671 Indigenous Curation and Museums: Practice Meets Theory (3) Seminar explores the history, evolution, and contemporary movement towards indigenous curation within museums, emphasis on the Americas and Oceania, as shaped by colonialism, globalization, multiculturalism, self-determination, and nationalism. (Fall only)

AMST 672 20th Century U.S. Literature (3) Selected works of 20th-century literature as cultural documents.

AMST 673 African American Literature (3) Cultural and social imagination of blacks and whites as revealed in literature, poetics and drama.

AMST 675 Preservation: Theory and Practice (3) History and philosophy of historic preservation movement. Analysis of values and assumptions, methodologies and tactics, implications for society and public policy. (Cross-listed as ARCH 628 and PLAN 675)

AMST 676 Recording Historic and Cultural Resources (3) Techniques in recording and evaluation of historic buildings and other resources, with an emphasis on field recordings and state and federal registration procedures. (Cross-listed as ANTH 676 and PLAN 676)

AMST 677 Historic Preservation Planning (3) Local-level historic preservation, with an emphasis on historic districts, design review, and public policy. (Cross-listed as HIST 650 and PLAN 677)


AMST 681 Vernacular Architecture (3) Methods and approaches in the study of vernacular architecture, cultural landscapes, and material culture, with an emphasis on traditions and innovations in the Americas. (Cross-listed as ARCH 679)

AMST 683 Museums: Theory, History, Practice (3) History and theory of museums and related institutions (art galleries, historic houses, zoos, parks). Relationship between museums, collections, and communities. Introduction to governance, planning, legal, and ethical concerns.

AMST 684 Museums and Collections (3) Work of museums and professionals (registrars, collections managers, conservators, curators and others) in the care of collections, interpretive studies of museum displays and collections and field trips. Pre: 683 (or concurrent) or consent.

AMST 685 Museums and Education (3) Overview of museum education including museum learning theories, informal learning programs, audience research, national and international policies and reports, and community projects. Pre: 683 (or concurrent) or consent. (Cross-listed as EDCS 685)

AMST 686 Museum Studies Practicum (3) Applies coursework in museum studies to hands-on activities under the direction of practicing professionals and university faculty. Museum studies certificate students only. Pre: consent.

AMST 688 Indigenous Studies Practicum (3) Applies course work in Indigenous studies to hands-on activities under the direction of practicing professionals and university faculty. Repeatable one time. Graduate students only. A-F only.

AMST 690 Research Seminar (3) Themes, problems, and issues not addressed in other American studies graduate courses; emphasis upon research methods. Repeatable unlimited times.
AMSC 695 Historic Preservation Practicum (3) Applies course work in historic preservation to hands-on activities under the direction of practicing professionals and University faculty. Historic preservation: a professional approach to the protection of the state's architectural and historic resources. Major topics include: the principles and techniques of preservation, the significance of historic structures, the role of the preservation professional, and the role of the preservation activist.

AMSC 696 (Alpha) Preservation Field Study (6) On-site historic preservation field study. Site will rotate. Academic and hands-on preservation training. (B) Hawaii'; (C) Asic; (D) Pacific. Each alpha repeatable up to 16 credits. Pre: consent.

AMSC 699 Directed Reading/Research (V) Repeatable unlimited times.

AMSC 700 Thesis Research (V) Repeatable unlimited times.

AMSC 800 Dissertation Research (V) Repeatable unlimited times.

Key to symbols & abbreviations: see the first page of this section.

Animal Sciences (ANSC)
College of Tropical Agriculture and Human Resources

ANSC 101 Success Skills Development in Human Nutrition, Food and Animal Sciences (1) Combined lecture discussion intended to provide majors in ANSC and FSHN with opportunities to learn about skills, competencies, and university resources necessary to succeed in college. FSHN and ANSC majors only. A-F only. Pre consent. (Cross-listed as FSHN 101)

ANSC 200 Humans, Animals, and Agriculture (3) Lec Reintroduction to animal agriculture, animal science, and the use of animals by humans. Emphasis on human use of animals in agriculture is emphasized. DB

ANSC 201 Principles and Practices of Animal Science (3) Biology, behavior, and management of animals of economic and social importance. Topics include: physiology, genetics, nutrition, reproduction, behavior, care, and management to achieve productivity, performance, and welfare. (lecture, discussion, and field trips) DB

ANSC 244 Comparative Nutrition (3) Digestive systems and nutrient functions, interrelationships and metabolism are compared among animal species, including humans. An intermediate, general nutrition course for Food Science and Human Nutrition and Animal Science majors. Pre: 200 (or concurrent). CHEM 161L or higher. (Cross-listed as FSHN 244) DB

ANSC 301 Anatomy of Domestic Animals (3) Micro and gross anatomical arrangements of tissues and organ systems of domestic animals. Pre: 200 (or concurrent). CR/NC only. Repeatable one time. FSHN 161 and 165 required.

ANSC 404 Upper Extremity, Head, Neck, and Spine (3) Human gross anatomy dissection of the upper extremity, head, neck, and spine. Emphasis is placed on muscles, function, innervation, and vascular supply. Repeatable one time. Enrolled in DBR or KRS graduate programs (including Biomed Sci-Anat/ReprodBio & Phys majors) only or consent. A-F only. (Spring only) (Cross-listed as KRS 603)

ANSC 405 Upper Extremity, Head, Neck, and Spine (3) Human gross anatomy dissection of the upper extremity, head, neck, and spine. Emphasis is placed on muscles, function, innervation, and vascular supply. Repeatable one time. Enrolled in DBR or KRS graduate programs (including Biomed Sci-Anat/ReprodBio & Phys majors) only or consent. A-F only. (Spring only) (Cross-listed as KRS 603)

ANSC 431 Animal Nutrition (3) Principles of nutrition for feeding of farm animals; composition and nutritional value of feed stuffs; nutritional requirements of beef cattle, dairy cattle, horses, poultry, and swine. Pre: 201 (or concurrent), and 244 or FSHN 244. DB

ANSC 432 Animal Nutrition (3) Principles of nutrition for feeding of farm animals; composition and nutritional value of feed stuffs; nutritional requirements of beef cattle, dairy cattle, horses, poultry, and swine. Pre: 201 (or concurrent), and 244 or FSHN 244. DB

ANSC 462 Meat Production (3) (2 Lec, 1 3-hr Lab) Principles of economic beef production, including beef breeds, selection, breeding, management systems, feeding, and marketing under tropical conditions. Pre: 201 and 462.

ANSC 471 Endocrinology of Domestic Animals (3) Principles of endocrinology of domestic animals, estrous synchronization, breeding soundness, and artificial insemination. Pre: 200, 201, 301 (or concurrent), and 321 (or concurrent); or consent. (Fall only)

ANSC 472 Endocrinology of Domestic Animals (3) Principles of endocrinology of domestic animals, estrous synchronization, breeding soundness, and artificial insemination. Pre: 200, 201, 301 (or concurrent), and 321 (or concurrent); or consent. (Fall only)

ANSC 476 Aquaculture Production Laboratory (4) Intensive, hands-on course involving the culture of larval and juveniles of marine shrimp, freshwater pawns, molluscs, fish, and their food. Must have strong interest in hands-on rearing aquaculture animals and flexible time for continuous live animal care. Lab fee required.

ANSC 477 Endocrinology of Domestic Animals (3) Principles of endocrinology of domestic animals, estrous synchronization, breeding soundness, and artificial insemination. Pre: 200, 201, 301 (or concurrent), and 321 (or concurrent); or consent. (Fall only)

ANSC 478 Aquaculture Production Laboratory (4) Intensive, hands-on course involving the culture of larval and juveniles of marine shrimp, freshwater pawns, molluscs, fish, and their food. Must have strong interest in hands-on rearing aquaculture animals and flexible time for continuous live animal care. Lab fee required.

ANSC 480 Aquaculture Business Planning and Entrepreneurship (3) Practical aspects of planning and developing an aquaculture business from conceptualization to a final business plan. Topics include: species/technology, project planning, business structuring, permitting, contracts, production plans, financial planning and analysis, market/competition analysis, capital acquisition, intellectual property and legal issues. Pre: 450 or OCN 450. Must have strong interest in hands-on rearing aquaculture animals and flexible time for live animal care.

ANSC 490 Aquaculture Business Planning and Entrepreneurship (3) Practical aspects of planning and developing an aquaculture business from conceptualization to a final business plan. Topics include: species/technology, project planning, business structuring, permitting, contracts, production plans, financial planning and analysis, market/competition analysis, capital acquisition, intellectual property and legal issues. Pre: 450 or OCN 450. Must have strong interest in hands-on rearing aquaculture animals and flexible time for live animal care.

ANSC 491 Topics in Animal Sciences (V) Study and discussion of significant topics, problems. Offered by visiting faculty and/or for extension programs. Repeatable up to 16 credits. Pre: Junior or senior standing.

ANSC 492 Field Experience (4) Integration and application of academic knowledge and critical skills emphasizing professional development. Placement with an approved cooperating supervisor/employer.
cal practice. Repeatable one time. Sophomore stand-
ning or higher. Pre: 210 or instructor consent. DS
ANTH 384 Skeletal Biology (3)
Introduction to the human skeleton and methods for analyzing
archaeological human remains including age, sex, ethnicity, paleodemography, skeletal and dental
variation, patolnopathology, population studies. Co-
 requisite: 384L. DB
ANTH 384L Skeletal Biology Laboratory (1)
Laboratory to accompany 384. Co-requisite: 384.
DS
ANTH 385 (Alpha) Undergraduate Seminar (3)
Selected problems in current research. (A) archae-
ology; (C) ethnography; (D) social anthropology; (E) applied; (F) psychological; (G) biological. Repeatable
nine times. Pre: junior standing or consent.
ANTH 399 Directed Reading or Research (V)
Repeatable nine times. Pre: major or minor in
Anthropology.
ANTH 408 History and Memory (3) Lecture/ discussion on the culture and politics of collective
memory. Pre: junior standing or consent. (Once a year)
ANTH 410 Ethics in Anthropology (3) Seminar surveying ethical cases, problems, issues and ques-
tions from the inception of anthropology to the present. (Alt. years)
ANTH 411 Museum Anthropology (3) Anthropo-
logical study of museums and related sites of cultural
production (historic sites, memorials, theme parks).
Junior standing or higher. (Alt. years) DS
ANTH 412 Evolutionary Anthropology (3)
Lecture-discussion providing an overview of-evolu-
tionary anthropological theory and practice. Focus
on the evolution of culture, behavioral ecology, and cultural
diversity; emphasis on archaeological and ethnog-
graphic research and explanatory models. Pre: 210 or 215, or consent. (Once a year)
ANTH 413 Language and Gender (3) The role
of language in the construction of gender and in
the maintenance of the gender order. Field projects
explore hypotheses about the interaction of language and gender. No previous knowledge of linguistics
required. A-F only. (Cross-listed as LING 415) DS
ANTH 414 Introduction to Linguistic Anthropol-
yogy (3) Introduction to the ethnographic study of
speech and language. Pre: 152 or consent. (Once a year)
(Alternate years: ANTH 414 and 15) DS
ANTH 415 Ecological Anthropology (3) Relation-
ship of humans with natural environment; role of
culture in ecological systems. Pre: 152. DS
ANTH 416 Economic Anthropology (3) Analysis
of economic activities in non-Western, non-industri-
al societies; production, exchange, and consump-
tion of goods and services in a variety of cultures.
Pre: 152. DS
ANTH 417 Political Anthropology (3) Character
of political institutions and their development in
non-Western and non-industrial societies. Pre: 152.
DS
ANTH 418 The Anthropology of Sexuality (3) Ex-
ploration of the intersection of sexuality research and queer
theory with other anthropological concerns such as
identity, gender, religion, economy, politics, and
globalization. A-F only. Pre: junior standing or
consent. DS
ANTH 419 Indigenous Anthropology (3) Ex-
ploration of how anthropology studies indigenous
groups throughout the world. An examination of the
changing contexts of anthropological practice as calls
for reflexivity lead anthropology of all backgrounds
to bring insights from their “homes.” Issues include
the question of objectivity, the emotive distinction,
and the ethics of institutional frameworks of anthropological
research and the role of anthropologists in indig-
enous self-determination. Repeatable one time. Pre:
152. DS
ANTH 420 Communication and Culture (3)
Anthropological introduction to communication;
terculcultural and interspecies comparisons; verbal
and nonverbal. Ethnography of communication,
discourse and structural analyses, ethnomethology.
Pre: 152. DS
ANTH 421 Anthropology and Mass Media (3)
Anthropological critique of mass media research; role
of mass media in social and cultural processes of au-
thority, economic exchange, and identity formation
in Western, non-Western, and global contexts. A-F
only. Pre: 152. DS
ANTH 422 Anthropology of Religion (3) Cults,
legends, millennial movements, myths, possession,
rituals, sacred healing, shamanism, sorcery, symbols,
spiritual mediums, forms of religious and symbolic
expression and experience, from small scale to highly urban societies. Pre: 152. (Cross-listed as REL 422) DH
ANTH 423 Social and Cultural Change (3) Vari-
ous approaches to examples of social and cultural
change in non-institutional, diffusion, acculturation,
revolution, etc. Historical features and
social processes of colonialism. Pre: 152. DH
ANTH 424 Culture, Identity, and Emotion (3)
The interrelation of culture, thought, emotion, and
social reality. A study of how language functions in
shaping emotional experience and self-understanding,
including the formation of social identities such as
gender, ethnicity and nationality. Pre: 152. DS
ANTH 425 Medical Anthropology (3) Social and
cultural aspects of medicine; the relationship of
medicine to the beliefs, social systems, ecological ad-
aptations, and cultural changes of human groups.
DS
ANTH 427 Food, Health, and Society (3) How
human groups identify, collect, create, and transfor
foods; how their dietary behavior is linked to health
and the influence of those behaviors on health. Pre:
junior standing or higher. DS
ANTH 428 Anthropology of the Body (3) Explo-
ration of the history and development of theories of
the body via topics such as phenomenology, perception,
body rituals, gender, sex, race, colonialism, power,
pain, medicalization, immunology, reproductive
health and cyborgs. Pre: 152. DS
ANTH 429 Anthropology of Consumer Cultures
(3) Examines the meanings of consumption in the
temporary world. Topics include social class, branding, fandom, global-local nexus. A-F only. Pre: 152 or consent. (Alt. years) DS
ANTH 440 The Agriculture of Food: Food and
Agriculture in Anthropological Perspective (3)
Exploration of agriculture from the perspective of
anthropology, with a focus on alternatives to indus-
trial agriculture, especially in the context of Hawai‘i.
Readings include academic writing and also literary
non-fiction and journalism. AF only. Pre: 152. (Alt.
years) DS
ANTH 442 Globalization and Identity in the
Himalayas (3) Examines the influence of local
 culture and global flows on identity formation in the
Himalayan region. Topics include: Hindu caste
culture and gender, constructions of ethnicity, Tibetans
and tourists, Sherpas and mountaineers, development
ideologies, and consumerism. Sophomore standing or
higher. Pre: 152 or 425 or ASAN 202 or consent.
(Alt. years: fall) (Cross-listed as ASAN 442) DS
ANTH 443 Anthropology of Buddhism (3)
Selected aspects of national, regional and local
manifestations of Buddhism are explored through the
perspective of Buddhism with an emphasis on the
daily lives of monks, nuns and lay persons in their socio-cultural contexts. Pre: 422, REL 207, REL 475, or consent. (Alt. years) (Cross-listed as REL 443) DS
ANTH 444 Spiritual Ecology (3) Lectures and
seminars provide a cross-cultural survey of the
relationships between religions, environment and
environmentalism. Pre: junior standing or consent.
(Cross-listed as REL 444) DS
ANTH 445 Southeast Asian Cultures (3) Lectures and seminars provide a cross-cultural survey of sites which recognize as sacred and their cultural, ecological and conservation aspects. Pre: junior standing or consent. (Alt. years) (Cross-listed as REL 445) DS
ANTH 446 Science, Sex, and Reproduction (3)
Examines the historical development of approaches
to reproductive health and procreation, primarily in
developing countries. Examines sex and reproduction as sites of intervention from public health,
development, and biomedical specialists, while also considering local strategies. A-F only. Ju-
nior standing or higher. Pre: 152 or 425 or WS 151.
(Alt. years: Fall) (Cross-listed as WS 465) DS
ANTH 466 Archaeological Biolology (3)
Combined lecture/lab. Introduction to the basic
principles of statistics as applied to the analysis
of archaeological data. Exploratory data analysis
approach. A-F only. Pre: junior majors or
junior standing or higher. Pre: 210. (Alt. years)
ANTH 467 Biomedicine and Culture (3) Exam-
ination of the social and cultural foundations of,
and responses to, the values, technologies and practices
of modern medicine. Pre: junior standing or higher,
152, or consent. (Alt. years) DS
ANTH 469 History of Archaeological Thought
(3) Historical survey of archaeology as a discipline;
discussing the elements of theoretical, methodological,
and substantive advances that changed archaeology.
Pre: 210. DS
ANTH 472 Ceramic Analysis in Archaeology
(3) Concepts, methods, and approaches used in the
analysis of ancient pottery. Emphasis placed on
ceramic technology, stylistic analysis. Pre: 210. DH
ANTH 473 Lithic Artifact Assemblage Analysis
(4) Combined lecture/lab on the manufacture
and analysis of stone tools. Students work with
Key to symbols & abbreviations: see the first page of this section.
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experimental collections and engage in stone tool production. The ways in which lithics enlighten us about past human behavior are discussed. Pre: 210 or 380, or consent. DS

ANTH 475 Faunal Analysis in Archaeology (3) Analysis of archaeological faunal collections with emphasis on identification and interpretation of nonhuman vertebrate remains. Pre: 210. DH

ANTH 477 Spatial Analysis in Archaeology (3) Lecture/lab. Introduction to the use of Geographical Information Systems (GIS) and spatial statistics in archaeological research. Topics include: map creation; spatial database management; spatial analysis; image processing, data reporting; and data display. Pre: 466. (Alt. years) DS

ANTH 479 New World Rituals and Ideologies (3) Study of cross-cultural patterns in ritual behaviors and creolization of African, indigenous, and Iberian ideological frameworks in the Americas. Topics may include syncretic religions (voodoo, candomble), Andean Christianity, spiritual conquest, conceptions of death, etc. Sophomore standing or higher. Minimum C- required grade for prerequisites. Pre: LAIS 360, or consent. (Fall only) (Cross-listed as LAIS 478 and REL 478) DH

ANTH 481 Applied Anthropology (3) The application of anthropological methods and concepts to solving practical human problems such as homelessness, domestic violence, maternal morbidity, conflict over resources, and the loss of indigenous languages. Includes a significant service-learning component. Pre: 152. DS

ANTH 482 Anthropology and the Environment: Culture, Power, and Politics (3) Investigates environmental problems from an anthropological perspective, and examines the cultural politics of contestations over resources, rights, and the meanings of nature. Pre: 152 or 415 or consent. (Alt. years) DS

ANTH 483 Japanese Culture and Behavior (3) Sociocultural factors in Japanese behavior. Social structure; traditional institutions. DS

ANTH 484 Japanese Popular Culture (3) Explores contemporary Japanese popular culture through themes such as gender, consumerism, globalization and nostalgia. Rather than a survey of popular culture genres, the course is organized thematically around issues and problems. DS

ANTH 485 Pre-European Hawai‘i (3) Pre-European society and culture from an anthropological viewpoint. Pre: permission or consent. DH

ANTH 486 Peoples of Hawai‘i (3) Critically examines the historical and contemporary experiences of various people of Hawai‘i and utilizes anthropological and ethnic studies approaches to study identity, race, ethnicity, gender, sex, class, land, and residence. Pre: junior standing or consent. (Once a year) (Cross-listed as ES 486) DS

ANTH 487 Anthropology of Okinawa and Its Diaspora (3) Explores the ties of identity that exist within and between Okinawa and its diasporic populations. Pre: 152. (Alt. years)

ANTH 488 Chinese Culture: Ethnography (3) Critical interpretations of ethnographic and biographic texts depicting individual and family lives in different social settings. Focuses on urban, rural, and cultural regions, and historical periods of modern China. DS

ANTH 490 History of Anthropology (3) Development of anthropological ideas, focusing on theoretical issues concerning culture, society, and human nature. Repeatable one time. Pre: 152. DS

ANTH 491 Special Topics in Southeast Asian Art History: Monuments and Nationalism in Southeast Asia (3) Focused study of particular periods, regions and critical themes in Southeast Asian art and architectural history and nationalism in Southeast Asia. A-F only. Pre: ART 175, or consent. (Once a year) (Cross-listed as ART 490D) DH

ANTH 493 Oral History: Theory and Practice (3) Literature and methodology; project design. Students develop and execute an oral history project. Junior standing or consent. (Cross-listed as ES 493) DH

ANTH 495 Senior Thesis (3) Preparation of a major paper with a committee of one chairperson and one other member; paper on topic of interest in anthropology. Optional for majors. Pre: 490 and senior standing. DH

ANTH 496 Senior Thesis (3) Preparation of a major paper with a committee of one chairperson and one other member; paper on topic of interest in anthropology. Optional for majors. Pre: 490 and senior standing. DH

ANTH 500 Master’s Plan B/C Studies (1) Anticipated of interest in anthropology. Pre: graduate standing. DH

ANTH 601 Ethnology (3) Survey, in historical perspective, of theory in social and cultural anthropology. A course in the graduate core of anthropology. Pre: graduate standing.

ANTH 602 Linguistic Anthropology (3) Investigation of mutual interaction between linguistic theory and methodology and anthropological theory and methodology. A course in the graduate core of anthropology. Pre: graduate standing.

ANTH 603 Anthropology (3) Development of critical and analytical skills in assessment of archaeological literature; emphasis on the science, theory, explanation, and paradigms that comprise archaeology. A course in the graduate core of anthropology. Pre: graduate standing.

ANTH 604 Physical Anthropology (3) Human evolution and human variability in extinct and presently existing populations; emphasis on history of physical anthropology, evolutionary systems, primate biology and behavior, paleoanthropology, anthropological genetics, climatic adaptation, growth, and nutrition. A course in the graduate core of anthropology. Pre: graduate standing.

ANTH 605 Discursive Practices (3) Emphasizes linguistic, semantic, and interactional aspects of culture, exploring ways that discourse constructs social action and social realities, examining processes by which culture is produced as meaningful behavior in actual situations. Pre: graduate standing.

ANTH 606 Anthropology of Infectious Disease (3) The role of biology in understanding the social and cultural determinants in understanding the distribution of infectious diseases and in shaping preventive and therapeutic strategies. Pre: graduate standing.

ANTH 607 The Media and Discursive Practice (3) Role of the mass media in constructing meaning in social cultural processes such as nationalism, ritual, identity, and collective memory. Attention to interactional and post-structural theories of discourse that link the mass media to discursive practice. A-F only.

ANTH 608 History and Memory (3) History and collective memory as culturally formed and politically contested realities. The role of narrative, ritual, and media technologies in shaping representations of the past. Pre: graduate standing.

ANTH 609 (Alpha) Culture and Leadership (3) Multicultural perspectives on the theory and practice of leadership; (B) service learning and leadership; (C) applied leadership internships; (D) contemporary leadership profiles; (E) film and leadership. A-F only. Pre: graduate standing and consent.

ANTH 610 Anthropology of Tourism (3) Social and cultural analysis of tourism practices, with emphasis on Hawaii’s Asia and the Pacific. Tourism in relation to consumer culture, transnational flows of people and images, post-colonial politics, performance and identity formation.

ANTH 611 Contemporary Anthropological Theory (3) Graduates prepare to examine the history of theory in socio-cultural anthropology from 1960 to present. Designed to be taken in sequence after 601. Pre: 601 or consent. (Once a year) DH

ANTH 620 (Alpha) Theory in Social and Cultural Anthropology (3) Further theoretical problems in (B) kinship; (C) cognitive systems; (D) religion; (E) political institutions; (F) law and social control; (G) economics; (H) ecology; (I) other to be announced. Repeatable nine times. Pre: graduate standing.

ANTH 640 (Alpha) Methods and Theory in Archaeology (3) Focused seminars pertaining to distinct areas of archaeological method and theory. (B) analytical; (C) environment/landscape; (D) applied archaeology; (E) economic/resources; (F) survey/local. Repeatable two times. Pre: 603.

ANTH 645 Historic Preservation (3) Federal, state, and local laws and regulations that regulate and provide protection to significant archaeological and historical resources in Hawaii. Pre: graduate standing and relevant background in anthropology or related field. (Alt. years)

ANTH 663 Anthropology of Global Aid (3) Examines ideologies of development, humanitarian, and global health interventions from an anthropological perspective. Explores the disputes between discourses that portrays global aid as easing suffering and those that accuse it of maintaining relationships of domination. A-F only. (Alt. years: spring)

ANTH 667 Biomedicine and Culture (3) Examination of the social and cultural foundations of biomedicine and responses to, the values, technologies, and practices of modern medicine. Pre: graduate standing. (Alt. years)

ANTH 668 Archaeology Field Methods (V) (5-7 hr) Laboratory and field training in the principles and practice of methods of archaeological fieldwork, including mapping, excavation, conservation. Repeatable one time. Pre: graduate standing.

ANTH 670 Applied Anthropology Practicum (V) Applies course work in anthropology to hands-on activities under the direction of practicing professionals and university faculty. MA track in Applied Archaeology students only. Repeatable up to 12 credits. Pre: consent.

ANTH 671 Applied Method and Theory in Hawaiian Archaeology (3) Seminar focuses on method and theory in the practice of applied anthropology in Hawaii. Pre: graduate standing or consent. (Alt. years)

ANTH 676 Recording Historic and Cultural Resources (3) Techniques in recording and evaluation of historic buildings and other resources, with an emphasis on field recordings and state and federal registration procedures. (Cross-listed as AMST 676 and PLAN 676)

ANTH 681 Applied Cultural Anthropology (3) Theory, methods, and results of application of cultural anthropological concepts to practical problems. Graduate students only.

ANTH 682 Applied Cultural Anthropology Practicum (3) Applies course work in cultural anthropology to hands-on activities under the direction of practicing professionals and university faculty. Repeatable one time. ANTH majors only. Graduate students only. Pre: 681.

ANTH 695 Professional Skills Develop in Anthropology (3) Seminar prepares graduate students for entry into profession, including employment opportunities, research, presentations, ethics and outreach. Required of all Plan B students. Pre: graduate standing.

ANTH 699 Directed Reading or Research (V) Repeatable nine times. Pre: graduate standing and consent.


ANTH 710 Seminar in Research Methods in Cultural Anthropology (3) Seminar introduces research methods. Introduction to the approaches and techniques of participatory research, including the collection, analysis, and interpretation of social and cultural data. Politics and ethics of research practice. Repeatable one time. Pre: graduate standing in anthropology or consent.

ANTH 711 Seminar in Research Design and Proposal Writing (3) Research design and proposal writing. For students preparing for advanced research. Pre: graduate standing and consent.

Key to symbols & abbreviations: see the first page of this section.
ANTH 720 Anthropology of Japan (3) Japan examined through three dimensions of cultural anthropology: cultural/symbolic, social/organizational, and individual/psychological. Selected topics analyzed and interpreted in terms of conjunctions of these dimensions. Pre: 483 or 484.

ANTH 750 (Alpha) Research Seminar (3) Selected problems in current research. (B) archaeology; (C) medical; (D) ethnography; (E) social; (G) biological. Repeatable nine times. Pr: graduate standing.

ANTH 800 Dissertation Research (V) Research for doctoral dissertation. Repeatable nine times.

ARCH (Arabic)  
College of Languages, Linguistics and Literature  
Students choosing Arabic for the language requirement should realize it may not be offered if demand is limited.

ARCH 101 Elementary Modern Standard Arabic (4) Designed to provide students with basic knowledge of Modern Standard Arabic. Focuses on developing proficiency in the standard written Arabic language, as well as formal spoken Arabic. HSL

ARCH 102 Elementary Modern Standard Arabic (4) Focuses on developing proficiency in the standard written Arabic as well as formal spoken Arabic. It introduces a wide range of situation-based texts and topics that build vocabulary, grammar, and general communicative competence. Pre: 101. HSL

ARCH 201 Intermediate Modern Standard Arabic (4) Designed for students who have successfully completed a year of Elementary Arabic. Focus is on acquisition of more complex grammatical structures, expanding vocabulary, and developing competence in a wide range of communicative functional skills such as listening comprehension and fundamental conversation strategies. Pre: 201 or exam or consent. (Fall only) HSL

ARCH 301 Third-Level Arabic I (3) Develop proficiency in reading/listening comprehension in Modern Standard Arabic. The instructional materials consist of authentic written, visual and audio materials. Classes meet 3 hours weekly. Pre: 202 (or equivalent), or consent.

ARCH 302 Third-Level Arabic II (3) Continuation of third-level Arabic I. Emphasis on developing writing and interaction ability at advanced levels of proficiency. Course includes extensive reading, composition exercises, listening skills, conversation practiced and extended review of Arabic grammar. Developing fluency is the main objective of this course. Classes meet 3 hours weekly. Pre: 301 (or equivalent), or consent.

Architecture (ARCH)  
School of Architecture  
All courses are restricted to declared architecture majors, unless otherwise specified.

ARCH 100 Introduction to the Built Environment (3) Introduction to the breadth of design in today’s global culture. Exploration of human responses to place. Focus on communication, culture, and technology, with emphasis on the impact of scientific knowledge on environmental design. Open to nonmajors. A-F only. DS

ARCH 101 Basic Design Studio (4) Introduction to creative design process, focusing on the investigation of composition within defined perceivable space. Hands-on exploration of materials and structures as an introduction to design processes. Open to non-majors. A-F only. DA

ARCH 132 Design Communication (4) Exploration of critical judgment and means to conceptualize, develop, present, and both visually and orally communicate form and space, including foundations of freehand drawing, mechanical drawing, physical model making, diagramming, and graphic techniques. Open to non-majors. A-F only. DA

ARCH 200 Collaboration in Environmental Design (2) Investigation of the various disciplines in the environmental design field, including architecture, landscape architecture, interiors, historic preservation, public relations, urban design, management. Emphasis given to collaborative methods to address critical issues. Open to non-majors. A-F only.

ARCH 201 Architecture Design Studio (4) Development of design processes to study precedents and explore solutions responding to human needs in built and natural environment with emphasis on analysis and representation architectonic space and form using hand and computer techniques. A-F only. Pre: 231 DA

ARCH 220 Introduction to Environmental Systems A (3) Introduction to building systems, including structural, environmental, life-safety, building envelope, building materials and building assemblies. Development of design skills with emphasis on elevating skills in assessing and selecting appropriate building systems. A-F only. Pre: 132 and MATH 140.

ARCH 235 Computer Applications in Design (4) Exploration of design digital fundamentals and their application to design analysis, conceptualization, design process, and communication of design intent. Pre: 100, 101, and 132.

ARCH 251 Introduction to Landscape Architecture (3) Principles and practice of landscape planning, design, and technology. Ecological, sociocultural, and natural science determinants of landscape form and pattern. Open to nonmajors if space available.

ARCH 271 World Architecture and Urbanism A (3) Investigation and theory of architecture in the world’s major cultural regions, from early agricultural settlements to 1500 C.E. Investigation of architecture in relationship to social, political, technological, and material forces. Open to non-majors. A-F only. Pre: ARCH 151. DH

ARCH 272 World Architecture and Urbanism B (3) Investigation of the history and theory of architecture from the 15th century C.E. to the present. Investigation of architecture in relationship to social, political, technological, and material forces. Open to non-majors. A-F only. Pre: HIST 152. DH

ARCH 321 Introduction to Environmental Systems B (3) Introduction to environmentalism; focusing on the impact of building systems of the global environment; energy conservation; environmental regulations/ certifications, and understanding of sustainable principles (economic, social, and natural systems). ARCH majors only. A-F only. Pre: 320, and PHYS 151/151L.

ARCH 341 Intermediate Design Studio A (4) Building and site design with emphasis on site development, analysis, and climatic response. Introduction to sustainable design, land use ordinances, description and delineation of property and land features, and urban and community design influences. A-F only. Pre: 200 and 201.


ARCH 350 Introduction to Planning (3) Perspectives on planning; planning tools and methods; specific Hawai’i planning/research problems from a multidisciplinary approach. Pre: consent.

ARCH 351 Introduction to Landscape Design (3) Principles and practice of design within the comprehensive planning process. Sociocultural, economic, political, environmental determinants of urban form and pattern. Open to nonmajors if space available. DS

ARCH 352 Landscape Architecture History, Theory, and Practice (3) Surveying the development of landscape architecture as an art form from Mesopotamia to present. Exploring the theory, profession and art of landscape architecture in the world by physical, social, economic, political, and cultural environmental factors. (Alt. years) (Cross-listed as TPSS 352) DH

ARCH 353 Landscape Graphics Studio (4) Basic skills of landscape graphic communication through a creative process model. Learning free hand and technical drafting techniques to creative effective landscape graphics. Pre: consent. (Alt. years) (Cross-listed as TPSS 353) DA

ARCH 354 Tropical Landscape Planting Design Studio (4) Students will develop basic skills of residential landscape graphic and design processes in order to clearly articulate the ability to think, analyze, and extend a physical world with the proper scale. Repeatable one time. A-F only. (Alt. years) (Cross-listed as TPSS 354) DA

ARCH 371 Design Theory (3) Examination of theories, movements, and periods in architectural history focusing on contemporary issues. Introduction to analytic techniques for achieving understanding of formal and spatial ordering of architectural and site constructs. ARCH majors only. A-F only. Pre: 271 and 272. DH

ARCH 372 Special Topics in Architectural History and Theory (3) An examination of specific theories, movements, or periods of architectural history. Changing topics to be taught by both regular and visiting faculty. Repeatable three times. Pre: 271 and 272. DH

ARCH 399 Directed Work (V) Pre: consent.

ARCH 400 Project Management (3) Exploration of the management of architectural services from project initiation through project completion. Investigation of project delivery options; management of project design teams, project operations and services; design parameter definition; design service documentation; and project execution. A-F only. Pre: 200.

ARCH 405 Selected Design Studio (3) Special architecture/interior architecture problems individually selected by students or faculty to sharpen design skills. Repeatable one time.

ARCH 406 Office Research Practicum (3) Learn design research method[s]. Conduct architectural design research under the guidance of a practicing architect in an office setting in an area of the architect’s expertise and interest. The experience also exposes students to the professional practice of architecture via shadowing an architect mentor relative to typical design process activities, management of project teams, and professional ethics issues. A-F only. Pre: 200.

ARCH 415 Concentration Design Studio (6) Professional experience combined with scholarly and research activity occurring in an off-campus location with a focus on architectural design problem areas. ARCH majors only. A-F only. Pre: 342.

ARCH 422 Green Building Evaluation and Rating Systems (3) Introduction to green building design, construction, and operation standards and rating systems. Emphasis on understanding the intent, criteria, and process of the LEED system in preparation for application in a professional setting. ARCH majors only. A-F only.

ARCH 423 Construction Project Management (3) Introductory treatment of the management of construction. Construction supervision, contract documents, estimating and bidding, organization, planning and scheduling, administration, business methods, safety, and labor. ARCH majors only. A-F only. (Cross-listed as CEE 472)

ARCH 433 Professional Practice Law and Ethics (3) Exploration of the practice of architecture including: professionalism; office organization and administration; public, client, consultant, and other contractor relationships; project administration, procedure and compensation; construction law and contract administration. A-F only. Pre: 200 and 341.


Key to symbols & abbreviations: see the first page of this section.

2015-2016 Courses 375
ARCH 435 Architectural Economics (3) Survey of fundamental business principles and economic theories as they relate to professional practice for design professionals. DS

ARCH 442 Introduction to Urban Design (3) Principles and practice of urban design within the comprehensive planning process. Sociocultural, economic, political, and environmental determinants of urban form and pattern. Open to non-majors if space available. A-F only. DS

ARCH 451 Landscape Architecture Design Seminar (3) Principles and practice of landscape architecture within the comprehensive design processes of the built environment. Focus on context-specific sociocultural, economic, political, and environmental determinants of landscape forms and patterns. Open to non-majors if space available. A-F only. DS

ARCH 461 Introduction to Interior Architecture (3) Introduction and orientation to the field. Fundamental design principles and elements as applied to interiors. Basic materials and methods of interior construction; basic professional and business practices. Critical analysis of an existing interior space. Open to non-majors if space available. Repeatable three times. DA

ARCH 471 Historic Architecture Design Seminar (3) Introduction to historic preservation. Exploration of design principles as applied to conservation of historic resources, including basic conservation materials and methods, professional practices, and critical analysis of existing methodologies. Open to non-majors if space available. A-F only.

ARCH 472 Documentation of Historic Architecture (V) Study and documentation of existing buildings, structures, and sites of historic and/or cultural significance, including field measurements and drawings, historical data, architectural principles, and transportation of archival drawings to be deposited in the Library of Congress. Documentation conducted according to standards of the Historic American Buildings Survey/Historic American Engineering Record (HAS/HAEER). Repeatable three times. Pre: consent. (Cross-listed as AMST 475)

ARCH 473 History of American Architecture (3) History of architecture in terms of style, techniques, and symbolic meaning. (Cross-listed as AMST 423) DH

ARCH 474 Preservation: Hawai‘i, Asia, and the Pacific (3) Lectures and discussions on historic preservation issues in Hawai‘i, Asia, and the Pacific. Emphasis on indigenous and native expressions. Pre: junior standing or consent. (Cross-listed as AMST 474) DH

ARCH 477 Research Seminar (V) Research methodology for the qualitative development of an optimum environment. Repeatable three times. Pre: consent.

ARCH 490 Special Topics (3) Selected topics in any aspect of architecture. Content to be announced. Repeatable three times.

ARCH 491 Special Topics in Architecture History (3) Specialized work on the history and theory of architecture. Repeatable unlimited times. ARCH majors only. A-F only.

ARCH 492 Special Topics in Architectural Technology (3) Specialized investigation of architectural technologies in structural systems, environmental control systems, or materials and methods of construction. Repeatable unlimited times.

ARCH 493 Special Topics in Architecture and Design (3) Intensive work on specialized topics in the fields of architecture and design. May include research and/or studio experiences in architecture, interior architecture, computer-aided design, professional practice, advanced visual design, and architectural graphics. Repeatable unlimited times. ARCH majors only. A-F only.

ARCH 495 (Alpha) Foreign Exchange (3) Various course work including design, history, theory, technology, and sustainability offered for international exchange students. (E) elective; (L) laboratory; (P) project; (S) seminar. A-F only. Pre: departmental approval.

ARCH 628 Preservation: Theory and Practice (3) History and philosophy of historic preservation movement. Analysis of values and assumptions, methodologies and tactics, implications for society and public policy. (Cross-listed as AMST 675 and PLAN 675)

ARCH 650 Vernacular Architecture (3) Methods and approaches in the study of vernacular architecture, cultural landscapes and material culture, with an emphasis on traditions and innovations in the Americas. (Cross-listed as AMST 681)

ARCH 679 Elements of Style (3) The manifestations, visual characteristics, and social/cultural meaning of “style” in American architecture and decorative arts from the early settlement period through the present. (Cross-listed as AMST 679)

ARCH 690 Special Topics Seminar (3) Seminar on a wide range of architectural topics to be directed by both visiting and regular faculty. Repeatable three times. Pre: consent.

ARCH 691 Special Topics: Architecture History/Theory (3) Specialized work at an advanced level on the history and theory of architecture. Repeatable unlimited times.

ARCH 692 Special Topics in Architectural Technology (3) Specialized investigation at an advanced level of technological developments in structural systems, environmental control systems, or materials and methods of construction. Repeatable unlimited times.

ARCH 693 Special Topics in Architecture and Design (3) Intensive work on specialized topics in the fields of architecture and design. May include research and/or studio experiences in architecture, interior architecture, computer-aided design, professional practice, advanced visual design, and architectural graphics. Repeatable unlimited times.

ARCH 695 Applied Theories of Landscape Architecture (3) Graduate seminar on discussion of central ideas and theories in landscape architecture and environmental design, drawing on primary literature and speculative or built design work over many decades of thought. Graduate students only. A-F only.

ARCH 699 Directed Work (V) ARCH 715 Asia-Pacific Architectural History and Theory (3) Study of the history and theory of culture and the built environment with particular focus on the Asia-Pacific region. ARCH majors only. Graduate students only. A-F only.

ARCH 716 Architecture and Urban Design Theory (3) Detailed investigation of major theories in architecture and urban design and examination of their impact on contemporary architectural practice in varied geo-political contexts. Open to non-majors. A-F only.

ARCH 722 Architecture Systems I: Introduction to Systems (3) Study of building materials, assemblages, and integrated design including structural, environmental, life-safety, and building envelope systems. Development of ability to design, analyze and assess appropriate systems. ARCH majors only. A-F only. Pre: MATH 140.

ARCH 723 Architecture Systems II: Qualitative Bioclimatic Structural Performance (3) Introduction to the theory of bioclimatic structural systems and the ability to analyze, assess, select, design, and integrate them into the design process. ARCH majors only. A-F only. Pre: graduate status.

ARCH 724 Architecture Systems III: Quantitative Structural Analysis and Design (3) Introduction to quantitative structural analysis and design for individual structural systems and building structural systems. ARCH majors only. A-F only. Pre: 723.

ARCH 725 Architecture Systems IV: Environmental Technology, Sustainability, and Analysis (3) Application and analysis of high-performance building design principles. Emphasis on climate-appropriate passive design, energy-efficient lighting and conditioning strategies, innovative water systems, and renewable energy production. ARCH majors only. A-F only. Pre: 723.


ARCH 731 Advanced Design Communication I (3) Exploration of digital technologies, their relationship to design, and their application to architectural design, communication, representation, and construction. ARCH majors only. A-F only. Pre: departmental approval.

ARCH 733 Advanced Design Communication II (3) An investigation of design theory connected to digital technology and its applications to current developments in practice and research within architecture and design. ARCH majors only. Graduate students only. A-F only.

ARCH 734 Forms and Frames of Practice (3) Comprehensive study of architectural practice within the global context with emphasis on the Asia Pacific region. Exploration of information technology systems, materials and design, process research, construction technology, computer aided manufacturing, and entrepreneurial approaches. ARCH majors only. Graduate students only. A-F only.

ARCH 735 Architecture Doctorate Seminar (3) Assessment of both contemporary and future architectural education, research, and practice by examining existing and evolving consistencies and shared visions that cut across distinct architectural approaches and other disciplines. Conceptual skills in the production of architecture that links environmental concerns with advances in building construction, computational and informational technologies. It includes the study of collaboration in design and on the technologies and spaces that support it; the study of encoding design knowledge in material resolution. CR/NC only. Pre: consent.

ARCH 737 Advanced Design Communications II (3) Interdisciplinary investigation of design theory connected to architectural communication techniques, particularly oral and written, to current developments in architectural practice. A-F only.

ARCH 739 Research Methods Seminar (3) Comprehensive assessment of objectives and function of research in architecture. Lecture, seminar, independent study, and research projects. Pre: consent. ARCH majors only. A-F only. Pre: 715.

ARCH 740 Architecture Studio I: Intro to Design (6) Design theories and systematic analytic and comprehensive methods in building and site responsive to environmental and human needs. Several individual projects. ARCH majors only. A-F only.

ARCH 741 Architecture Studio II (6) Design of a medium complexity building and site engaging social, cultural, codes, building systems, and sustainable design. Production of program and schematic design documents. Individual projects. ARCH majors only. A-F only.

ARCH 742 Architecture Studio III (6) Design of complex, large scale building and site engaging social, cultural, code, sustainable systems, and acoustic issues. Production of schematic and design development documents. ARCH majors only. Graduate standing only. A-F only.

ARCH 743 Architecture Studio IV: Urban Design (6) Urban design focused on Asian cities investigating social, cultural, political, and technological factors; study of historical precedents, building block...

ARCH 750 (Alpha) Architecture Studio (6) Urban design focused on investigating social, cultural, political, and technological factors; study of historical precedents, building/block typology, circulation, infrastructure, and context response. C (China); C (Chongqing) design research. A-F only. ARCH Global Track only. Graduate standing only. Pre: 744 for (C); 739 and 743 for (G).

ARCH 751 Architecture Topics (1) Range of topics allowing A-F only. Graduate standing only for (G), (H), and (T). A-F only. Pre: 744, and 750C or 750G for (B), (G), and (T); 744 and 746 for (C), (E), (H), and (P).

ARCH 755 Advanced Global Practice (3) Comprehensive study of architectural practice investigating architect’s response to global forces, including entrepreneurial practice, office organization, project delivery, compensation, and construction law. ARCH majors only: A-F only. Pre: 743, 739 and 743 for (T).

ARCH 777 History of Hawaiian Architecture (3) Investigation of architectural and theory in the world from antiquity to present. Examining social, political, technological, material, and environmental forces. ARCH majors only. A-F only.

ARCH 781 Critical Inquiry Research Program (3) Individual development of a doctorate proposal that advances architectural knowledge through analysis, research, scholarship, and design. ARCH majors only. Graduate standing only. A-F only.

ARCH 784 (Alpha) Doctorate Project I (6) Individual development of a doctorate project with an approved chair and doctorate project committee that advances architectural knowledge through analysis, research, scholarship, and design. ARCH majors only. Graduate students only. A-F only. Pre: 747C or 747F or 747E for (H); 750C or 750G for (T).

ARCH 786 (Alpha) Doctorate Project II (6) Individual development of a doctorate project with an approved chair and doctorate project committee that advances architectural knowledge through analysis, research, scholarship, design, and engages theoretical and architectural propositions. (H) Hawaii; (T) Tongii. Repeatable one time for (H). ARCH majors only. Graduate students only. A-F only. Pre: 784H for (H); 784T for (T).

ARCH 788 Doctorate Project II Extension (3) Extension of the development of a doctorate project with an approved committee that advances architectural knowledge through research, scholarship, design, and engages theoretical and architectural propositions. Repeatable one time. ARCH majors only. CR/NCR only. Pre: 786.

ARCH 794 Digital Design and Fabrication (3) Theoretical and design investigations into fabrication and construction techniques using computer aided design and manufacturing technologies. ARCH majors only. A-F only. Pre: 733.

ARCH 795 Building and Landscape: Theory and Practice (3) Research into landscape, landscape architecture, and architecture from historical, historicographic, and theoretical perspectives. ARCH majors only. A-F only.

Art and Art History (ART) 101 Introduction to the Visual Arts (3) Nature of the world’s visual arts and their influences on personal expression. Lectures, demonstrations, and studio practice. (Not for art majors or minors) DA

ART STUDIO CORE COURSES

It is recommended that art majors complete 113 and 116 of the art studio core prior to undertaking studio courses at the 400 level.

ART 113 Introduction to Drawing (3) Descriptive, expressive, and formal aspects of visual language through drawing practice. DA

ART 116 Introduction to Three-Dimensional Composition (3) Basic concepts, elements, and principles of art. DA

ART HISTORY & THEORY CORE COURSES

It is recommended that art majors complete both 175 and 176 prior to undertaking studio courses at the 300 level. 175 and 176 is required of all Art majors; 302 is required of all BFA’s and 395 is required of all Art History majors.

ART 175 Survey of Global Art I (3) Art produced in Asia, Africa, Native America, Europe, and the Pacific Islands, from prehistory to the 15th century. Religious and philosophical ideas expressed in architecture, painting, prints, sculpture, applied art, body art, and textiles. (Fall only) FGA

ART 176 Survey of Global Art II (3) Art produced in Asia, Africa, Native America, Europe, and the Pacific Islands, from the 15th century to the present. Religious and philosophical ideas expressed in architecture, painting, prints, sculpture, applied art, body art, and textiles. (Spring only) FGB

ART 302 Introduction to Contemporary Critical Theory (3) Examination of the significant themes and issues in contemporary critical theory as they relate to the production and reception of art. Pre: 176 or consent. DH

ART 395 Art Historical Methodology (3) Introduction to the methods and approaches of art history. Students develop analytical and research skills in the interpretation and comprehension of visual art forms, and a critical understanding of the methods used by art historians to analyze them. A-F only. Pre: 175 and 176 and consent. DH

HISTORY OF ART

ART 371 Medieval Art (3) Arts of Europe from early Christian era to Renaissance. Pre: 175 or consent. DH

ART 373 Art of Greece and Rome (3) Minoan and Mycenaean arts; Greece and Rome. Pre: 175 or consent. DH

ART 374 Art of the 19th Century (3) Architecture, sculpture, and painting of Europe. Pre: 176 or consent. DH

ART 380 Early Art of Japan (3) Major developments, prehistoric through Kamakura; architecture, painting, sculpture. Pre: 175 or consent. DH

ART 381 Later Art of Japan (3) Major developments, Muromachi to modern period; painting, sculpture, architecture. Pre: 175 or consent. DH

ART 384 Art of Korea (3) Ceramics, sculpture, painting, and architecture; neolithic through Yi. Pre: 175 or consent. DH

ART 385 Art and Culture of Early China (3) A culturally oriented study of Chinese visual arts; emphasis on jade, bronze, secular and religious sculptures, and paintings from prehistory to the 9th century. Pre: 175 or consent. DH

ART 386 Art and Culture of Late China (3) A culturally oriented study of Chinese visual arts; emphasis on the rise of literati painting and theory individualism in art and theory, garden, and architecture, and the Chinese pursuit of modernity and post-modernity in art. Pre: 176 or consent. DH

ART 390 Art of Africa, Pacific, North America (3) Contextual study of art from selected areas in Africa, Pacific, and North America. Pre: 176 or consent. DH

ART 396 (Alpha) History of Photography (3) History of photography from its beginnings to the present; emphasis on the evolution of photography as an art form; (B) nineteenth century, from the invention of photography through pictorialism; (C) twentieth century, from World War I to the present. Repeatable one time for different alphas. Pre: 176 or consent. DH

ART 400 Early 20th Century American Art (3) American art in the first half of the 20th century and its impact on American culture. Junior standing or higher. Pre: 176 or consent. (Alt. years: fall) (Cross-listed as AMST 460)

ART 470 (Alpha) Renaissance Art (3) Painting, sculpture, and architecture; (B) early Renaissance in Italy; (C) northern Europe; (D) High Renaissance and mannerism in Italy. Repeatable one time for different alphas. Pre: 176 or consent. DH

ART 471 Baroque and Rococo Art (3) Architecture, sculpture, and painting of Europe in the Baroque and Rococo periods. Pre: 176 or consent. DH

ART 472 Art of the United States (3) Emphasis on the 18th and 19th centuries. Pre: 176 or AMST 202 or consent. (Cross-listed as AMST 472)

ART 473 Art of the First Half of 20th Century (3) Development of modern art in Europe 1900–1939. Pre: 176 or consent. DH

ART 474 Art Since Middle 20th Century (3) Art since 1945, with a focus on the global expansion of the avant-garde. Pre: 176 or consent. DH

ART 475 (Alpha) Art of the Pacific (3) Visual form and function of the arts in cultural context: (B) Indonesia; (C) Melanesia, Micronesia, Polynesia; (D) North Pacific coast Indian, Eskimo. Repeatable one time for different alphas. Pre: 176 or consent. DH

ART 476 Art of Tribal Africa (3) Visual form and function of arts in cultural context. Mali, Burkina Faso, Ivory Coast, Liberia, Guinea, Nigeria, Ghana, Cameroon, Congo, Zaire. Pre: 176 or consent. DH

ART 478 Representing Identity in Contemporary Art (3) Focus on issues associated with an emphasis on discussion of gender, cultural, and political identity in contemporary art and visual culture. A-F only. Pre: 176 or consent. (Alt. years) DH

ART 479 Art of Hawaii (3) Stylistic and aesthetic characteristics of art of ancient Hawai‘i; relationship to art from other parts of Polynesia. Pre: 176 or consent. DH

ART 483 Applied Art of Japan (3) Ceramics, metalwork, lacquer, and textiles throughout Japanese history. Pre: 175 and 176; or consent. DH
ART 486 Traditional Chinese Painting (3) Stylistic and historic development of two-dimensional arts; painting and calligraphy from prehistory through 18th century. Pre: 175 or consent. DH

ART 487 Modern and Contemporary Art of China (3) Historical survey of particular periods, regions and critical themes in Southeast Asian art and architectural history. (B) Angkor & art of Khmer civilization; (C) art & architecture of Thailand; (D) moniments & nationalism in Southeast Asia. Repeatable one time for up to two different alphs. A-F only. Pre: 175, or consent. (Once a year) (D) Cross-listed as ANTH 491) DH

ART 491 (Alpha) Art of Southeast Asia (3) Critical analysis of the historical and cultural development of Buddhist and Hindu art in Southeast Asia; (B) island Southeast Asia; (C) mainland Southeast Asia. Repeatable one time for different alphs. Pre: 175 or consent. DH

ART 492 (Alpha) Art and Architecture of South Asia (3) Art and architecture of South Asia in historical and cultural context. (B) introduction to art of India and South Asia; (C) Hindu visual culture. Pre: consent. DH

ART 493 Art of Islam (3) Major developments in art and architecture. Pre: 175 or consent. DH

ART 494 Photography: Critical Issues (3) Seminar on theoretical, ethical and aesthetic issues relating to the practice of photography, past and present. A-F only. Pre: 396B or 396C, or consent. DH

ART 495 History of Modern Design (3) Major design movements in Europe and America from late 19th century to present; arts and crafts movement, art nouveau, modernist trends of the 20th century. Pre: 176 or consent. DH

ART 496 Topics in the History of Cinema (3) Specific period or national style of cinema studied in its historical context. Repeatable two times. Pre: 176 or consent. DH

ART 670 Art Historical Methodology (3) An introduction to art historiography, analytical techniques, and research methods and materials. Pre: consent and graduate standing.

ART 677 Art of Oceanica (3) Arts from Polynesia, Melanesia, Micronesia explored in context of issues involving belief systems and cultural change. Repeatable one time. A-F only. Pre: 475C, or consent. DH

ART 688 Topics in the Art of China (3) Research topics in the history of Chinese sculpture, ceramics, bronze, jade, and textiles. Pre: consent.

ART 690 Seminar in Contemporary Critical Theory (3) Research and discussion seminar supporting advanced critical theory in the context of contemporary art and other creative practice. Pre: consent.

ART 691 Seminar in Global Contemporary Art (3) Selected topics in global contemporary art history. Repeatable one time. A-F only. Pre: consent. (Alt. years)

ART 695 Seminar in Western Art History (3) Selected topics in European and American art history. Pre: consent.


ART 791 Seminar in South/Southeast Asian Art History (3) Selected topics in South and/or Southeast Asian art history and architectural history with an emphasis on Hindu and Buddhist traditions. Repeatable unlimited times. Pre: consent, repeatable with consent.

ART 792 Orientalism and Visual Culture (3) Investigates artistic representations, appropriations, and exchanges constructed on the basis of East/Orient vs. West/Occident differences. Includes analysis of: Orientalizing artistic traditions throughout history, history and concept of Orient, post-colonial critique of Orientalism. A-F only. Pre: graduate standing or consent. (Alt. 2-3 years) (Cross-listed as ASAN 792)

CERAMICS

ART 242 Introduction to Ceramics (3) Three-dimensional concepts in clay; hand-building and wheel-throwing techniques. Projects, lectures, and demonstrations. DA

ART 343 Ceramics—Sculpture (3) Sculptural concepts and techniques specifically related to the medium of clay; advanced hand-building, throwing, glazing, and firing techniques. Repeatable one time. Pre: 242 or consent. DA

ART 344 Ceramics—Vessels (3) Exploration of the ceramic vessel as form, function, and expression. Advanced hand-building, throwing, glazing, and firing techniques. Repeatable one time. Pre: 242 or consent. DA

ART 345 Ceramics—Low Temperature (3) Form and surface problems related to stoneware clay, bodies and low-temperature glazes; mold-making for ceramics. Repeatable one time. Pre: 242 or consent. DA

ART 346 History of Western Ceramics (3) Western ceramics history from chronological, developmental, contextual, and theoretical standpoints; influence of Asian ceramics. Pre: 242, with 175 and 176 recommended; or consent. DH

ART 347 Technical Ceramics (3) Clay body development, glaze development, empirical and calculation methods. Emphasis on glaze maturity, surface, and color. Pre: 242, and one of 343, 344, or 345; or consent. DA

DIGITAL IMAGING

ART 202 Introduction to Digital Imaging (3) Combined theory and practice examining major techniques, concepts, and aesthetics in contemporary digital image production. Direct studio experience in essential software, printing techniques and hardware necessary in producing the gallery quality inkjet print. A-F only. Pre: 113. DA

ART 304 Digital Imaging: Professional Printing (3) Combined theory and practice. Investigates industry standard methods for archival pigment printing. Techniques include: device calibration and profiling, black and white, coating techniques, mounting and adhesive techniques, professional portfolio presentation. A-F only. Pre: 202 (with a minimum grade of B). DA

ART 305 Digital Imaging: Alternative Printing (3) Combined theory and practice. Merges digital printing, mark-making, photography, and traditional printmaking. Includes image transfers, lifts, pre-coating techniques, as well as printing on alternative substrates such as watercolor papers, metals, and cloth. Repeatable one time. A-F only. Pre: 202 (with a minimum grade of B). DA

DRAWING/PAINTING

ART 123 Introduction to Painting (3) Theory and practice of painting; material and technical procedures. Pre: 113 or consent. DA

ART 213 Intermediate Drawing (3) Extension of the observational foundation established in 113 to address contemporary conceptual and expressive approaches to drawing. Pre: 113 or consent. DA

ART 214 Introduction to Life Drawing (3) Investigations include anatomical construction, light, space, diagramatic analysis, and thematic content. Pre: 113 or consent. DA

ART 223 Intermediate Painting (3) Extension of the observational foundation established in 123 to address contemporary conceptual and expressive approaches to painting. Pre: 113 and 123. DA

ART 225 Painting/Water-Based Media (3) An introduction to water-based media. Traditional transparent color, gouache and acrylics. Pre: 113 or consent. DA

ART 313 Advanced Drawing (3) Studio practice in drawing emphasizing contemporary developments in art. Repeatable one time. Pre: 213 or consent. DA

ART 314 Intermediate Life Drawing (3) Further investigations of the figure concerning anatomical and diagramatic construction, light, space, and thematic content. Pre: 214 or consent. DA

ART 320 Chinese Brush Art (3) Brush techniques in classical painting and calligraphy; studio course. Repeatable one time. Pre: 113 or consent. 225 is recommended. DA

ART 321 Materials and Techniques of Painting (3) Experiments with various traditional and contemporary materials and procedures; discussion of their influences on painting. Pre: 123, 175, and 176; or consent. DA

ART 322 Advanced Color (3) Theory and application of color as related to studio practice. Pre: 123 or consent. DA

ART 323 Advanced Painting I (3) Studio practice in painting emphasizing contemporary developments in art. Repeatable one time. Pre: 223 or consent. DA

ART 324 Painting from Life (3) Painting from the model; a survey of the figurative tradition. Repeatable one time. Pre: 123 and 214. DA

ART 414 Advanced Drawing from Life (3) Study of the figure with emphasis on the expressive function of drawing. Repeatable one time. Pre: 314 or consent. DA

ART 423 Advanced Drawing/Painting II (3) Development of greater formal means and aesthetic insight, emphasizing independent development. Required for BFA capstone in painting. Repeatable one time. Pre: 313 and 314 or 323 and 324 with a B (not B-) or better; or consent. DA

ELECTRONIC ARTS

ART 201 Introduction to Electronic Arts (3) Theory and practice course investigating language common to all arts activity particularly as related to the contemporary arts. Pre: any studio art course; or consent. DA

ART 301 (Alpha) Electronic Arts Studio (3) (6 Lec/Lab) Combined theory and practice studio course(s) that investigate language, processes, and personalized composing systems related to the use of technological media and its application to a variety of contemporary art areas and related disciplines. (B) imaging systems; (C) sound; (D) interactive systems. Pre: 201 and one 200-level studio; or consent. DA

ART 401 Advanced Electronic Arts Studio (3) Tutorial studios that encourages exploration in combined and new media through independent work within an environment of theoretical and critical discourse. Repeatable one time. Pre: 301 or consent. DA

FIBER

ART 103 Introduction to Fiber Arts (3) Broad-based studio exploration of materials, techniques, concepts in contemporary fiber art. May include surface patterning/manipulation, papermaking, woven, other 2D/3D handmade techniques. Focus on creative problem solving, experimentation in a cooperative studio setting. DA

ART 237 Woven Structures (3) Structured studio exploration of creative potential of working with threads under tension. In-depth introduction to a variety of traditional and experimental processes/materials. Tradition of pattern weaving to experimental woven forms. A-F only. Pre: one of 103, 116; or consent. DA

ART 258 Fiber Forms (3) In-depth studio exploration of non-loom fiber techniques for creating/manipulating 2D and 3D forms. Emphasis on concept development, skill mastery, innovative application of materials/techniques. May include felting, knotting, netting, piecing, coiling, found object/sewn constructions, papermaking. A-F only. Pre: one of 103, 116; or consent. DA

ART 335 Papermaking (3) Studio emphasis on handmade papermaking techniques, conceptual exploration in two and three dimensions. Repeatable one time. A-F only. Pre: one fiber course or one of 104, 113, 116; or consent. DA

ART 336 Wearable Art—Body and Material (3) Studio exploration of clothing as art form and the body as living armature and performance. Emphasis on development of concept, skill, collaborative and individual voice through material investigation, research, discussions, lectures, individual and group

Key to symbols & abbreviations: see the first page of this section.
projects. Repeatable one time. A-F only. Pre: one 200-level fiber course, or 116 and one 200-level studio course; or consent. DA

ART 337 Fiber Sculpture—Endurance and Impermanence (3) Studio exploration in contemporary dimensional fiber using both conventional and non-conventional materials and processes. Emphasis on concept development, sensitivity to the evocative potential of materials, context, surface treatment and its relationship to the studio and structure. Repeatable one time. A-F only. Pre: one 200-level fiber course or 116 and one 200-level studio course; or consent. DA

ART 339 Designing Surface (3) In-depth studio exploration of fiber techniques for patterning and manipulating cloth and other related experimental surfaces. Education through exploration through experimentation with traditional fiber patterning techniques such as dyeing, resists, direct printing, embellishment drawing with thread and piercing. Group and individual projects. A-F only. Pre: 113 and 116; or consent. DA

ART 437 Textile Conservation/Research (V) Independent study of textile conservation and research. Individualized directed work (internship/practicum) in the museum environment. Repeatable up to twelve credits. A-F only. Pre: two 200-level or above fiber courses, and consent.

ART 438 Applied Fiber History (3) Investigation of historical and contemporary fibers as an art form with direct studio experience in basic and related fiber processes and concepts. Includes lectures, discussions, demonstration, and individual and collaborative studio projects. Pre: 175 and 176 and one 200-level studio course; or consent.

ART 439 Installation/Performance—Material in Context (3) Studio investigation of the definition/transformation of space through artist intervention. Emphasis on the evocative potential of materials in context (physical, social, political, psychological) as well as the experimental based interventions. Repeatable one time. A-F only. Pre: two 200-level or above studio courses, or consent. DA

GLASS

ART 130 Introduction to Glass (3) Basic techniques of working with cold and molten glass. Theory of glass studio operation and introduction to glass theory. DA

ART 230 Glass Casting: Sand and Metal Molds (3) Expressive explorations in glass casting with wet sand, bonded sand, and metal molds. Repeatable one time. Pre: 116 (or concurrent) and 130; or consent. DA

ART 234 Cold Glass Fabrication (3) Expressive explorations using architectural sheet glass. Development of 2D and 3D forms using engraving, sand-blasting, and cold fabrication techniques. Repeatable one time. Pre: 113 (or concurrent), 116 (or concurrent), and 130; or consent. DA

ART 303 Kiln-Formed Glass (3) Expressive explorations in the use of kiln-formed, fusible-sheet glasses and enameling on glass. Repeatable one time. Pre: 234 or consent. DA

ART 306 LOST Wax Glass Casting (3) Glass kiln casting techniques, lost wax fuse casting, pâte de verre. Repeatable one time. Pre: 230 and either 254 or 356; or consent. DA

ART 330 Advanced Glass (3) Glass as an expressive medium. Individual problems; construction of studio equipment. Readings and discussions of contemporary glass issues. Repeatable one time. Pre: 230 and either 254 or 356; or consent. DA

GRAPHIC DESIGN

ART 265 Design: Studio I (1) Beginning instruction in the Macintosh computer environment, including hardware, software, and lab networking as it relates to graphic design production. ART 176 is recommended as a prerequisite. CR/NC only. Pre: 113 or consent. Co-requisite: 265L and 266.

ART 266 Design: Typography I (3) Introduction to typography. Exploration of letterform and word compositions in the context of single-page structures. ART 176 is recommended as a prerequisite. A-F only. Pre: 113 or consent. Co-requisite: 265 and 265L.


ART 365L Design: Studio II Lab (1) Intermediate instruction in the computer use of graphic design software, and peripheral devices, including intermediate layout. Introduction to graphic design industry standard multi-media and web design programs. CR/NC only. Pre: 265, 265L, and 266; or consent. Co-requisite: 365L.


ART 466 Design: Typography III (3) Advanced typographic design. Exploration of 2D, 3D, electronic, and interpersonal. Emphasis on contemporary typographic materials. A-F only. Pre: 365, 365L, and 366; or consent. DA

ART 467 Design: Production Techniques (3) Advanced techniques in design production from printed and digital media. A-F only. Pre: 465, 465L, and 466; or consent. DA

ART 467L Design: Production Techniques Lab (1) Advanced study of digital media for graphic designers. Focuses on skills and specific technical information to complement material covered in 467, CR/NC only. Pre: 465, 465L, and 466. Co-requisite: 467L. (Spring only)

ART 469 Design: Advanced Studio (3) Individual and team investigations of complex problems in graphic design. Emphasis on projects with actual clients (when available) and/or independent investigations addressing advanced and current questions in the graphic design field. A-F only. Pre: with a minimum grade of B- for 465 and 466 and credit for 465L. (Spring only)

PHOTOGRAPHY

ART 107 Introduction to Photography (3) Studio/lecture examining the major themes and issues in historical and current photographic production. Direct black and white darkroom experience. Students must have 35mm film-based camera with adjustable shutter speed, and 24x36 cm (13x13 inch) negative enlarger. DA

ART 207 Intermediate Photo: Black and White (3) History and principles of photography. Emphasis on aesthetic and critical analysis. Techniques covered include continuous light, strobe and handheld flash. Repeatable one time with consent. Pre: 202 and 207 with a minimum grade of B. DA

ART 308 (Alpha) Advanced Photographic Techniques (3) Emphasis on aesthetic and critical analysis. (B) color; (C) hand-applied emulsion. Repeatable one time with consent. Pre: 202 and 207 with a minimum grade of B. DA

Key to symbols & abbreviations: see the first page of this section.

PRINTMAKING

ART 104 Introduction to Printmaking (3) Foundation explorations in the processes of relief, intaglio, and stencil printmaking. Direct workshop studio experience in the basic techniques and concepts of woodcut, linoleum cut, drypoint, monotype, and basic stencil processes. DA

ART 215 Intaglio Printmaking (3) Studio practice in concepts and techniques of making prints from metal plates including etching, engraving, aquatint, and drypoint. Pre: 113, DA

ART 217 Screenprinting (3) Studio practice in screenprinting on paper. Copy camera and basic photo-stencil techniques introduced. Pre: 113, DA

ART 218 Relief Printmaking (3) Studio practice in the techniques and concepts of woodblock, linoleum cut, monotype, and calligraphic printmaking. Emphasis on both traditional and contemporary practices. Pre: 113, DA

ART 316 Lithography (3) Studio practice in concepts and techniques of making prints from lithographic limestone and plates. Pre: (with a minimum grade of B) 215 or 217 or 218. DA

ART 318 Intermediate Printmaking (3) Intermediate level specialization in either intaglio, lithography, screenprinting, or relief printmaking. Concentration on the techniques and formats of color printing and sequential image development. Repeatable two times. Pre: (with a minimum grade of B) two of 215, 217, 218, or 316. DA

SCULPTURE

ART 254 Sculpture—Metal Casting (3) Metal casting and development of associated practices and concepts. Repeatable one time. Pre: 116 or consent. DA

ART 255 Sculpture—Carving, Mixed Media (3) Investigations of traditional and contemporary carving concepts and methods. Repeatable one time. Pre: 116 or consent. DA

ART 351 Sculpture—Figure Modeling (3) Figure modeling, mold making, and casting. Repeatable one time. Pre: 116 or consent. DA

ART 352 Kinetic Sculpture (3) The design and construction of objects incorporating movement as an integral element of their content. Repeatable one time. Pre: 116 or consent. DA

ART 356 Sculpture—Metal Fabrication (3) Metal fabrication and development of associated practices, concepts, and historical references. Repeatable one time. Pre: 116 or consent. DA

ART 357 Sculpture—Small-Scale (3) Fabrication and casting of forms on a small scale such as jewelry. The development of related practices, concepts, and historical references. Repeatable one time. Pre: 116 or consent. DA

ART 358 Utilitarian Sculpture (3) The design and construction of objects intended for use/interaction. Emphasis on wood and synthetic materials. Repeatable one time. Pre: 116 or consent. DA

ART 359 Sculpture—Contemporary (3) Conceptualization of late 20th/early 21st century sculptural practice, including stylistic and theoretical frameworks, with references to influences of various historical Western and Asian traditions and applying this knowledge in the creation of sculpture. Pre: 116 and 176, or consent. DA

VARIABLE CREDIT AND OTHER COURSES

ART 360 Exhibition Design and Gallery Management (3) Design theory and techniques for presentation of artworks and mounting exhibitions. Pre: junior standing and consent. DA

ART 369 (Alpha) Study Abroad-Study Art (3) Intensive study of topics in studio art at a UW Mānoa-approved study abroad institution. (B) introductory; (C) upper-division. Repeatable one time per alpha. A-F only. Pre: consent. DA

ART 389 (Alpha) Study Abroad-Art History (3) Intensive study of advanced topics in art history at a UW Mānoa-approved study abroad institution. (B) introductory; (C) upper-division. Repeatable one time per alpha. A-F only. Pre: consent. DH

2015-2016 Courses 379
ART 399 Directed Work (V) Individual projects; tutorial. Maximum: 3 credit hours per semester; total 3 for BA, 6 for BFA. Pre: two 200-level or above art courses in area of directed work, as well as consent of instructor and department chair. ART 400 (Alpha) Special Topics (V) Intensive and specialized work at advanced level in fields of special interest of visiting or resident faculty; (B) studio art; (C) art history. Repeatable three times per alpha. Junior standing or higher and instructor consent only. ART 405 Professional Practice in the Arts: Creative, Career, and Leadership (3) Examination of the role of the artist in society, the artist as self, as community member, as teacher. Professional Practice skills in the arts; professionalism, internship, fundraiser, budgeting, marketing, outreach, and media relations. ART majors only. Senior standing or graduate students only. A-F only. ART 409 Graduation Portfolio (0) Required graduation portfolio for BA Art History and Art Studio students. BA ART majors only. Undergraduate only. CR/NC only. To be taken during the semester prior to expected graduation. ART 410 BFA Capstone Seminar/Studio (5) In conjunction with the production of art for the BFA annual exhibitions; this seminar will examine, critique, and evaluate the student’s art within the context of contemporary art, professional practices, exhibition theory, and integrate theoretical and practical issues in the artist’s work. BFA majors only. A-F only. Pre: BFA major or consent. (Spring only) ART 481 Museum Interpretations (3) Studies the interpretive strategies and methods used by museums to communicate with visitors in museums, art galleries, historic sites, parks, and related places. Considers how interpretations contribute to cultural knowledge. Repeatable one time. Pre: consent. (Cross-listed as AMST 457) DH

GRADUATE STUDIOS

Studio concentrations for the Master of Fine Arts degree: ceramics, electronic arts, glass, fiber, painting, photography, printmaking, and sculpture. Four sequential course levels (611-614) are to be taken for the MFA degree in Art. ART 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent. ART 611 Graduate Studio Seminar in Art I (6) Selected topics in art. Emphasis on theoretical analysis, diversification of research, and the exploration of new directions of creative inquiry. ART majors only. A-F only. Pre: consent. (Fall only) ART 612 Graduate Studio Seminar in Art II (6) Selected topics in art. Emphasis on the analysis of the systems by which art is created and the ability to define the development direction and related research. ART majors only. A-F only. Pre: 611 or consent. (Spring only) ART 613 Graduate Studio Seminar in Art III (6) Selected topics in art. Emphasis on the development of critical analysis and the understanding of one’s position relative to the contemporary art world. ART majors only. A-F only. Pre: 612 or consent. (Fall only) ART 614 Graduate Studio Seminar in Art IV (6) Selected topics in art. Emphasis on the convergence of one’s studio practice and the refinement necessary to the preparation for entrance into thesis. ART majors only. A-F only. Pre: 613 or consent. (Spring only) ART 630 Graduate Studio Teaching Practicum (3) Observation, analysis and participation in teaching a lower division course under the direction of an instructor in the student’s area of concentration. Repeatable one time. Pre: consent of instructor and department chair. ART 700 Thesis Research (V) Repeatable unlimited times. Key to symbols & abbreviations: see the first page of this section.

Arts and Sciences (CAS)
College of Arts and Sciences

CAS 099 International Exchange (V) Designed for student and faculty participation in an international exchange program while enrolled at UH Mānoa. CR/NC only. Pre: Admission to an international exchange program. CAS 101 Using Information Critically (3) Concepts and skills for effective information seeking, evaluation, and use in context of information technology and libraries. Research framework structures activities involving fiction, film, scholarly studies, writing, oral presentation; original research is culminating project. A-F only. CAS 102 RAP Foundation Course (3) Focus on communication and research skills. Multilevel work with technology, community service, linking with K-12 students, creation of museum exhibits. A-F only. Open only to RAP students. CAS 110 Integrating Seminar I (1) An introduction to the university community; topics include critical thinking, the value of higher education, cultural and transition issues. A-F only. CAS 111 Integrating Seminar II (1) Through the use of a unifying theme, students explore linkages with academic disciplines represented in Freshman Learning Communities. Theme examples: diversity, epistemology. A-F only. (Spring only) CAS 200 (Alpha) Scholar Seminar I (1) Discussion-based seminar led by senior faculty/administrator. Students meet with instructor for 1 hour once a week. Freshmen may take up to three alphas. CAS 301 ACE Mentoring: Facilitating Student Development (4) Theoretical foundations in student learning and holistic development. Practical leadership skills in acquisition and application through the facilitation of a seminar for new freshmen. Repeatable one time. A-F only. Pre: consent. (Fall only)

Asian Studies (ASAN)

School of Pacific and Asian Studies

ASAN 201 Introduction to Asian Studies: Asia (3) Understanding East Asia through multidisciplinary approaches. Examines the interrelationship of policies, economy, literature, religion, the arts, and history as the basis for such an understanding. DH ASAN 202 Introductory Asian Studies: South/Southeast Asia (3) Understanding South and Southeast Asia through multidisciplinary approaches. Examines the interrelationship of policies, economy, literature, religion, the arts, and history as the basis for such an understanding. DH ASAN 308 Chinese Political Economy (3) Interdisciplinary review and analysis of the social and political issues in contemporary China, the interchange between state and society in national policies, the relationship between cultural tradition and technological modernization in the social transformation process. A-F only. Pre: sophomore standing or higher, or consent. (Cross-listed as POLS 308) DH ASAN 310 Asian Humanities (3) Multidisciplinary classics of literature, philosophy, and religion shaping Asian beliefs and values. Pre: 201 and 202, or consent. DH ASAN 312 Contemporary Asian Civilization (3) Multidisciplinary examination of problems and issues affecting peoples and institutions of contemporary Asia: ethnic, language, religious, and cultural differences; population growth; public health; economic development; political and social change; environmental problems; etc. Pre: 201 and 202, or consent. DH ASAN 320 (Alpha) Asian Nation Studies (3) Multidisciplinary examination of major Asian countries: cultural, social, economic, and political lives of their peoples. (C) China; (I) South Asia; (J) Japan; (K) Korea; (O) Okinawa; (Z) Southeast Asia; (O) Other. Pre: 201 and 202, or consent. Repeatable three times in different alphas. DH ASAN 323 The Way of Tea in Japanese History and Culture (3) History and culture of Japan as revealed in study and practice of tea ceremony: Zen, aesthetics, calligraphy, architecture, ceramics, gardens, politics. (Cross-listed as HIST 323) DH ASAN 324 Chado-the Way of Tea Practicum (2) Actual practice of the tea ceremony as history and culture of Japan. Repeatable one time. Pre: 323 (or concurrent), HIST 323 (or concurrent), or consent. DA ASAN 325 (Alpha) Japanese Film: Art and History (3) Study and analysis of Japanese film; its history and relationship to cultural, social, philosophical, and aesthetic contexts. (B) 1900-1960; (C) 1960-present; (D) special topics. Pre: upper division standing or consent. (Cross-listed as EALL 325) DH ASAN 330 Chinese Film: Art and History (3) Study and analysis of Chinese film; its history and relationship to cultural, social, philosophical, and aesthetic contexts. Pre: 201 and 202, or consent. (Cross-listed as EALL 330) DH ASAN 356 Geography of Southeast Asia (3) An investigation of the development context of Southeast Asia including socioeconomic, cultural, and environmental resources. Problems and prospects for change. (Cross-listed as GEOG 356) DS ASAN 360 Buddhist Philosophy (3) Survey of central thinkers and schools of Buddhist philosophy. (D) special topics. Pre: upper division standing or consent. (Cross-listed as PHIL 360) DH ASAN 361 Southeast Asian Literature in Translation (3) Survey in English traditional and modern literatures of Southeast Asia. A-F only. (Cross-listed as IF 361) DL ASAN 364 20th-Century Chinese Women Writers (3) A survey and critical examination of contemporary Chinese women writers from China, Taiwan, and Hong Kong. Traces a genealogy of women’s writing from the early 1900s up through novels, poetry, drama, and film. Pre: one DH or DL course, or consent. (Cross-listed as EALL 364 and WS 346) DL ASAN 393 (Alpha) Field Study in Asia (3) Students may submit proposals to have academic coursework, field research, or work experience in Asia. See specific center for guidelines and procedures. (C) China; (I) South Asia; (J) Japan; (K) Korea; (O) Philippines; (Z) Southeast Asia; (O) Other. Repeatable one time. ASAN 406 Modern Philippines (3) Survey of major developments from pre-colonial through Spanish and American colonial periods, the revolution, Japanese occupation, and post-war republic. (Cross-listed as HIST 406) DH ASAN 410 Gender and Politics in U.S.-Okinawa Relations (3) Examines gender in Okinawa in relation to historical dynamics in the Asia-Pacific region with attention to issues such as militarism and violence, colonialism and memory, and tourism and commodification of indigenous culture. A-F only. Pre: WS 151 or consent. (Cross-listed as WS 410) ASAN 442 Globalization and Identity in the Himalayas (3) Examines the influence of local culture and global flows on identity formation in the Himalayan region. Topics include: Hindu caste and gender, constructions of ethnicity, Tibetans and tourists, Sherpas and mountaineers, development ideologies, and commodification of identity. A-F only. Pre: 202 or ANTH 152 or 425 or consent. (Alt. years: fall) (Cross-listed as ANTH 442) DS ASAN 462 Contested Issues in Contemporary Japan (3) Familiarizes students with public discourse in Japan by analyzing key issues that are currently debated in the Japanese media and in public forums in light of their political, historical, cultural, social and economic contexts. A-F only. Pre: 201, 202, 320, 330, 340, 484, ECON 317, POLS 307H, SOC 357, or upper level undergraduate standing; or consent. DS ASAN 463 Gender Issues in Asian Society (3) Construction of gender identities in contemporary Asia. How do they play out in gendered social difference and inequality (e.g., with class, religion, ethnicity). Pre: 201 and 202, or any WS course; or consent. (Cross-listed as WS 463) DS
ASAN 464 J-pop, J-rock, and Idols: Japanese Popular Music and Society (3) Examines modern Japan through popular music. Examines genres from early modern Japanese music, to postwar enka and idol groups, up to today’s J-pop and J-rock. A-F only. (Summer only.)

ASAN 465 Japan Cool: Anime, Manga, and Film (3) Focus on the world of Japanese anime, manga, and films. What can one learn about Japan from these genres? Focus on issues of gender, national identity, and race. A-F only. (Summer only.)

ASAN 469 Ethnic Diversity in China (3) Surveying Tibetans, Mongols, Manchus, Muslims, and other minorities, as well as analyzing the nature of minority/identity identity in China from an anthropological perspective. Pr: 201 or 202, or consent. DS

ASAN 470 Sustainable Development in East Asia (3) Interdisciplinary investigation of development in East Asia is an urgent issue. Status and role of Asian business; current technological, economic, and financial developments; impact on world economy. Pr: 201, 312, or BUS 314; or consent. (Cross-listed as FIN 470)

ASAN 473 Chinese Diaspora and Visual Culture (3) Examines films focusing on the social relationships and cultural practices of the Chinese diaspora, i.e. Chinese communities living outside China (e.g. Taiwan, Hong Kong, Southeast Asia, North America, and France). Film discussions in class, readings on visual culture, media studies, and film criticism. Course material will also include theater productions, art exhibits, and other visual material depending on availability. Pr: any 300- or 400-level DL or DH course. (Cross-listed as EALL 473) DH

ASAN 474 Transnational Chinese Popular Culture (3) Survey of contemporary Chinese popular entertainers and forms, from the past in the past and appreciated transnationally. Examples include martial arts genres, kung fu films, commercial novels, ballroom dancing, karaoke culture, music videos and rock music. Material will be selected based upon availability and readings will include critical essays from the fields of popular culture, media studies, and literary criticism. Pr: any 300- or 400-level DL or DH course. (Cross-listed as EALL 474) DH

ASAN 478 Music Cultures: India (3) Approaches the cultural study of music and performance through a specific focus on South Asia. Pr: junior standing or consent. (Cross-listed as MUS 478H)

ASAN 480 Culture and Economy of Southeast Asia (3) An exploration of the cultural and economic development of the countries of Southeast Asia from early times to the present day, with an emphasis on the effects of outside influences. Pr: 201 and 202, or consent. DH

ASAN 485 Contemporary Chinese Development (3) Development and planning in contemporary China: economic policy and institutional structure in the development and urbanization process; urban and rural transformation in a socialist economy. Pr: upper division standing or consent. DS

ASAN 491 (Alpha) Topics in Asian Studies (3) Selected topics in Asian studies. (B) Buddhist studies: (C) China; (G) Asia; (I) South Asia; (J) Japan; (K) Korea; (P) Philippines; (S) Southeast Asia; (Z) Other. Pr: 201 or 202, or consent. Repeatable two times. DS

ASAN 492 Women and Revolution (3) Conditions under which women’s activism and participation in protest and revolutionary movements developed in the 19th- and 20th-centuries. Cross-cultural comparisons. (Cross-listed as HIST 492 and WS 492) DH

ASAN 493 Globalization in Asia (3) Globalization affects the economic, political, and cultural lives of people in Asia. Transformations by capitalism in agricultural and industrial sectors of contemporary societies. Perspective is historical and global; approach is interdisciplinary. Repeatable two times. Pr: 201 and 202, or consent. DS

ASAN 495 Encountering Tourism in Asian-Pacific Societies (3) A critical examination and current impact of tourism on contemporary Asian and Pacific Island societies. Topics include colonial antecedents, social impacts, cultural and environmental concerns, case studies (including Hawaii). Pr: 201 or 202, or consent. (Cross-listed as PACS 495) DS

ASAN 496 Religions of Island Southeast Asia (3) A comparative, interdisciplinary examination of indigenous religions, Christian, and Hinduism in island Southeast Asia, and how they have been adjusted because of economic and social change. Pr: 201 and 202, or consent. DH

ASAN 499 Directed Reading (V) Repeatable three times. Pr: consent. ASAN 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Repeatable six times. Pr: master’s Plan B or C candidate and consent. ASAN 501 Practicum in Asian Studies (V) Repeatable two times (for a maximum of three times) with consent.

ASAN 600 Asian Studies Seminar: Scope and Methods (3) Scope of Asian studies as a field; contributions of major disciplines to study of Asia; resources and methods of research; preparation of research paper. (C) China; (D) South Asia; (I) Japan; (K) Korea; (P) Philippines; (S) Southeast Asia. Pr: graduate standing.

ASAN 608 Politics and Development: China (3) Consists of three parts: key theories for socialist transition as basis for seminar discussion, policy evolution to illustrate the emerging and prominent current development and practice. Pr: one of 600, POLS 308, or POLS 341; or consent. (Cross-listed as POLS 645C and PLAN 608)

ASAN 611 Comparative Muslim Societies in Asia (3) Will compare and contrast cultures in Asia with each other and with the so-called “core” Middle Eastern Muslim societies. Pr: 600 or consent.

ASAN 612 Topics in 20th Century Chinese Literary and Cultural Studies (3) Critical scholarship in Chinese literature and cultural studies, broadly defined to include the People’s Republic of China, Taiwan, Hong Kong, and others. Reading knowledge of Chinese desirable but not required. Repeatable one time with consent. Pr: consent. (Cross-listed as EALL 611)

ASAN 620 Problems/Issues of Contemporary Asia (3) Analysis from multidisciplinary perspective: rural development, urban development, international relations, ethnicity, religion, language, etc. Repeatable one time with different topics. Pr: 312 or consent.

ASAN 623 Gender in Asian Performing Arts (3) Performance is a rich site for gender construction, critique, and articulation in Asia. This seminar examines gender reflected in traditional music, dance, and theatre, including character role and performer persona; approaches of performance and culture studies, and an “Asian way.” A-F only. (Once a year)

ASAN 624 Culture and Colonialism (3) Analysis of cultural forms in modern and colonial contexts. Pr: consent. (Cross-listed as PLAN 625 through 655)

ASAN 651 East Asia Now (3) Views East Asia as an interactive region. Examines common historical and cultural, economic and political themes including various experiences with the West. Focus upon present state of the region. A-F only. Pr: 310, 312; or consent.

ASAN 652 Contemporary Japanese Studies Seminar (3) Selected human and physical features that represent economic, social, and political life. Pr: consent. (Cross-listed as JPN 652)

ASAN 653 Major Authors in Modern Korean Literature (3) Advanced study of major Korean fiction writers from the 1910s to the present with emphasis on critical reading of their lives and writings to arrive at informed appraisal of their contribution to modern Korean literature. Repeatable one time. Pr: KOR 494 or consent.

ASAN 664 Topics and Issues in Modern Korean Literature (3) Intensive study of selected topics and issues in modern/contemporary Korean fiction, focusing on texts that problematize critical socioeconomic issues in the evolving contexts of modern Korean intellectual history. Repeatable one time. Pr: KOR 494 or consent.

ASAN 671 The Splendor that was Southeast Asia (3) Interdisciplinary examination of the classical civilizations of Southeast Asia, the 9th to 14th centuries. Includes Pagan, Sukhothai, Angkor, Dai Viet, Srivijaya, and Majapahit. Considers historical themes and patterns, issues in Southeast Asian studies. A-F only. Pr: 310, 312; or consent.

ASAN 686 Law and Society in China (V) Overview of the historical foundations of Chinese law and introduction to the present legal system in the People’s Republic of China. Repeatable one time. (Cross-listed as WPVA 586)

ASAN 688 China’s International Relations (3) Examination of China’s rise and world view, review of China’s regional relations, China and U.S. relations, formation of a new world order. Pr: 600, 608, or POLS 645C, or consent.

ASAN 694 Topics in Buddhist Studies (3) Seminar on selected topics in Buddhist studies. Repeatable
Astronomy (ASTR)

College of Natural Sciences

Credit not given for more than one of 110, 120, and 140. Credit not given to 140. A grade of C (not C-) or better is required for all prerequisites.

ASTR 110 Survey of Astronomy (3) Introduction to the astronomical universe: sky and celestial objects, planetary motion, planets and the Solar System, Sun and stars, the Milky Way and galaxies, cosmology and the universe. Offered in the evening: Pre: 110 (or concurrent), or consent. DY

ASTR 110L Survey of Astronomy Laboratory (1) Observations of constellations and the night sky, the sun and moon, planets, stars, and deep-sky objects; laboratory observations and experiments illustrating basic concepts in astronomy. Offered in the evening: Pre: 110 (or concurrent), or consent. DP

ASTR 120 Astronomical Origins (3) Formation of the sun and stars; origin of our solar system; formation and evolution of galaxies, including the Milky Way Galaxy; origin of chemical elements, and the beginnings of the cosmos. A-F only. DP

ASTR 130 Introduction to Archaeoastronomy (3) Astronomy and celestial lore in ancient cultures: Neolithic Europe, Mayan, Mesoamerican, Egyptian, Mesopotamian, American Indian, Chinese, and Polynesian. Concepts of the cosmos, calendars, eclipse predictions, motion of celestial bodies, and navigation. Construction of simple observing tools. DP

ASTR 140 History of Astronomy (3) Covers the major discoveries and advancements in astronomy from the Babylonians through the 20th century, and the evolution of modern astrophysics. A-F only. (Fall only) DP

ASTR 150 Voyage through the Solar System (3) An illustrated voyage through the Solar System based on recent scientific results. The class highlights the origin, evolution, and current knowledge of the eight planets, their moons, asteroids, comets, and one star, the Sun. Field trips to the Big Bear Solar observatory (if time permits) and Griffith Observatory. Pre: PHYS 105 or consent. DP

ASTR 210 Foundations of Astronomy (3) A rigorous overview of modern astronomy: solar system, stellar, galactic and extragalactic astronomy and cosmology. For science and engineering students. Pre: PHYS 151 or consent. DP

ASTR 241 Foundations of Astrophysics I: The Solar System (3) Solar system astrophysics. Dynamics of planets, satellite systems, asteroids and comets; internal and atmospheric structure of terrestrial and giant planets; the Sun as a star; the Sun as a star. A-F only. Pre: PHYS 170, MATH 242 or 252A, and PHYS 272 (or concurrent). (Fall only) DP

ASTR 242 Foundations of Astrophysics II: Galaxies and Stars (3) Astrophysics of galaxies and stars: Galactic structure and dynamics; active nuclei; galaxies and stars (3) Astrophysics of galaxies and stellar, galactic and extragalactic astronomy and cosmology. Pre: PHYS 170, MATH 242 or 252A, and PHYS 272 (or concurrent). (Spring only) DP

ASTR 280 Evolution of the Universe (3) The Big Bang, origin of the universe, formation and evolution of galaxies and stars. Pre: any introductory astronomy or physics course, or consent. DP

ASTR 281 Astrobiology (3) Are we alone in the universe? Modern astronomical, biological, and geological perspectives on the question. Searches for life on Mars, oceans on Europa, planets orbiting other stars. Space exploration and colonies, interstellar spaceflight and communication. Pre: 110 or 240, or consent. DP

ASTR 300 Observational Astronomy (3) Principles and techniques of optical and near-infrared observational astronomy. Astronomical coordinate systems. Telescopes, cameras, spectrographs, and detectors. Astrometry, photometry, and spectroscopy of astronomical objects. A-F only. Pre: 240 or 242; PHYS 152 or 274; MATH 215, 241, or 251A. (Fall only) DP

ASTR 300L Observational Astronomy Laboratory (2) Optical and near-infrared astronomy laboratory. Error analysis, properties of light, data, and image processing. Astrometric, photometric, and spectroscopic measurement. A-F only. Pre: 300 (or concurrent); PHYS 152 or 274; PHYS 152L or 274L; MATH 210 of the elements. (Fall only) DP

ASTR 301 Observational Astronomy Projects (4) Practical observational astronomy. Students select objects to study, plan, and conduct remote observations using research-grade telescopes, reduce data, present results in written and verbal form. Introduces LaTeX, literature research, time allocation. A-F only. Pre: 300 and 300L. (Spring only) DY

ASTR 320 Astronomical Spectroscopy (3) Introduction to astronomical spectroscopy. Stellar atmospheres, line formation, and radiative transfer. Phases of intermediate stellar. Emission line diagnostics. Doppler shift and kinematics. A-F only. Pre: 240 or 242; PHYS 152 or 274; MATH 216 or 242 or 252A. (Spring only) DP

ASTR 380 The Cosmos in Western Culture (3) History and intellectual context of astronomical discovery; the evolution of ideas of space, time, and motion from the Babylonians to relativistic cosmologies; emphasis on the interaction of astronomy with the history of ideas. Pre: 110 (or concurrent). (Spring only)

ASTR 389 Directed Study (V) Individual reading, observation, or experimentation in astronomy and astrophysics. Repeatable four times. Pre: consent. DP

ASTR 423 Stellar Astrophysics (3) Calculus-based introduction to stars, including: application of astrophysics, photometry, and spectroscopy to determine fundamental stellar properties; stellar structure and evolution of single and binary stars; astrophysical distance determination methods; stellar nucleosynthesis. Pre: 242 and 300, and PHYS 480 (or concurrent). DP

ASTR 427 Cosmology (3) Structure, history, and composition of the universe; the Big Bang; formation and evolution of the universe; observation and modeling of large-scale structure; cosmological models. Given concurrently with 627. Pre: PHYS 274 or consent. (Alt. years: spring) DP

ASTR 430 The Solar System (3) Observations and physical nature of planets and moons, asteroids, comets, and other small bodies; formation of the Solar System; discovery of other planetary systems; solar activity. Given concurrently with 630. Pre: PHYS 170 or consent. (Alt. years: spring) DP

ASTR 494 Senior Research Project (V) Research in observational, theoretical, or numerical astronomy or astronomical instrumentation development, supervised by an Institute for Astronomy faculty member. Alternatively, research combining astronomy with additional fields of interest, including: course work in an additional field. Significant written products required. Repeatable one time, up to eight credits. A-F only. Pre: 301.

Key to symbols & abbreviations: see the first page of this section.
habitability. Repeatable three times. Pre: graduate level sciences and ideas, or consent.

**ASTR 777 Star Formation (2)** Molecular clouds, collapse processes, physics of circumstellar disks and accretion, properties of young stars, outflows and jets, formation of binaries, extragalactic planets and planet formation, meteors and the early solar system. Pre: graduate standing or consent. (Alt. years: spring)

**ASTR 800 Dissertation Research (V)** Repeatable unlimited times.

**Atmospheric Sciences (ATMO)**

**School of Ocean and Earth Science and Technology (See Meteorology (MET) for Fall. Effective Spring 2016, changes to ATMO.)**

**Biochemistry (BIOC)**

**School of Medicine**

Adequate preparation in chemistry (through physical chemistry), physics, and mathematics is required, and a background in biological sciences is desirable. The minimum grade required for undergraduate prerequisites is a D or better, and graduate prerequisites is a C (not C-) or better.

**BIOC 241 Fundamentals of Biochemistry (3)** Biological chemistry stressing integration of concepts of general, inorganic, and organic biochemistry and application to life chemistry. Pre: beginning algebra and high school science. DP

**BIOC 341 Elements of Biochemistry (3)** Biochemical principles and concepts as applied to living systems, including sufficient organic chemistry to understand these principles. Pre: 241 or consent. DP

**BIOC 441 Basic Biochemistry (4)** Function and composition of biological substances and their metabolic transformation in animals, plants, microorganisms. Pre: BIOL 275 and CHEM 273 with a D grade; or consent. DB

**BIOC 441L. Basic Biochemistry Lab (1)** Experiments working with substances discussed in 441. DY

**BIOC 481 Introduction to Molecular Biology (3)** Biological basis of life presented in terms of the structure and function of the gene in the production of biological catalysts. Pre: 441 or consent. DB

**BIOC 499 Directed Research and Reading (V)** Independent research or selected reading of current literature in the area of biochemistry and biophysics. Repeatable unlimited times. Pre: consent.

**BIOC 500 Master’s Plan B/C Studies (1)** Repeatable unlimited times. Pre: consent. DB

**BIOC 595 Highlights of Organ-system Biochemistry (2)** Introduction to applications in biological engineering (V) Discussion and investigation of special topics, problems and applications of biological engineering. Pre: consent.

**BE 260 Mass and Energy Balances (3)** Introduction of the principles of mass and energy conservation; development of systematic approaches to apply these principles in calculations for design and analysis of biochemical, chemical, and physical processes. Pre: BIOL 171, CHEM 170, PHYS 170, and MATH 242 or 252A; or consent. DP


**BE 375 Transport Phenomena (3)** Fundamental principles and applications relating to mass, momentum, and energy transfer in biosystems and other systems for engineers and scientists. Pre: 260, CEE 270, MATH 245 or 252A. Co-requisite: CEE 320 and ME 311. DP

**BE 405 Engineering Economics (3)** Economic analysis in engineering and management decision-making, interest, depreciation, income tax, cost classification, break-even analysis, economic comparisons of alternatives, and computer-aided unit operations, process integration, and economic evaluation. A-F only. Pre: 373, or 437 (or concurrent) or 460 (or concurrent); or consent. (Alt. years)

**BE 481 Senior Engineering Design I (3)** (1-1 hr Lec, 2-3 hr Lab) First of a two-semester sequence that provides a major design experience for senior students in biosystems engineering. Design project; project management; design methods; modeling and simulation; design optimization; engineering economics; engineering statistics, initiation of an open-ended design project. Pre: 350/350L, 373, CEE 320 or ME 322; or consent. DP

**BE 470 Bioprocess Design and Analysis (3)** Combined lecture/computer lab on theory and practice of bioprocess design and analysis, involving biological basis and engineering principles of bioprocessing, computer-aided unit operations, process integration, and economic evaluation. A-F only. Pre: 373, or 437 (or concurrent) or 460 (or concurrent); or consent. (Alt. years)


**BE 431 Environmental Biotechnology (3)** Environmental impact and control; the micro-organism and its nutrition and growth conditions; microbial growth and substrate removal kinetics; bioreactors; biological treatment systems and designs for biodegradation of xenobiotic organic chemicals; case studies. A-F only. Pre: 373 or consent. (Spring only) DP

**BE 437 Biosystems Unit Operations (2)** Pumps and fans; size reduction; cleaning and sorting; matters handling; processing laws, nuts, vegetables, animals, and other bioproducts. Pre: 373, CEE 320 or ME 322; or consent. DP

**BE 440 Bioremediation: Principles and Practices (3)** (2 Lec, 1-3 hr Lab) Soil environment, fate and transport of contaminants; microbial ecology, metabolism, and energy production; biodegradation of selected compounds. In situ treatment, solid-phase bioremediation, slurry-phase bioremediation, and vapor-phase biological treatment. Open to nonmajors. Repeatable one time. Pre: 260, CHEM 161, PHYS 170; or consent. DP

**BE 460 Bioreactor Design and Analysis (3)** Application of mass/energy balances and reaction kinetics for the design and analysis of bioreactors for microbial, plant, and animal cell cultures. Pre: 373, CEE 320 or ME 322; or consent. DP

**BE 470 Bioprocess Design and Analysis (3)** Combined lecture/computer lab on theory and practice of bioprocess design and analysis, involving biological basis and engineering principles of bioprocessing, computer-aided unit operations, process integration, and economic evaluation. A-F only. Pre: 373, or 437 (or concurrent) or 460 (or concurrent); or consent. (Alt. years)

**BE 481 Senior Engineering Design I (3)** (1-1 hr Lec, 2-3 hr Lab) First of a two-semester sequence that provides a major design experience for senior students in biosystems engineering. Design project; project management; design methods; modeling and simulation; design optimization; engineering economics; engineering statistics, initiation of an open-ended design project. Pre: 350/350L, 373, CEE 320 or ME 322; or consent. DP
Biological (BIOL)

College of Natural Sciences

Courses for Non-Science Majors

BIOL 101 Biology and Society (3) Characteristics of science, historical development of scientific concepts, and interaction with society, illustrated by topics from biology.

BIOL 101L Biology and Society Laboratory (1) 1 (3-hr Lab) Lab experiments illustrating topics and methods in the biological sciences.

BIOL 104 Marine Option Program Seminar (1) Statewide overview of issues and organizations involved with marine activities, management, education, research, and business. Exploration of opportunities for internships, research projects, study and careers. Proposal writing, project implementation, and report preparation guidelines. Orientation to the Marine Option Program. (Cross-listed as IS 100)

BIOL 123 Hawaiian Environment (3) Characteristics of science and interaction with society illustrated by topics in geology, astronomy, oceanography, and biology of Hawaiian Islands.

BIOL 310 Environmental Issues (3) Global environmental problems in historical perspective.

Key to symbols & abbreviations: see the first page of this section.

physical, biological, sociocultural views. Pre: one of 101, 123, or GEOG 101; or consent. DB

BIOL 320 The Atoll (3) Arotav as ecosystem and as human environment. Formation, structure, distribution, biota. Pre: two semesters of introductory science, consent. DB

BIOL 340 Genetics, Evolution and Society (3) The role of genetics in evolution, medicine, behavior, plant and animal breeding and technology; its impact on today's society. Pre: one semester of biological science at college level or consent. (Cross-listed as CMB 351) DB

BIOL 350 Sex Differences in the Life Cycle (3) Human sex differences, their biological basis and significance: genetic, hormonal, and behavioral determinants; sexual differentiation; biology of gender, sexuality, parenting, menopause, and aging. Pre: one semester of biological science. (Cross-listed as WS 350) DB

BIOL 360 Island Ecosystems (3) Characteristics of island biota; examples from Hawai‘i and the Pacific. Impact of island and continental cultures; policy and ecosystem endangerment; contemporary legislation, policy, and management practices. Pre: one semester of biological science or consent. DB

BIOL 410 Human Role in Environmental Change (3) Human impacts through time on vegetation, animals, landforms, soils, climate, and atmosphere. Special reference to Asian/Pacific region. Implications of long-term environmental change for human habitats. Pre: CHEM 101 or 123 and either 310 or GEOG 326; or consent. (Cross-listed as GIOG 410) DB

BIOL 440 Psychoactive Drug Plants (3) Taxonomy, ecology, biochemistry, distribution, cultural history, and contemporary use of mind-altering drug plants; examples from primitive, traditional, and modern societies. Pre: junior standing, one semester of biological science, and either ANT H 200 or GEOG 151.

Courses for Life Science Majors

BIOL 171 Introduction to Biology I (3) Introduction to biology for all life science majors. Cell structure and chemistry; growth, reproduction, genetics, evolution, viruses, bacteria, and simple eukaryotes. Pre: CHEM (131, 151, 161, 171, or 181A) or consent, and BIOL 171L (or concurrent), or consent. DB

BIOL 171L Introduction to Biology I Lab (1) 1 (3-hr Lab) Laboratory to accompany 171. Pre: CHEM (131, 151, 161, 171, or 181A) or concurrent, and BIOL 171 (or concurrent) or consent. DB

BIOL 172 Introduction to Biology II (3) Anatomy, physiology, and systematics of plants and animals; behavior; ecosystems, populations, and communities. Pre: CHEM (131, 151, 161, 171, or 181A) or concurrent, and BIOL 172L (or concurrent), or consent. DB

BIOL 172L Introduction to Biology II Lab (1) 1 (3-hr Lab) Laboratory to accompany 172. Pre: CHEM (131, 151, 161, 171, or 181A) or concurrent, and BIOL 172 (or concurrent) or consent. DB

BIOL 265 Ecology and Evolutionary Biology (3) Principles of ecology and evolution for life science majors stressing integrated approach and recent advance. Pre: C (not C-) or better in 171/171L, 172/172L (or concurrent), and 265L (or concurrent). DB

BIOL 265L Ecology and Evolutionary Biology Lab (1) 1 (3-hr Lab) Laboratory to accompany 265. Pre: C (not C-) or better in 265 (or concurrent). DB

BIOL 275 Cell and Molecular Biology (3) Integrated cell and molecular biology for life science majors. Modern and traditional DNA technology. A-F only. Pre: C (not C-) or better in 171/171L and CHEM 272. DB

BIOL 275L Cell and Molecular Biology Lab (1) 1 (3-hr Lab) Laboratory for Cell and Molecular Biology. A-F only. Pre: BIOL 275 (or concurrent) and CHEM 272. DY

BIOL 295 Service Learning for Biology Majors (V) Directed participation on tutorials and related activities in public schools and approved community and UH Mānoa organizations. A-F only. Repeatable one time. Pre: 265/265L, 275/275L, and consent. DB

BIOL 301 Marine Ecology and Evolution (3) Functional, ecological, and evolutionary problems faced by life in the sea. Diversity of habitats, associated organisms, and processes of evolution relevant to marine habitats and associated communities, from the deep sea to the plankton. Impacts of overfishing, marine pollution, and land development on the ecology and evolution of marine organisms. Emphasis on developing problem solving and quantitative skills. A-F only. Pre: C (not C-) or better in 265/265L, 301L (or concurrent), and OCN 201; or consent. DB

BIOL 301L Marine Ecology and Evolution Lab (2) 1 (3-hr Lab) Laboratory to accompany 301. Pre: C (not C-) or better in 301 (or concurrent). DY

BIOL 304 Biotechnology: Science and Ethical Issues (3) Introduction to the concepts, goals, ethical issues and consequences of biotechnology using real-life examples. DNA fingerprinting, gene therapy and genetic engineering. Pre: 171 or consent. (Cross-listed as MBBE 304)

BIOL 331 Marine Mammal Biology (3) Overview of marine mammal science, significance and roles of marine mammals in their environment and conservation issues. Current research topics in marine mammal science will also be covered. Pre: C (not C-) or better in 171/171L, 172/172L, and 265/265L or consent. DB

BIOL 331L Marine Mammal Biology Lab (2) Laboratory to accompany 331. Activities will include taxonomy, anatomy, morphology, necropsy, hematology, population estimation methods, tracking, field distribution surveys, stranding response, and energetics, and/or similar depending on field access and availability of specimens. A-F only. Pre: C (not C-) or better in 171/171L and 172/172L and 265/265L and 331 (or concurrent), or consent. DY

BIOL 363 Biological Field Studies (V) Biological survey, collection, and analysis techniques will be reviewed and applied through field studies. Students will be introduced to the uniqueness of the Hawaiian environment and its diversity of life. Emphasis on diversity, evolution, ecology and biogeography. Repeatable up to six credits. Pre: C (not C-) or better in 265/265L (or equivalent), or consent. DB

BIOL 375 Genetics (3) Genetic concepts at advanced undergraduate level; genetic transmission, recombinations, gene action and distribution, and historical and evolutionary genetics. Pre: 275. DB

BIOL 375L Genetics Laboratory (2) 1 (4-hr Lab) Experiments with a variety of organisms to illustrate principles discussed in BIOL 375. Pre: 275/275L. 375 (or concurrent) or consent. DB

BIOL 390 Communicating in Biological Sciences (3) Combined lecture/lab impart essential knowledge and skills in technical writing, poster design, and oral presentations for effective communication for life science majors. Project proposal, conference presentations are covered. A-F only. Pre: C (not C-) or better in 171/171L, 172/172L, and ENG 100.

BIOL 395 Internship in Biology Teaching (2) Supervised field experience in the development and demonstration of laboratory experiments in selected laboratory courses. Repeatable one time. Pre: consent.

BIOL 400 Ocean Internships and Research (V) Students carry out marine-related internships, practica, research projects or field experience on or off-campus with faculty guidance. Repeatable one time. A-F only. Pre: minimum cum GPA of 2.5, junior standing, and in any field of study and IS 100/BIO 104 or consent, project proposal. (Cross-listed as IS 400)

BIOL 401 Molecular Biotechnology (3) General principles, applications, and recent advances of the rapidly growing science of biotechnology. Topics include impact of biotechnology on the environment, basic sciences, environment, agriculture, forensics, and economic and socio-ethical issues. Pre: C (not C-) or better in 275 or consent. (Cross-listed as MBBE 401) DB
Biol 402 Principles of Biochemistry (4) Molecular basis of living processes in bacteria, plants, and animals; emphasis on metabolism of carbohydrates, lipids, proteins, and nucleic acids. Prereq: C (not C-) or better in 275/275L and CHEM 273; or consent. (Cross-listed as MBBE 402 and PEPS 402) DB

Biol 403 Field Problems in Marine Biology (4) Integrated program of intensive lectures, laboratory experiments, and field research that focus on the biological processes that shape the lives of marine organisms. A-F only. Limited space; enrollment by consent; GPA considered. Prereq: C (not C-) or better in 301/301L and consent. DB

Biol 404 Advanced Topics in Marine Biology (3) Current themes in marine biology and expertise in scientific assessment. Repeatable two times. Mbio majors only. A-F only. Prereq: C (not C-) or better in 301/301L or consent. DB

Biol 407 Molecular Cell Biology I (3) Relationship between structure and function at macromolecular level. Prereq: C (not C-) or better in 275/275L and CHEM 273, or consent. (Cross-listed as MCB 407) DB

Biol 408 Molecular Cell Biology II (3) Cell structure and function. Structure, chemistry, and function of organelles and macromolecules. Prereq: C (not C-) or better in 407; or consent. (Cross-listed as MBBE 408 and MCB 408) DB

Biol 408L Advanced Molecular and Cellular Biology Laboratory (2) (2-3 hr Lab) A laboratory to accompany 407 or 408 (or concurrent). (Cross-listed as MCB 408L) DY

Biol 410 Human Role in Environmental Change (3) Human impacts through time on vegetation, animals, landforms, soils, climate, and atmosphere. Special emphasis on the specific region. Implications of long-term environmental change for human habitability. Prereq: one of 101, GEOG 101 or 123 and either 310 or GEOG 326; or consent. (Cross-listed as GEOG 410) DB

Biol 425 Wildlife and Plant Conservation (3) Principles of conservation biology and wildlife management practices, illustrated with animal, plant, and ecosystem examples. Examination of ethical, cultural, legal, political, and socio-economic issues impairing on conservation policy and practice. Group project and field trips. Prereq: C (not C-) or better in 265/265L or consent. DB

Biol 472 The Biology of Cancer (3) Integrative, in-depth focus on the genetics, cell biology, and molecular basis and target(s) of cancer. Combination of classroom lectures and problem-based discussions in small groups. Addresses ethical implications of cancer research and treatment. A-F only. MBio or Mbio majors only. Prereq: 407 (or concurrent) 408 (or concurrent) and 408 (or concurrent) or consent. (Spring only) (Cross-listed as MCB 472)

Biol 483 Introduction to Bioinformatics Topics for Biologists (3) Focuses on the use of computational tools and approaches to analyze the enormous amount of biological data (DNA, RNA, protein) available today. A-F only. Prereq: 171 (or equivalent), or consent. (Once a year) (Cross-listed as MBBE 483)

Biol 490 Mathematical Biology Seminar (1) Reports on mathematical biology, reviews of literature, and research presentation. Required for Certificate in Mathematical Biology. Repeatable one time. Prereq: junior standing or higher consent. (Cross-listed as MATH 490) DB

Biol 490T Biological Problems (V) Directed reading and research. For juniors and seniors majoring in life science 1-2 credits. Repeatable up to 9 credits, up to 6 credits apply towards BA and BS Biology major requirements. A-F only. Prereq: 2.5 GPA minimum, written proposal, and consent.


Biol 501 (Alpha) Biology Workshop for Science Teachers (V) Principles taught in a conceptual and/or hands-on manner either in a laboratory setting or in the field. (B) biotechnology; (C) ecology, evolution and conservation; (D) marine biology; (F) general biology. A-F only. Repeatable unlimited times. Prereq: 171/171L, 172/172L, in-service teachers; or consent.

Biol 603 Molecular Ecology (3) Practical introduction to molecular methods used to address ecological and evolutionary questions. Advanced undergraduate/graduate level. Focus on methods and application to independent research project. A-F only. Prereq: 265/265L (or equivalent) or 275/275L (or equivalent), and 375/375L, and consent. (Alt. years) See other science professional development courses NSCI 501, 502, 503, 504, 509, and 619 and 679 under the Natural Sciences (NSCI) course listing in this section of the Catalog.

Biomedical Sciences (BIOM)

School of Medicine

BIOM 499 Directed Research and Reading (V) To provide elective courses for undergraduates in the biomedical sciences specialties. Repeatable unlimited times.

BIOM 500 Master's Plan B/C Studies (1) Repeatable unlimited times.


BIOM 640 Clinical Research Methods (2) Instruction in developing clinical research questions and creating a concise protocol that includes a literature review, study design, subject recruitment and sampling, instruments, other measures and bioinformatics, sample size, consent form, budget and timetable. A-F only. Prereq: consent.

BIOM 641 Legal and Regulatory Issues and Bioethics (2) Ethical research initiatives and research ethics are identified and resolved in cases, research on human subjects regulation are discussed. Research misconduct is defined. Ethical considerations in protocol development and scientific review, study design, subject recruitment and sampling, instruments, other measures and bioinformatics, sample size, consent form, budget and timetable. A-F only. Prereq: consent.

BIOM 642 Applied Clinical Epidemiology and Biostatistics (3) Introductory epidemiologic and intermediate biostatistical methods are applied to clinical research. Genenetics of human diseases, explore molecular mechanisms of disease, explore molecular and clinical research. Pre: MBio or Mbio majors only. Prereq: 407 (or concurrent) and 408 (or concurrent) or consent. (Cross-listed as CMB 626)

BIOM 642 Applied Clinical Epidemiology and Biostatistics (3) Introductory epidemiologic and intermediate biostatistical methods are applied to clinical research. Genenetics of human diseases, explore molecular mechanisms of disease, explore molecular and clinical research. Pre: MBio or Mbio majors only. Prereq: 407 (or concurrent) and 408 (or concurrent) or consent. (Cross-listed as CMB 626)

BIOM 643 Applied Biostatistics (3) Combines a didactic approach to multivariable regression with hands-on analysis of a clinical dataset. Regression methods for normally distributed, binary and count data are applied to clinical data. A-F only. Prereq: 640 and consent.

BIOM 644 Bioanalytical Methods (2) Introduction to disease molecular genetics: methods to identify and map candidate genes, analysis of mutant, use of gene and protein expression, collection methods, preparation of specimens, and extraction of DNA and proteins. A-F only. Prereq: consent.

BIOM 645 Clinical Protocol Development (3) Provides training in proposal development. Governance structures of funding agencies; funding opportunities and decisions; review processes; NIH application and processes; reading RFAs; compliance issues; cultural sensitivity; and types of questions used to address issues from a unified yet flexible conceptual framework. Enhances research skills related to management and communication, health care quality assessment. Repeatable two times. A-F only.

BIOM 654 Molecular Genetics of Human Diseases (3) Present discoveries in the area of molecular genetics of human diseases, explore molecular mechanisms of pathophysiology and disease current concepts and innovative approaches in cardiovascular, neurodegenerative and skin disorders research. Prereq. consent.

BIOM 660 Mentored Research Practicum (V) Conduct research under the direction of a mentor. Participants will be responsible for submission of a proposal, acquisition of relevant training, conduct of the project. Repeatable five times or up to 12 credits. BIOM students only. A-F only.

BIOM 667 Advanced Biostatistics for Clinical Research (3) Current methods for analyzing longitudinal and clustered, clinical data through lectures, discussions, and a group analysis. Topic areas include multi-level, multi-state, multi-process, and structural equation models. A-F only. Prereq: 642 and 643, or consent.

BIOM 699 Directed Reading (V) Students may register on approval of department. CR/NC only. Repeatable unlimited times.


BIOM 701 Disasters and Pandemics: Medical and PH Management and Risk Communication (3) Assess impact on health in disasters and diseases. Enhances research skills related to management and communication. Repeatable one time. BIOM, PH, NURS, and SPA majors only. Prereq: consent.


Biophysics (BIOP)

School of Medicine

Adaptive preparation in chemistry (through physical chemistry, physics, and mathematics) is required, and a background in biological sciences is desirable. The minimum grade required for undergraduate prerequisites is A or better, and graduate prerequisites is C (not C-) or better.

Key to symbols & abbreviations: see the first page of this section.
### Botany (BOT)

**Botany of Native Hawaiian Plants** (3) 3 hr. Analysis of plants and their influence on culture and history. Strong emphasis on ethnobotany, rural and intellectual property. Undergraduate. A-F only. Consent. Spring only.

**Botany of Native Hawaiian Plants II** (4) 4 hr. Special topics in ethnobotany of Hawaiian taxa. Undergraduate. A-F only. Consent. Spring only.

**Botany of Native Hawaiian Plants III** (3) 3 hr. Special topics in ethnobotany of Hawaiian taxa. Undergraduate. A-F only. Consent. Spring only.

**Botany of Native Hawaiian Plants IV** (3) 3 hr. Special topics in ethnobotany of Hawaiian taxa. Undergraduate. A-F only. Consent. Spring only.

**Botany of Native Hawaiian Plants V** (3) 3 hr. Special topics in ethnobotany of Hawaiian taxa. Undergraduate. A-F only. Consent. Spring only.

**Botany of Native Hawaiian Plants VI** (3) 3 hr. Special topics in ethnobotany of Hawaiian taxa. Undergraduate. A-F only. Consent. Spring only.

**Botany of Native Hawaiian Plants VII** (3) 3 hr. Special topics in ethnobotany of Hawaiian taxa. Undergraduate. A-F only. Consent. Spring only.

**Botany of Native Hawaiian Plants VIII** (3) 3 hr. Special topics in ethnobotany of Hawaiian taxa. Undergraduate. A-F only. Consent. Spring only.

**Botany of Native Hawaiian Plants IX** (3) 3 hr. Special topics in ethnobotany of Hawaiian taxa. Undergraduate. A-F only. Consent. Spring only.

**Botany of Native Hawaiian Plants X** (3) 3 hr. Special topics in ethnobotany of Hawaiian taxa. Undergraduate. A-F only. Consent. Spring only.

**Botany of Native Hawaiian Plants XI** (3) 3 hr. Special topics in ethnobotany of Hawaiian taxa. Undergraduate. A-F only. Consent. Spring only.

**Botany of Native Hawaiian Plants XII** (3) 3 hr. Special topics in ethnobotany of Hawaiian taxa. Undergraduate. A-F only. Consent. Spring only.

**Botany of Native Hawaiian Plants XIII** (3) 3 hr. Special topics in ethnobotany of Hawaiian taxa. Undergraduate. A-F only. Consent. Spring only.

**Botany of Native Hawaiian Plants XIV** (3) 3 hr. Special topics in ethnobotany of Hawaiian taxa. Undergraduate. A-F only. Consent. Spring only.

**Botany of Native Hawaiian Plants XV** (3) 3 hr. Special topics in ethnobotany of Hawaiian taxa. Undergraduate. A-F only. Consent. Spring only.

**Botany of Native Hawaiian Plants XVI** (3) 3 hr. Special topics in ethnobotany of Hawaiian taxa. Undergraduate. A-F only. Consent. Spring only.

**Botany of Native Hawaiian Plants XVII** (3) 3 hr. Special topics in ethnobotany of Hawaiian taxa. Undergraduate. A-F only. Consent. Spring only.

**Botany of Native Hawaiian Plants XVIII** (3) 3 hr. Special topics in ethnobotany of Hawaiian taxa. Undergraduate. A-F only. Consent. Spring only.
BOT 457 ʻĀina Mauliola: Hawaiian Ecosystems (3) Comprehensive analysis of traditional Hawaiian and modern resource management practices. Rigorous overview of the dominant physical and biological processes that shape the unique ecosystems of Hawaiʻi. Prep: 105, HWST 107, and junior standing or consent. (Cross-listed as HWST 457)

BOT 458 Natural Resource Issues and Ethics (4) Overview of the history of land, resources and power in Hawaiʻi; players and processes influencing land and natural resource management today explored from Native Hawaiian and other viewpoints. Extensive use of case studies. Prep: 457 or HWST 457. (Cross-listed as HWST 458)

BOT 460 Strategies in Hawaiian Resource Use (3) Analyzing diverse land and water use strategies of Oʻahu, from traditional Hawaiian, scientific and economic perspectives, through classroom and on-site lectures. Topics include traditional Hawaiian methods, modern development, threatened ecosystems, ecotourism and scientific research. A-F only. Prep: BOT/HWST 457 (or concurrent) or consent. (Cross-listed as HWST 459)

BOT 466 Hui Konohiki Internship: Applied Resource Management (3) A “hands-on” internship in an environmental or resource-management organization in Hawai‘i. The experience will be broadened and supplemented by classroom lectures, discussion and analysis of Hawai‘i, scientific and economic perspectives. A-F only. Prep: BOT/HWST 457, BOT/HWST 458 (or co-requisite), BOT/HWST 459; or consent. (Spring only) (Cross-listed as HWST 460)

BOT 461 Systems of Vascular Plants (4) (2 Lec, 2-3 hr Lab) “Hands-on” experience with Hawai‘i’s unique tropical flora; emphasis on recognition and identification of vascular plant families and the principles and methodologies that define them; evolution of biodiversity. Prep: 101 or college general biology. DB DY

BOT 462 Plant Evolution (3) Major events and principles; includes the blue-green algae and fungi. Prep: 201 or BIOL 172. DB (Alt. years)

BOT 470 Plant Physiology (3) Integration of form and function from cellular to whole plant levels in processes from seed germination, through photosynthesis, growth, and morphogenesis, to flowering and senescence. A-F only. Prep: CHEM 152 and BIOL 171, or consent. Prep: 470L. DB


BOT 480 Algal Diversity and Evolution (4) (3 Lec, 1-3 hr Lab) Evolutionary processes in algae, including modern times. Prep: 101, 170, MICR 351, ZOOL 101; or consent. DB DY

BOT 492 Wildlife Ecology and Management in the Tropics (3) Practices from around the world that focus on the tropics. Integrates across disciplines, considers how science based management interacts with world views and considers management plans that are scientifically sound but culturally sensitive. Prep: BIOL 265 and an upper level ecology course or consent. (Once a year)

BOT 499 Advanced Directed Research (V) Performance of research project under the direction of a faculty advisor. Preparation of written proposal, final oral presentation to be given to the Botany Department audience and written report required. Preference given to BOT majors. Repeatable up to eight credits. CR/NC only. Prep: 301/301L, 302, and 303, and consent.

BOT 500 Master’s Plan B/C Studies (1) BOT 600 Grant Writing and Your Career in Science (2) Scientific grant writing from inception through management to completion; students will write a DDIG and participate in a panel. Professional skills in grant applications, interviews, transitioning from graduate student to academic or non-academic job. A-F only. Prep: current standing as a graduate student, or consent.

BOT 601 Foundations of Current Botany I (2) Discussion of current research and classical papers important to modern concepts in history of science, plant diversity, plant interactions with the environment, and plant evolution. Prep: graduate standing in BOT or consent. Fall only.

BOT 602 Foundations of Current Botany II (2) Discussion of current research and classical papers important to modern concepts in ecology, plant interactions with other plants or animals, and ecosystem function. Prep: graduate standing in BOT or consent. (Spring only)

BOT 606 Graduate Research Skills (2) (1 Lec, 1-3 hr Lab) Survey of major research areas in the botanical sciences with emphasis upon research opportunities in 1) skills needed by botanical researchers including writing scientific papers and proposals, practicing ethical research procedures, and collection of specimens; and 2) equipment used by botanical researchers including computers, cameras, measuring and monitoring equipment, and global positioning systems. Lecture/discussion, laboratory. Repeatable one time: Prep: graduate standing in biological science or approval.

BOT 610 Botanical Seminar (1) Study and discussion of significant topics and problems in botany. Repeatable three times.

BOT 612 Advanced Botanical Problems (V) Investigation of any botanical problem; reading and laboratory work. Prep: consent. Repeatable five times. Pre: A-F only. Prep: graduate standing in biology or approval.

BOT 616 Principles of Experimentation in Plant Biology (2) Lectures by distinguished visiting professor on contemporary botanical topics in the lecturer’s area of expertise. No more than 6 credit hours may be counted toward the MS degree requirement. Repeatable five times.


BOT 640 Quantitative Ethnobotany (3) Modern ethnobotanical field research project design, execution, data analysis, and documentation methods. Intended for students preparing to conduct field research studies. Lecture/discussion, term paper. Prep: 105 and one of 201, 461, ANTH 200, or BIOL 172.

BOT 644 Ethnobotanical Methods (3) Field techniques for assessing the ecological effects of cultural uses of plants. Emphasis on documenting traditional and local patterns of plant use and measuring the effects on plant individuals, populations, communities, and landscapes; includes previous course work in anthropology or biology.

BOT 648 Conservation Ethnobiology (3) Practical field training experience for a scientific career conducting ethnobiological research. Repeatable one time. Prep: 640 or consent. (Summer only)

BOT 651 Invasion Biology (3) Theories, models, patterns, and predictive methods relating to the introduction, establishment, and spread of introduced organisms. Application of principles of invasion biology to conservation resource management. Prep: one of 453, 456, MICR 485 or ZOOL 439; and 462 or BIOL 375; or consent.

BOT 652 Population Biology (3) Theory and applications of population biology; behavior of populations models, as revealed by analytical methods and computer simulation; application to population problems such as endangered species; discussion of classical and current literature in population biology. Prep: one of 453, 454, 456, NREM 680, PEPS 671, ZOOL 439, ZL 629, or ZOOL 623; or consent. (Cross-listed as ZOOL 652)

BOT 654 Advances in Plant Ecology (2) A research-oriented course focusing on recent advances in all areas of plant ecology. Involves critical review of recent research literature, plant ecology research project, oral and written presentation of project results. Repeatable three times. Prep: consent.

BOT 661 Hawaiian Vascular Plants (3) (2 Lec, 1-3 hr Lab) Identification, systematics, evolution, and biogeography of native plants. Field trips. Prep: 461 or consent.

BOT 668 Nomenclature and Practical Systematics (3) Modern issues in naming and classifying of organisms, with a botanical emphasis. Includes lectures, discussions, class projects, and field trips. A-F only. Prep: 461 (or equivalent) or consent. (Once a year)


BOT 676 Environmental Physiology Seminar (2) Environmental stress; pollution; salinity, geobotany, and other interactions between the environment and plant processes. Current literature emphasized at multidisciplinary and interdisciplinarily levels. Prep: graduate status in a biological science, geosciences, etc.; consent for well-prepared undergraduates.


BOT 682 Physiological Ecology of Marine Plants (3) Discussion of current studies in morphological, physiological, cellular, and molecular adaptation to marine environments by macroalgae, phytoplankton, and seagrasses. A-F only. Prep: upper division ecology class recommended, 470 (or equivalent), 480 (or equivalent), or consent. Co-requisite: 682L.

BOT 682L Physiological Ecology of Marine Plants Lab (1) Field and laboratory research techniques and projects in the physiological ecology of algae and seagrasses. A-F only. Prep: upper division ecology class recommended, 470 (or equivalent), 480 (or equivalent), or consent. Co-requisite: 682L.

BOT 699 Directed Research (V) Research preliminary to thesis or dissertation research. Repeatable unlimited times. CR/NC only. Prep: consent of graduate committee.

BOT 700 Thesis Research (V) Repeatable unlimited times. Prep: candidacy for MS degree and approval of thesis proposal.

BOT 750 Topics in Conservation Biology (V) Advanced topics in conservation and environmental biology. Repeatable up to twelve credits. A-F only. Prep: consent. (Cross-listed as ZOOL 750)

BOT 800 Dissertation Research (V) Repeatable unlimited times. Prep: candidacy for PhD and approval of dissertation proposal.

Business (BUS)

Shidler College of Business

BUS 099 International Exchange Study/Research (V) Study overseas in an international exchange or similar program. Repeatable four times. CR/NC only. Prep: consent of academic advisor.

BUS 200 Introduction to Business (3) Introduc- tion to each of the functional areas of business. Intends to help students understand the relationships of business functions and the role of business in society. Stresses written communication in business. BUS majors only. Freshman or sopho- more standing only. A-F only.

BUS 209 Written Communication in Business (3) An interactive writing class stressing persuasive writing in the context of memos, letters, and business reports. A-F only. Prep: ACC 201 and ENG 100.

Key to symbols & abbreviations: see the first page of this section.
BUS 520 Applied Math in Business (3) The algebra and geometry of linear, quadratic, exponential, and logarithmic functions. Mathematics of finance—annuities, perpetuities, present value. Derivatives, graphical analysis, mathematical models as applied to business. Selected coverage of algebra, geometry, and calculus emphasizing business applications and decision making. Pre: two years high school algebra and one year plane geometry. FS

BUS 531 Statistical Analysis for Business Decisions (3) Problem recognition and formulation; stress on cross-disciplinary complex problem solving and communication; computer-intensive. Coverage of descriptive statistics and hypothesis testing with emphasis on quantity, productivity, and regression analysis. Must be taken in first semester of BBA program. DS

BUS 531 Information Systems for Global Business Environment (3) Skills and strategies for analyzing information resources applied to local and global business issues; advanced skills in computer-based analytical techniques and information management; impact of information technology on business operations and business strategies. Must be taken in first semester of BBA program. Pre: ICS 101(Alpha) or equivalent, or consent.


BUS 533 Economic and Financial Environment of Global Business (3) International trade, financial flows, and direct investment. Public and private institutions including government policies and capital markets. Emphasis on Asian Pacific issues, with attention to the cultural differences among countries. Pre: ECON 130 and ECON 131 or consent. DS

BUS 534 Business Finance (3) Introduction to the theory and practice of financial management: analysis and decision making for asset management, capital budgeting, capital structure, and dividend policy. Prerequisite for all other finance courses. Pre: ACC 202, ECON 130 and ECON 131, or consent.

BUS 535 Global Management and Organizational Behavior (3) Analysis of theories and concepts underlying domestic and global organizational management, including behavioral and personnel issues. Emphasis on teamwork and cultural differences in the Asia-Pacific region. Prerequisite to all other advanced management courses. Students may not receive credit for BUS 515 and TIM 303. Pre: PSY 100 or SOC 100.

BUS 536 Project Management (3) Concepts, problems, and opportunities of the project management within its competitive, political/legal, economic, social and global environments. Social responsibility and ethics. Project management planning. Students may not earn credit for BUS 512 and TIM 304.

BUS 537 Alpha Business Study Abroad (V) Study abroad experience emphasizing international business issues. Content varies depending on course of study and educational institution selected. Course qualifies as an international business elective(s). Repeatable one time. CR/NC only. Pre: business core or permission of academic advisor.

BUS 538 International Business Topics (V) Analysis of the business environment and business issues through study of businesses, governmental entities, and/or non-governmental organizations in specific geographic areas, in non-U.S. settings. Repeatable one time. A-F only. Pre: consent. (Summer only)

BUS 539 Internships (V) On-the-job experience in the business community. Project paper and meetings with faculty advisor required. A-F only. Repeatable one time. Pre: consent.

BUS 540 Directed Reading and Research (V) Repeatable unlimited times. Pre: consent. A-F only.

BUS 601 Professional Development (0) Professional development course designed to focus on and improve the soft skills of MBA students. Students will enjoy a setting of fast-paced field trips, intensive workshops, and hands-on experience. Repeatable two times. Full-time MBA degree program only. No grading.

BUS 621 Business Statistics (1.5) Statistical tools for the MBA with emphasis on quality control, time series, and forecasting using regression. A-F only. Co-requisite: 622.

BUS 622 Economic Foundations of Strategy (1.5) Microeconomic principles that provide structure to solve managerial problems, and to suggest strategies for success. Evaluation of the microeconomic competitive environment in which organizations operate. A-F only. Co-requisite: 621.

BUS 623 Marketing Management (3) Concepts and issues in marketing within the global environment of business. Ethical dimensions and social responsibilities; market research; consumer segmentation and positioning. Strategic marketing planning. A-F only.

BUS 624 Accounting for Decision-making (3) Accounting tools for business professionals focusing on the role of accounting information in capital markets, managerial decision-making and corporate governance. A-F only. Pre: 201 or successful completion of "Financial Accounting, Online Course Introduction Section" and "Cost-Volume-Profit models, Online Tutorial" both from "hsbp.harvard.edu", or completing a 12 contact-hour tutorial.

BUS 626 Leadership and Organizational Behavior (3) Personal leadership and communications development and the contributions of the behavioral sciences to understanding human behavior in organizations with a focus on leading organizations in times of change. A-F only.

BUS 627 Business, Government, and External Environment (1.5) Important issues related to the external environment of business. This includes international trade and finance, regulatory environment, social impacts of business. A-F only. Pre: 622 or consent. Co-requisite: 628.

BUS 628 Ethics (1.5) Assists students in developing an awareness of major ethical issues which affect business decisions, and encourages a socially responsible consideration of those issues and being able to express their views.

BUS 629 Managerial Finance (3) Financial management theories and tools for business professionals; asset management; capital budgeting; capital structure and dividend policies. A-F only. Pre: 621, 622, and 624; or consent.


BUS 631 Operations and Supply Chain Management (1.5) Theory, practices, techniques for managing operations and supply chains for global integration of firms and organizations. A-F only. Pre: 621 and 622, or consent. Co-requisite: 630.

BUS 632 Business Policy and Strategy (3) Integration of learning through analysis of comprehensive business problems, resolution of policy issues, and the study of competitive strategies in the international setting. Pre: must be taken in the final semester of the MBA core, and consent. A-F only.

BUS 667 Business Study Abroad (V) Study abroad experience emphasizing international business issues. Content varies depending on course of study and educational institution selected. Course qualifies as an international business elective(s). Repeatable one time. CR/NC only. Pre: business core or permission of academic advisor.

BUS 675 International Business Topics (V) Analysis of the business environment and business issues through study of businesses, governmental entities, and/or non-governmental organizations in specific geographic areas, in non-U.S. settings. Repeatable one time. A-F only. Pre: consent. (Summer only)

BUS 676 International Business Field Experience (V) Analysis of the business environment and business issues through study of and direct observation of businesses, governmental entities, and/or non-governmental organizations in non-U.S. settings. Involves group travel to selected international business cities. Travel sites will be selected by visiting faculty, and research contemplated by new PhD students. Repeatable unlimited times. CR/NC only. Pre: 617 and consent. (Summer only)

BUS 677 Field Study in Asia (6) Industry observations conducted entirely in Asian countries for three and a half weeks. Pre: consent.


BUS 696 MBA Consulting Practicum (3) Final MBA requirement for those candidates not writing a thesis. Candidates will form consulting teams to perform a meaningful, strategic study for a client organization. Pre: 632.

BUS 699 Directed Reading and Research (V) Outline (including methodology or sources, results expected and means of measurement) must be prepared by student and approved by supervisor and chair of graduate programs before registration. Repeatable up to 12 credits.

BUS 700 Thesis Research (V) Required for Plan A candidates only; six credit hours required, one of which must be taken during semester in which degree is awarded. Repeatable unlimited times.

BUS 705 Seminar in International Management (V) Introduces students to research and teaching at the university. Covers topics of research including research projects currently underway by Shidler College faculty, advanced PhD students, distinguished visiting faculty, and research contemplated by new PhD students. Repeatable unlimited times. CR/NC only. Pre: PhD student status in international management or consent.

BUS 800 Dissertation Research (V) Repeatable unlimited times. Pre: PhD student status in international management or consent.

Business Law (BLAW)

BLAW 200 Legal Environment of Business (3) Introduction to the legal environment of business operations with particular attention to business law and ethics and to principles of law relating to contracts, agency, partnerships, and corporations.

BLAW 360 International Business Law (3) Overview of international and national law as it applies to international trade. Readings and case studies focus on the legal environment of selected areas in the key to symbols & abbreviations: see the first page of this section.
Asia Pacific region and strategies for doing business overseas. Pre: 200. 
BLAW 604 Social and Legal Aspects of Management (3) Study of the legal environment of management with particular attention to the sources, principles, statutes, judicial decisions, organizational structures, agency, and partnership. 

Cambodian (CAM) 
College of Languages, Linguistics and Literature 
CAM 101 Introduction to Modern Khmer (4) Listening, speaking, reading, writing, Structural points introduced inductively. Meets five hourly. HSL. 
CAM 102 Introduction to Modern Khmer (4) Continuation of 101. Pre: 101 or exam or consent. HSL. 
CAM 103 Conversing in Khmer I (2) Online course aims to develop students’ proficiency skills in speaking and listening at the first year level for the purpose of communication, travel, and for enjoyment. 
CAM 104 Conversing in Khmer II (2) Online course aims to develop students’ proficiency skills in speaking and listening at the first year level for the purpose of communication, travel, and for enjoyment. 
CAM 105 Reading/Writing Khmer (2) Online course aims to develop the student’s proficiency skills in reading and writing Khmer at the first year level. 
CAM 107 First Year Khmer (2) Continuation of 105. This online course aims to develop proficiency skills in listening, reading, and writing Khmer at the first year level. Use a multimedia CD-ROM and a textbook to complement the web-based instruction. Pre: 105 or equivalent or consent. (Spring only) HSL. 
CAM 112 Intensive Elementary Khmer (10) HSL. 
CAM 201 Intermediate Modern Khmer (4) Continuation of 102. Conversation, reading, writing, Meets 5 hours weekly. Pre: 102 or exam or consent. HSL. 
CAM 202 Intermediate Modern Khmer (4) Continuation of 201. Pre: 201 or exam or consent. HSL. 
CAM 205 Second Year Khmer I (2) Online course aims to develop student’s proficiency-level units exploring Cambodian language and culture and focusing on reading and writing at the intermediate level. Pre: 102 or 105, or consent. (Fall only) HSL. 
CAM 207 Second Year Khmer II (2) Continuation of 205. Online course provides opportunities for learning and enhancing their linguistic, discourse, and sociolinguistic competencies in Khmer at the intermediate level. Use a multimedia CD-ROM and a textbook to complement the web-based instruction. Pre: 201 or 205, or consent. (Spring only) HSL. 
CAM 212 Intensive Intermediate Khmer (10) HSL. 
CAM 302 Third-Level Khmer (3) Continuation of 301. Computer assisted learning. Lab work. Pre: 301 (or equivalent), or consent. 
CAM 303 Accelerated Third-Level Cambodian (6) Continuation of 212. Practice in idiomatic conversational and written Cambodian. Integrated development of listening, speaking, reading, and writing skills. Meets 10 hours weekly. Pre: 212. 
CAM 305 Third Year Khmer I (2) Online course provides opportunities for learners to enhance their linguistic, discourse, and sociolinguistic competencies in Khmer at the advanced level. Use a multimedia CD-ROM and a textbook to complement the web-based instruction. Pre: 305 or consent. (Spring only) 
CAM 401 Fourth-Level Khmer (3) Continuation of 302. Computer assisted learning. Advanced reading, discussion of current literature; discussion of social and cultural issues; advanced conversation and composition. Pre: 302 (or equivalent), or consent. 
CAM 402 Fourth-Level Khmer (3) Continuation of 401. Computer assisted learning. Pre: 401 (or equivalent), or consent. 
CAM 415 Khmer Language in the Media (3) Focus on advanced reading, writing, aural comprehension and speaking skills through the study of Khmer newspaper, radio, TV, audio/video clips and film. Repeatable one time. Pre: 402 (or equivalent), or consent. 

Cell and Molecular Biology (CMB) 
School of Medicine 
CMB 351 Genetics, Evolution and Society (3) The role of genetics in evolution, medicine, behavior, plant and animal breeding and technology; its impact on today’s society. Pre: one semester of biological science or consent. (Cross-listed as BIOL 340) DB. 
CMB 411 Human Genetics (3) Principles of human genetics. Designed for pre-medical or pre-dental students or others who require a course with emphasis on human genetics. Pre: BIOL 172 and BIOL 172L, or consent. 
CMB 499 Genetical Problems (V) Directed reading and research in genetics. Repeatable unlimited times. Pre: 351 or 411. 
CMB 500 Master's Plan B/C Studies (1) Enrollment for degree completion. Repeatable unlimited times. Pre: master’s Plan B or C candidate and consent. 
CMB 515 Unit V Topics in Genetics (1) First-year elective course in which medical students may take an in-depth study of genetics. Repeatable six times. Pre: first-year medical student or consent. 
CMB 599 Research Topics in Cell Molecular Biology (V) Research elective for medical students. MD majors only. CR/NC only. Pre: MDED 551 and consent. 
CMB 606 Introduction to Neurosciences (4) An interdisciplinary introduction to nervous system, drawn from current knowledge and research on vertebrate and invertebrate neurobiology. Repeatable one time. Pre: consent. 
CMB 610 Public Health Biology (3) Writing-intensive asynchronous computer-based course, examines biological processes and challenges relevant to the public health professional. Topics include anatomical, pathophysiological, and molecular bases of public health; genetics, immunology, ethics; disease prevention, control, and management. (Cross-list as PH 610) 
CMB 611 Seminar in Biomedical Sciences (1) Presentation and discussion of research topics in biomedical science. Repeatable nine times. CR/NC only. Pre: graduate standing or consent. (Cross-list as REPR 611) 
CMB 621 Cell Molecular Biology I (4) Molecular approaches to cell structure and function emphasizing cells in multi-cellular plants and animals. Pre: graduate standing, BIOL 441 or BIOL 402, MBB 402, or PEPS 402, and BIOL 406; or consent. Recommended: CHEM 351. 
CMB 622 Cell Molecular Biology II (4) Molecular approaches to cell structure and function emphasizing cells in multi-cellular plants and animals. Pre: one of 621, BIOL 441 or BIOL 402, MBB 402, or PEPS 402, and BIOL 406; or consent. 
CMB 625 Advanced Topics in Genetics (2) Advanced treatment of frontiers in genetics. Pre: graduate standing in genetics or consent. 
CMB 626 Ethics in Biomedical Research (2) Topics include responsible data management, recording, reporting, misconduct and scientific fraud, conflicts of interest, critical use of animals and human issues and subjects in research, genetic screening, stem cell and gene therapy and patenting. (Cross-listed as BIOM 641) 
CMB 631 Research Rotations (3) Individualized research project in three laboratories of CMB faculty with a written report on each project. Faculty laboratories will be selected by consultation with student’s graduate committee and individual faculty. Repeatable two times. Pre: 611 or 622 (or concurrent), or consent. 
CMB 640 Neuropharmacology (2) Physiology and pharmacology of central and peripheral nervous systems, focusing on synaptic chemistry and signaling. A-F only. Pre: 606 and consent of the course director. (Cross-listed as PHRM 640) 
CMB 641 Introductory Biostatistics for the Bench Biologist (3) Modern biomolecular and genomics concepts and their role in brief guided hands-on web-based bioinformatic projects using public domain resources. Understanding key concepts and algorithms, technical literacy, and operational confidence are goals. Programming skill development is student optional. A-F only. (Fall only) 
CMB 650 Population Genetics (3) Mathematical, observational, experimental results on effects of mutation, selection, and systems of mating on distribution of genes. Analysis of non-experimental populations. Pre: consent. (Cross-listed as BIOL 650) 
CMB 654 (Alpha) Genetics Seminar (1) Research and topical literature reports in genetics. May be repeated, (B) molecular biological biology of cancer; (D) human genetics; (E) cytogenetics; (F) evolutionary genetics; (G) molecular biology of the cell; (H) drosophila genetics; (I) population genetics; (J) insect molecular biology; (M) genetics and molecular biology of fungi. Repeatable unlimited times for (G). Pre: graduate standing in genetics or consent. 
CMB 669 Essentials in Grant Writing (1) Presentation and discussion of the components of a research and grant writing. Topics include the process of proposal, submission, and review. Course work includes writing, critiquing, and revising a proposal. Graduate students only. Repeatable two times. CR/NC only. Pre: recommended 626 and consent. 
CMB 671 Techniques in Genetics (V) Laboratory training in procedures used in diagnosis of genetic diseases, cytogenetics, immunogenetics, and dermatoglyphics. Repeatable three times. Pre: graduate standing in genetics or consent. 
CMB 699 Directed Research (V) Repeatable unlimited times. Pre: graduate standing and consent. 
CMB 705 Special Topics in Neurosciences (V) Advanced topics in neuroscience, from basic neurobiology to clinical neurology and psychiatry. Emphasis on current investigations at the cellular or molecular level. Repeatable unlimited times. Pre: consent. 
CMB 800 Dissertation Research (V) Repeatable unlimited times. Pre: acceptance of dissertation topic. 

Chamorro (CHAM) 
College of Languages, Linguistics and Literature 
Students choosing Chamorro for the language requirement should realize it may not be offered if demand is limited. 
CHAM 101 Elementary Chamorro (1) Introduc- tion to Chamorro, emphasis on listening and speaking, language structure. Meets five hours weekly. HSL. 

Key to symbols & abbreviations: see the first page of this section.
CHEM 102 Elementary Chamorro (4) Listening, speaking, reading, and writing skills; emphasis on oral and reading proficiency. Meets five hours weekly. Pr: 101 (or equivalent), or consent. HSL

CHAM 201 Intermediate Chamorro (4) Continuation of 102. Emphasis on comprehension and language production (speaking). Meets five hours weekly. Pr: 102 (or equivalent), or consent. HSL

CHAM 202 Intermediate Chamorro (4) Continuation of 201. Emphasis on comprehension and language production. Pr: 201 (or equivalent), or consent. HSL

Chemistry (CHEM)

College of Natural Sciences

Credit allowed for only one of CHEM 100, 131, 151, 161, 171, or 181A.

CHEM 100 Chemistry and Society (3) Introduction to chemistry for non-science majors. Discussion of basic chemistry concepts and their application to everyday life. No credit for science and engineering majors. A-F only. DP

CHEM 131 Preparation for General Chemistry (3) For students lacking preparation in chemistry. Provides background in algebra and elementary concepts of chemistry in preparation for entering the General Chemistry sequence. A-F only.

CHEM 151 Elementary Survey of Chemistry (3) Nonrigorous but adequate background in fundamentals. Preparation for technical training in life sciences. DP

CHEM 151L Elementary Survey of Chemistry Lab (1) (3-hr Lab) Experiments introducing laboratory techniques and illustrating chemical principles. Pr: 151 (or concurrent). DY

CHEM 152 Survey of Organic and Bioorganic Chemistry (3) Structure, nomenclature, properties, reactions of organic compounds emphasizing those of practical importance in related fields. Pr: 151, 162, or 171. DP

CHEM 152L Survey of Organic and Bioorganic Chemistry Lab (1) (3-hr Lab) Techniques of preparation, purification, identification of organic compounds. Pr: 151L, 162L, or 171L; and 152 (or concurrent). DP

CHEM 161 General Chemistry I (3) Basic principles of chemistry, including stoichiometry. Introduction to solution phase chemistry. Gas phase chemistry. Thermodynamics, including enthalpies of formation and reaction. Atomic structure, periodic trends, chemical molecular structure. Pre: C (not C-) in 131 or C (not C-) in 151 or successful completion of placement exam, or consent. DP

CHEM 161L General Chemistry Lab I (1) (3-hr Lab) Laboratory experiments introducing techniques and fundamental principles of chemistry. Pr: 161 (or concurrent). DY

CHEM 162 General Chemistry II (3) Continuation of 161. Liquids and solids. Solutions and colloidal properties. Continuation of thermodynamics, including entropy and free energy. Principles and applications of chemical equilibrium, including acid-base chemistry (titrations, buffers). Kinetics. Redox reactions and electrochemistry. Pre: C (not C-) or better in 161L, 162L, or 171L. DP

CHEM 162L General Chemistry Lab II (1) (3-hr Lab) Laboratory experiments introducing techniques and fundamental principles of chemistry. Pr: 161L and 162 (or concurrent). DY

CHEM 171 Principles of Chemistry (4) Principles, theories, and elementary analytical methods of chemistry. Intended for physical science majors and engineers. Pr: Satisfactory Placement Exam score, and MATH 241 (or concurrent) or MATH 251A (or concurrent). Co-requisite: 215. (Fall only) DP

CHEM 171L Principles of Chemistry Lab (1) (3-hr Lab) Laboratory experiments illustrating fundamental principles of chemistry. Co-requisite: 171L. (Fall only) DY

CHEM 181A Honors General Chemistry (4) Rigorous, in-depth introduction to chemical principles with emphasis on experimental and applied aspects of modern chemistry. Pre: high school chemistry and MATH 215 or MATH 241 or MATH 251A. (Fall only) DP

CHEM 181L Honors General Chemistry Laboratory (1) (1 3-hr Lab) Laboratory experiments illustrating chemical principles involving advanced techniques and modern instrumentation. Co-requisite: 181A. DY

CHEM 272 Organic Chemistry I (3) Molecular structure, stereochemistry, spectroscopy, mechanisms, reactions, and synthesis of organic compounds. Pre: C (not C-) or better in 162 or 171 or 181A. DP

CHEM 272L Organic Chemistry I Lab (2) (1 3-hr Lab) Techniques, synthesis and qualitative analysis, applications of spectroscopy. Pr: 162L or 171L and 272 (or concurrent). DY

CHEM 273 Organic Chemistry II (3) Continuation of 272. Molecular structure, stereochemistry, spectroscopy, mechanisms, reactions, and synthesis of organic compounds. Pre: C (not C-) or better in 272. DP

CHEM 273L Organic Chemistry II Lab (1) (1 4-hr Lab) Techniques, synthesis and qualitative analysis, applications of spectroscopy. Pr: 272L and 273 (or concurrent). DP

CHEM 274 Principles of Analytical Chemistry (3) Selected methods and principles, e.g., phase equilibria, ionic equilibria, electrode equilibria, separations, spectroscopy, automation, and process control. Pre: C (not C-) or better in 162 or 171 or 181A. MATH 215 or MATH 241 or MATH 251A. DP

CHEM 274L Principles of Analytical Chemistry Lab (2) (2 3-hr Lab) Phase separations, chromatography, titrimetry, spectrophotometry, etc. Pr: 162L or 171L or 181L or 274 (or concurrent). DY

CHEM 351 Physical Chemistry I (3) Principles and theories; physico-chemical procedures. Pr: 274, 274L, PHYS 272 with a C (not C-) or better, PHYS 272L, and MATH 243 or MATH 253A. DP

CHEM 352 Physical Chemistry II (3) Continuation of 351. Pr: 351. DP

CHEM 352L Physico-Chemical Measurements (2) (2 3-hr Lab) Modern laboratory techniques. Includes emphasis on instruction in scientific report writing, Pr: 274L, 352 (or concurrent). DY

CHEM 361 Physical Biochemistry (3) Biochemical thermodynamics, enzyme kinetics, kinetic and equilibrium, biomoolecular structure, and biomolecular spectroscopy. A-F only. Pr: 162, PHYS 170, and MATH 242 or 252A with a grade of C or better for prerequisites. (Fall only) DP

CHEM 372 Bioorganic Chemistry (3) Mechanism of biochemical reactions, biophysical structure, techniques for studying biochemical reactions. Pre: 273 (with a grade of C or better) or graduate standing with consent, or departmental approval. (Fall only) DB

CHEM 380 Professional Ethics for Chemists (1) Discussion of contemporary ethical issues in chemistry using case studies and additional examples from the media. CHEM or BIOC majors only. CR/NC only. Pr: 274 (or concurrent). FY

CHEM 399 Directed Reading or Research (V) Pre: chemistry major, and minimum cumulative GPA of 2.7 or minimum GPA of 3.0 in chemistry. Repeatable unlimited times.

CHEM 425 Synthesis and Analysis of Inorganic Compounds (3) Lecture on advanced methods of preparation and characterization of inorganic compounds and materials. A-F only. Pr: 351 (or concurrent) or 361 (or concurrent). (Fall only) DP

CHEM 425L Preparation and Analysis of Inorganic Compounds Laboratory (2) Laboratory on preparative methods and analytical techniques and instruments in inorganic chemistry. A-F only. Pr: 425 (or concurrent). (Fall only) DY

CHEM 427 Advanced Inorganic Chemistry (3) Classification, description, fundamental theory. Pr: 425. DP

CHEM 445 Synthesis and Analysis of Organic Compounds (3) Introduction to multi-step synthesis and instruments/analytical techniques used to characterize organic compounds. Retrosynthesis and disconnection reactions; spectroscopy (optical methods, NMR, mass spectrometry, Chromatography (GC, HPLC) and coupled techniques (GCMS, LCMS), CHEM or BIOC majors only. A-F only. Pr: 273 with a grade of C (not C-) or better, or departmental approval. (Fall only) DP

CHEM 445L Preparation and Analysis of Organic Compounds Laboratory (2) Laboratory on the preparation of organic compounds and physical methods for their characterization. Includes optical methods (UV-Vis, IR), chromatography (HPLC, GC), mass spectrometry (GCMS and LCMS) and NMR. A-F only. Pr: 273L with a grade of C (not C-) or better, or departmental approval. Co-requisite: 445. (Spring only) DP

CHEM 462 Advanced Biochemistry (3) Advanced topics in biochemistry including nucleic acid replication, transcription, and translation; genetic and epigenetic regulation; bioenergetics and control of metabolism; alternative metabolic strategies; and enzyme structure and mechanism. A-F only. Pr: 361 and BIOL 402. (Spring only)

CHEM 463L Advanced Biochemistry Lab (2) Advanced biochemistry lab techniques: protein purification and characterization; enzymes and their kinetics, ligand binding, nucleic acid structure, protein structure, fluorescence. A-F only. Pr: 273L and BIOL 275L, and BIOL 402 (or concurrent). (Fall only)

CHEM 600 Introduction to Research (1) Introduction to field-specific methods and skills needed for success in graduate research. Includes training modules for safety, ethics, and library resources. Short faculty research overviews may also be given. CHEM majors only. Graduate students only. CR/NC only. (Fall only)

CHEM 601 Theory of Chemical Bonding (3) Application of quantum mechanics and symmetry principles to descriptions of chemical bond, Pr: graduate standing in CHEM.

CHEM 602 Chemical Applications of Spectroscopy (4) Introduction to magnetic resonance, infrared, UV, and visible spectroscopy, emphasizing applications to organic and inorganic chemistry. Three topics each semester–1 credit hour per topic. Repeatable unlimited times from different topics. Pr: graduate standing in CHEM.

CHEM 622 Organometallics I (3) Reactivity and reaction mechanisms of compounds containing metal-carbon bonds. Pr: 352 and 427.

CHEM 623 Coordination Chemistry (3) Survey of Lewis acids and bases, coordination numbers, geometries, stereochemistry, ligand field theory, formation constants, and bioinorganic chemistry. Pr: 601 and 602 (or concurrent).

CHEM 624 Organometallics II (3) Introduction to the principles of catalysis and the classes of catalytic reactions effected by organometallic compounds. A-F only. Pr: 622 and a minimum required grade for prerequisites of B.

CHEM 641 Organic Structure Determination (3) Interpretation of chemical and physical (primarily spectral) data in the identification of organic compounds. Pr: graduate standing or consent.

CHEM 642 Organic Synthesis I (3) Modern synthetic methods with emphasis on the design and execution of multi-step sequences. Pr: graduate standing or consent.

CHEM 643 Physical Organic Chemistry (3) Theory of molecular structure, stereochemistry, and reaction mechanisms. Pr: 601 or consent.

CHEM 647 Organic Synthesis II (3) Continuation of 642, and is the second half of a two-semester course in Modern Organic Synthesis. Pr: 642 and a minimum required grade for prerequisites of B. (Spring only)

CHEM 651 Chemical Thermodynamics and Statistical Mechanics (3) Includes statistical thermodynamics, with application to chemical systems. Pr: graduate standing in CHEM.
CHEM 652 Chemical Kinetics and Reaction Dynamics (3) Kinetics and chemical reaction dynamics of elementary reactions relevant to combustion processes, astrochemistry, chemical vapor deposition and planetary science. Pre: graduate standing in CHEM. (Spring only)

CHEM 653 Quantum Chemistry (3) Rigorous introduction to quantum mechanics, including operator formalism, matrix formation, group theory, and perturbation theory; introduction to the electronic structure of atoms and molecules. Pre: graduate standing in CHEM.

CHEM 657 Astrochemistry—A Molecular Approach (3) Formation of astrobiologically important molecules and their precursors in the interstellar medium and in our solar system: first principles and latest trends. Pre: consent. (Fall only) (Cross-listed as ASTR 657 and GG 657)

CHEM 658 Crystallography (3) Crystal symmetry. Elementary x-ray physics. Diffraction theory and its application to crystal and molecular structure determination. Pre: 352 and MATH 244 or MATH 253A.

CHEM 661 Enzyme Reaction Mechanisms (3) The chemical mechanisms of reactions catalyzed by enzymes are described with a focus on elucidating the major factors that control enzyme activity. Pre: graduate standing or consent.

CHEM 691 (Alpha) Chemistry Seminar I (1) Current topics in (D) analytic-inorganic: (E) organic: (Q) biochemistry: (Z) inorganic chemistry. Repeatable unlimited times. Pre: graduate standing.

CHEM 692 (Alpha) Chemistry Seminar II (1) Continuation of 691. Current topics in: (D) analytic-physical: (E) organic: (Q) biochemistry: (Z) inorganic chemistry. Repeatable unlimited times. Pre: graduate standing.

CHEM 699 Directed Research (V) Repeatable unlimited times. Pre: consent.

CHEM 700 Thesis Research (V) Repeatable unlimited times. Pre: candidacy for MS degree and consent of thesis chair.

CHEM 721 Special Topics: Inorganic Chemistry (V) Theory and applications. Repeatable unlimited times in different topics. Pre: consent.

CHEM 741 Special Topics: Organic Chemistry (V) Theory and applications. Repeatable unlimited times in different topics. Pre: consent.

CHEM 751 Special Topics: Physical Chemistry (V) Theory and applications. Repeatable unlimited times in different topics. Pre: consent.

CHEM 761 Special Topics: Biochemistry (V) Theory and applications. A-F only. Repeatable unlimited times in different topics.

CHEM 800 Dissertation Research (V) Repeatable unlimited times. Pre: candidacy for PhD degree and consent of dissertation chair.

Chinese (CHN)

Chinese Language and Language Literature

All students taking language courses in this program for the first time must take a regularly scheduled placement test; those with no background must come to the Department of East Asian Languages and Literatures for a brief interview. A grade of C or better in the prerequisite course is required for continuation.

CHN 101 Elementary Mandarin (4) Listening, speaking, reading, writing, grammar. Meets one hour, five times a week. Pre: placement test. HSL

CHN 102 Elementary Mandarin (4) Continuation of 101. Pre: 101 or consent. HSL

CHN 103 Accelerated Elementary Mandarin (8) Content of 101 and 102 covered in one semester. Meets two hours, four times a week. Pre: placement test. HSL

CHN 105 Elementary Chinese for Business Professionals (8) Accelerated, intensive elementary course focusing on everyday listening, speaking, reading, and writing communicative needs of business professionals in the Chinese business context. Pre: consent. (Fall only) HSL

CHN 111 Elementary Conversational Mandarin I (3) Development of basic skills (listening, speaking and grammar) of spoken Mandarin with application to some familiar everyday topics. HSL

CHN 112 Elementary Conversational Mandarin II (3) Continuation of 111. Pre: 101 or 111 or consent. HSL

CHN 201 Intermediate Mandarin (4) Continuation of 101 and 102. Meets one hour a day, four times a week. Pre: 102 or 103 or 105; or consent. HSL

CHN 202 Intermediate Mandarin (4) Continuation of 201. Pre: 201 or consent. HSL

CHN 204 Accelerated Intermediate Mandarin (8) Content of 201 and 202 covered in one semester. Meets two hours, four times a week. Pre: placement test and 102 or 103 or 105; or consent. HSL

CHN 205 Intermediate Chinese for Business Professionals (8) Accelerated, intensive intermediate course focusing on everyday listening, speaking, reading, and writing communicative needs of business professionals in the Chinese business context. Pre: 105 (or equivalent) or consent. HSL

CHN 211 Intermediate Conversational Mandarin I (3) Further development of listening and speaking skills in Mandarin. The student is expected to be able to comprehend and give oral speech at the paragraph level. Pre: 102 or 103 or 112; or consent. HSL

CHN 212 Intermediate Conversational Mandarin II (3) Continuation of 211. Pre: 201 or 211, or consent. HSL

CHN 251 Reading and Writing Chinese I (3) For students who have completed the conversational Mandarin courses up through 212 and wish to continue on to 301, or others who can handle daily conversation in Mandarin but cannot read or write in the language. Pre: 212 or consent.

CHN 252 Reading and Writing Chinese II (3) Continuation of 251. Pre: 251 or consent.

CHN 301 Third-Level Mandarin (4) Vocabulary building and extended mastery of sentence structures of modern Chinese through reading and related conversation. Meets one hour a day, four times a week. Pre: 202 or 204 or 252; or consent.

CHN 302 Third-Level Mandarin (4) Continuation of 301. Pre: 301 or consent.

CHN 303 Accelerated Third-Level Mandarin (8) Content of 301 and 302 covered in one semester. Meets two hours, four times a week. Pre: 202 or 204 or 205 or 252; or consent.

CHN 305 Third-Year Chinese for Business Professionals (8) Accelerated, intensive advanced course focusing on general advanced listening, speaking, reading, and writing communicative needs of business professionals in the business context. Pre: 205 (or equivalent) or consent.

CHN 311 Mandarin Conversation (3) Systematic practice on everyday topics of conversation. Lab work. Pre: 202 or 204 or 252 or consent.

CHN 312 Mandarin Conversation (3) Continuation of 311. Pre: 311 or consent.


CHN 331 Advanced Chinese Listening and Writing (3) Web-based training in Chinese listening, reading, and writing to develop skills at the advanced level. Activities combine independent work with communicative activities on the course website. Features language exchange with native speakers. Repeatable one time. Pre: 301 (or concurrent) or consent.

CHN 332 Advanced Chinese Reading and Writing (3) Web-based training in Chinese reading and writing to develop skills at the advanced level. Activities combine independent work with communicative activities on the course website. Ideal for in-service professionals seeking language development and maintenance. Repeatable one time. Pre: 301 (or concurrent) or consent.

CHN 333 Chinese–English; (C) English–Chinese. Pre: consent. (Cross-listed as TI 420(Alpha))

CHN 401 Fourth-Level Mandarin (4) Content of 401 and 402 covered in one semester. Meets two hours, four times a week. Pre: 302 or 303 or 305; or consent.

CHN 405 Fourth-Year Chinese for Business Professionals (8) Accelerated, intensive advanced course focusing on specialized advanced listening, speaking, reading, and writing communicative needs of business professionals in the Chinese business context. Pre: 305 (or equivalent) or consent. (Spring only)

CHN 411 Advanced Mandarin Conversation (3) Systematic practice on academic topics of conversation. Lab work. Pre: 302 or 303, or consent.

CHN 412 Advanced Mandarin Conversation (3) Continuation of 411. Pre: 411 or consent.

CHN 421 (Alpha) Chinese Translation (3) Training in techniques; theory of translation. (B) Chinese–English; (C) English–Chinese. Pre: consent. (Cross-listed as TI 420(Alpha))

CHN 441 Fourth Year Reading and Writing: Advanced Topics I (3) Asynchronous web-based course. Interaction with teacher and fellow students to prepare for, read, and reflect on authentic texts on academic, research-oriented topics with a view to meeting learners’ eventual independent research needs. Pre: 401 (or concurrent) or equivalent or consent. (Fall only)

CHN 442 Fourth Year Reading and Writing: Advanced Topics II (3) Asynchronous web-based course. Continuation of 441, with focus on meeting learners’ eventual independent research needs. Pre: 401 (or concurrent) or 441. (Spring only)

CHN 451 Structure of Chinese (3) Introduction to phonology and morphology of Mandarin Chinese; some discussion of usage and linguistic geography. Pre: 202 or 204; or consent. DH

CHN 452 Structure of Chinese (3) Introduction to syntax and semantics of Mandarin Chinese; some discussion of usage and linguistic geography. Pre: 202 or 204; or consent. DH

CHN 453 Study of Chinese Characters (3) Origin, structure, and evolution. Pre: 402, 461; or consent. (Alt. years)

CHN 454 Study of Chinese Characters (3) Continuation of 453. Pre: 453 or consent. (Alt. years)

CHN 455 Chinese Pragmatics and Discourse (3) Introduction to pragmatics and discourse analysis of Mandarin Chinese; some discussion of usage and linguistic geography. Pre: 202, 204; or consent. DH

CHN 456 Chinese Semantics and Communication (3) Study of the meaning of Chinese sentences in isolation, in discourse contexts, and in written texts. Pays equal attention to theoretical issues and practical problems in Chinese–English; (C) English–Chinese. Pre: consent. (Cross-listed as TI 420(Alpha))

Key to symbols & abbreviations: see the first page of this section.
CEE 450 Geotechnical Engineering II (3) Continuation of 355 introducing geotechnical engineering topics including: field exploration, lateral earth pressures, bearing capacity theory, slope stability theory, use of slope stability computer programs and ground modification. A-F only. Pre: 355. DP

CEE 461 Pavement Engineering (3) (2 Lec, 1-3 hr Lab) Design principles of flexible and rigid pavements; HMA mixture design, equipment and construction; and application of life cycle cost analysis (LCCA) in pavement engineering. Includes laboratory sessions for aggregate testing and Superpave mix design. A-F only. Pre: 355, 361, and 375.


CEE 464 Urban and Regional Transportation Planning (3) Application of travel demand forecasting models to transportation planning, Evaluation and decision-making. Term projects. Pre: 361.


CEE 472 Construction Project Management (3) Introduction to the management of construction. Construction supervision, contract documents, estimating and bidding, organization, planning and scheduling, administration, business methods, safety, and labor. ENGR majors only. A-F only. Pre: 375. (Cross-listed as ARCH 432)

CEE 473 Construction Equipment and Methods (3) Methods and equipment used on horizontal/ heavy engineering projects. Available equipment, their production, and how they are used to excavate, move, process, and place the earth. Pre: 375 and senior standing.


CEE 476 Construction Planning and Scheduling (3) To teach the theory and the practice of planning, scheduling, and reporting a construction project through the use of bar chart and CPM. Format to include lectures, text, outside speakers, site visits, discussions, case studies, and computers. Pre: 375. Recommended: 381.

CEE 481 Undergraduate Structural Research (3) Individual research project for undergraduate students in the structures track. Topic to be determined by consultation with structural faculty advisor. A-F only. Pre: senior standing and consent.

CEE 482 Indeterminate Structures (3) Analysis of statically indeterminate beams, frames, trusses, arches, and space structures by classical and matrix methods; computer applications. Pre: 381. DP

CEE 483 Field Experience (1) CEE 485 Reinforced Concrete Design (3) (3 Lec, 1-2 hr Lab) Behavior and design of reinforced concrete beams, one-way slabs and columns. Laboratory section includes design and hands-on manufacturing and testing of reinforced concrete members. Pre: 375 and 381. DP

CEE 486 Structural Steel Design (3) Basic properties of steel; behavior and design of steel beams, columns, and connections; introduction to rigid frames. Pre: 381. DP

CEE 489 (Alpha) Senior Topics (V) (B) Surveying and AutoCAD (2 cr. max) of surveying and Autodesk AutoCAD for civil engineering projects; (C) Professional Ethics (1 cr.) Engineering ethics, ethical decision making and deliberation. A-F only. Senior standing. Pre: 305. (Fall only)

CEE 490 Senior Design Project (3) Design problem involving several areas of civil engineering and requiring a team approach for a solution. A-F only. Pre: senior standing in CEE and 489B. (Spring only)

CEE 491 Special Topics in Civil and Environmental Engineering (3) Will reflect special interests of visiting and/or permanent faculty. Pre: junior or senior standing, and consent.

CEE 492 (Alpha) Special Topics in Civil and Environmental Engineering (3) Will reflect special interests of visiting and/or permanent faculty. Pre: junior or senior standing, and consent.

CEE 499 Special Problems (V) Individual investigation in civil and environmental engineering topics as approved by instructor. Pre: senior standing, and minimum cumulative GPA of 2.7 or minimum GPA of 3.0 in engineering.

CEE 500 Master’s Plan B/C (Studies) (1)

CEE 601 Operations Management (3) Linear programming, simplex method, graphical representation; dual; degeneracy; transportation problem; assignment problems; data envelopment analysis; applications; case studies; managerial decision making. LINDO software. Graduate students only. A-F only. Pre: 476 (or equivalent) with a minimum grade of B-, and consent.

CEE 602 Construction Scheduling and Claims (3) Precedence networks, CPM, float, updating, resource leveling, least cost scheduling, scheduling case studies, computerized scheduling, exclusion reports, sorting, term project; contract law, types of claims, proving claims, delay claims, impact of changes. Eichelay Formula, acceleration, overtime, stacking, crowding, efficiency losses, contract interpretation. Leonard Study, Kuiper model, labor escalation, claims case studies, term paper. A-F only. Pre: graduate standing in civil and environmental engineering and consent.

CEE 604 Cost Engineering and Quality Control (3) Study and applications of cost/schedule control systems criteria, earned value analysis, probabilistic cost estimating, construction risk management, construction quality control, and operations research in construction. Recommended: 472 or 474, or consent.

CEE 606 Process Simulation (3) Analysis of operations and construction processes; CYCLONE simulation language; MicroCyclone and EZstrobe software; production rates; queue waiting time, resource utilization; throughput; cost measurements; production time. Pre: CEE ME, and EE majors only. Graduate students only. A-F only. Pre: with a minimum grade of C) 474, 476, and consent. (Spring only)

CEE 614 Negotiation and Alternative Dispute Resolution (V) Legal and economic settlement almost all their cases. This class presents a “hands-on,” skill-building approach to the newest ideas, as well as centuries-old techniques, about the skill lawyers will use most often in their private practice negotiation. The class also examines the rapidly developing field of alternative dispute resolution (ADR), including mediation, facilitation, arbitration, and court-annexed mediation (CAM). Pre: 474, 476, and consent. (Spring only)

CEE 618 Parallel Computing for Engineers (3) Concepts and techniques in high performance parallel computing. Topics include parallel language and algorithms, parallelizing pre-existing serial codes, statistical analysis, and techniques up to increase computational speed and accuracy for problems requiring large memory size. Repeatable one time. A-F only. (Once a year)

CEE 620 Reforming Public Organizations (3) Explores the possibilities for reducing the most difficult aspects of the bureaucratic form in public organizations while increasing effectiveness and accountability. Repeatable one time. A-F only. (Cross-listed as PUBA 620)

CEE 622 Fluid Mechanics (3) Theory of fluid dynamics in different coordinate systems, conservation equation of motion, vortex generation, flow in rotating frame, potential theory, laminar flow, and introduction to turbulence.

Key to symbols & abbreviations: see the first page of this section.

CEE 623 Groundwater Modeling (3) Introduction to the finite-difference method; steady-state and transient groundwater flow in saturated and unsaturated media; applications to groundwater recharge and aquifer evaluation. A-F only. (Fall only) (Cross-listed as GG 655)

CEE 625 Hydrologic Processes in Soils (3) Hydrologic properties in soils and the processes involved in water infiltration drainage and solute transport. Emphasis on key parameters required for modeling. Recommended: 424 or consent. (Fall only) (Cross-listed as BE 664 and NREM 660)

CEE 626 Surface Water Hydrology (3) Deterministic and probabilistic methods include reliability of empirical distributions, multiple regression analysis, estimation of hydrologic value analysis and techniques for water and wastewater treatment. Short-memory models for stochastic simulation of streamflows include autoregressive, Markov chain and moving average models. Time series analysis of hydraulic data is discussed. Pre: 627 or consent.

CEE 627 Groundwater Hydrology (3) Groundwater occurrence, movement, quality, and resource evaluation, development, and management. Emphasis on saltwater encroachment, well evaluation, aquifer protection, recharge with wastewater, and Hawai‘i type hydrology. Recommended: 424 or consent.

CEE 633 Physical and Chemical Treatment (3) Introduction to physical and chemical processes for water and wastewater treatment: Review of momentum and mass transfer, chemical reactions, colloidal chemistry, coagulation and flocculation, granular filtration, sedimentation, carbon adsorption, gas transfer, disinfection and oxidation. A-F only. Recommended: 431 or consent.

CEE 634 Biological Treatment (3) Fundamentals of applied microbiology and biochemical reactor engineering, quantitative description of microbial growth, operational theory and design basis of aerobic, anoxic and anaerobic treatment processes. Applications for water, wastewater, and solids. A-F only. Pre: consent. (Alt. years: spring) (Cross-listed as BE 634)

CEE 635 Environmental Chemistry (3) Basic concepts of chemistry as related to the environment, with more emphasis on water. Topics include chemical kinetics, equilibrium, acid-base, precipitation and dissolution, redox reactions, sorption, organic chemicals in the environment. Pre: consent.

CEE 636 Environmental Microbiology (3) Combined lecture-lab course in environmental microbiology, microbiology ecology, and a broad understanding of microbial processes in natural and engineered environments. CEE majors only. A-F only. Pre: graduate standing in CEE or consent. (Once a year)

CEE 641 Marine Disposal of Wastes (3) Practical material on outfalls: Alternatives; planning; dangers; data collection; predesign studies; design and bidding; dredging; chemical reactions; commissioning; inspection, operation and maintenance; repairs and replacement; review of selected world outfalls. Pre: consent. (Alt. years)

CEE 643 Hazardous Waste Remediation (3) Introduces the national policy for dealing with the contamination of groundwater and presents remedial measures. Such measures include pump and treat (P&T) technology, in-situ bioremediation, soil vapor extraction, air sparging, electrodialysis, hydraulic fracturing, reactive wall injection. A-F only. Pre: 627 or consent. Co-requisite: 634 and 635. (Fall only)


CEE 648 Membrane Separations (3) Applications of membrane separation processes to power generation, and ultrapure water systems. Discussion of reverse osmosis, osmosis-driven processes, ultrafiltration, microfiltration, electrodialysis and ion exchange technologies. Membrane fouling and concentration.
for design of new pavements and overlays, under-
development of pavement design, approaches used
understanding fundamental issues such as historical
Pavement engineering with emphasis given to
only. Recommended: 305 and 464, or consent.
logistic and ARIMA analyses to transportation. A-F
methods. Application of cluster, factor, regression,
by simulation. Transportation surveys and sampling
Statistics (3)
A-F only. Recommended: 462 or 464, or consent.
Definition, technologies and their attributes. Analysis
recommended: 462 or 464, or consent.
methods, and case studies. A-F only. Recommended:
455 or consent. (Alt. years)
CEE 656 Geotech Seismic Engineering (3) Soil
site response to dynamic loading, earthquake
ground motions; stress waves and soil shear moduli;
slope liquefaction theory, evaluation, analyses, and
preventative design. A-F only. Recommended: 455 or consent.
(Alt. years)
CEE 657 Designing with Geosynthetics (3) An
overview of geotechnical uses of geosynthetics,
including product descriptions, applications, design
methods, and case studies. A-F only. Recommended:
455 or consent. (Alt. years)
CEE 658 Earth Pressures (3) Estimation of lateral
earth pressures; analysis and design of retaining walls
and excavation support systems. A-F only. Recom-
manded: 455 or consent. (Alt. years)
CEE 659 Soil and Site Improvement (3) Methods
of improving engineering properties of soils and sites
through use of mechanical stabilization, soil
admixtures, pre-consolidation, deep densification,
and earth reinforcement. A-F only. Recommended:
355 or 455. or consent. (Alt. years)
CEE 660 Systems Analysis for Engineers (3) Opti-
mization used in design and management of systems
for minimizing resources or optimizing outcomes.
Evaluation of alternatives, economic efficiency and
effectiveness, and logistics. Open to engineering
students. Computer applications and labs. Recom-
manded: 462 or 464, or consent.
CEE 661 Intelligent Transportation Systems (3) Def-
inition, technologies and their attributes. Analysis
and implementation strategies for FHWA’s User
Services. Automated incident detection algorithms.
Machine vision applications to traffic engineering.
A-F only. Recommended: 462 or 464, or consent.
CEE 664 Advanced Transportation Modeling and
Statistics (3) Design, discrete choice and
activity-based modeling. Demand forecasting
by simulation, Transportation surveys and sampling
methods. Application of cluster, factor, regression,
logistic and ARIMA analyses in transportation. A-F
only. Recommended: 305 and 464, or consent.
CEE 665 Pavement Design and Rehabilitation
(Pavement engineering with emphasis given to
understanding fundamental issues such as historical
development of pavement design, approaches used
for design of new pavements and overlays, under-
standing of construction issues and their effects on
pavement performance, and various design factors:
environmental, loading and materials character-
ization. Introduction of pavement management
systems. A-F only. Recommended: 461 or consent.
CEE 671 Continuum Mechanics (3) Cartesian ten-
sor calculus; computing methods; applications:
analysis of stress and strain; principal values, invariants,
equilibrium and compatibility equations; constitutive
relations; field equations. Problems in elasticity.
Recommended: 370 or ME 371, or consent. (Cross-
listed as ME 671)
CEE 672 Project Management Systems (3) Project
integration and PMIS; organizational power;
conflict, strategic, and life-cycle management in con-
struction management; matrix structure compared to
projectized structure; team building; change and culture in construction organizations;
competitive bidding. A-F only. Pre: consent.
CEE 675 Structural Dynamics I (3) Response of
single and multi-degree-of-freedom systems due to
dynamic forces. Equations of motion. Response
spectrum analysis. Application to earthquake
loadings. Systems with distributed mass and
elasticity. A-F only. Pre: consent.
CEE 676 Structural Dynamics II (3) Elastic and
inelastic analysis of multi-degree-of-freedom
structural systems. Design controls and devices and
strategies for protection of structures against extreme
events, i.e. earthquakes, strong winds, etc. Structural
health monitoring and smart sensor networks.
Structural materials for civil structures. CE majors only.
A-F only. Pre: 675. (Fall only)
CEE 681 Modern Structural Analysis (3) Funda-
mentals of modern structural analysis theory, with
emphasis on frame structures. Virtual work;
CEE 683 Advanced Reinforced Concrete Design
(3) Slender columns; beam-bending; combined shear and torsion. Building lateral load resisting
analysis of structures—shearwalls, rigid frames.
Floor system analysis and design—flat slabs, joint
systems. Computer applications. A-F only. Recom-
manded: 485 or consent.
CEE 685 Advanced Structural Steel Design (3) Load and resistance factored design (LRFD); steel
building modeling and analysis; moment-resisting
frames; bracing systems; beam-columns; moment
connections; columns; and plate girders.
A-F only. Recommended: 482 (or concurrent) and
486, or consent.
CEE 686 Finite Elements in Structures (3) Finite
element method in structural engineering. Extension
of structural theory. Virtual work; one- and
three-dimensional elements; axisymmetric elements;
plate bending. Application to linear problems. Recom-
manded: 581 or consent.
CEE 687 Prestressed Concrete (3) Behavior of pre-
stressed concrete structures including prestress losses.
Analysis and design of prestressed beams, slabs, and
composite sections. Anchorage zone design; contin-
uous systems. Recommended: 485 or consent.
CEE 689 Mechanics and Design of Composite
Materials (3) Basic mechanics and design of composite materials utilizing continuous fibers embedded in polymeric matrices (Fiber Rein-
forced Polymers (FRP)) and short fibers randomly
oriented in cementitious matrices (Fiber Reinforced
Cement Composites). Repeatable two times. A-F
only. Recommended: 370 or consent. (Alt. years)
CEE 691 Seminar in Civil and Environmen-
tal Engineering (1) Discussions and reports on
literature, research, developments and activities in
civil engineering. Open to all unit of all graduate
students for each graduate degree. Student presentations are required. Repeatable two times. CR/NC only. Pre: graduate standing or consent.
Key to symbols & abbreviations: see the first page of this section.
CEE 695 Plan B Master’s Project (3) Independent
study for students working on a Plan B master's
project. A grade of Satisfactory (S) is assigned when
the project is satisfactorily completed. CR/NC only.
Pre: graduate standing in CE major or minor.
CEE 696 Selected Topics in Civil and Environ-
mental Engineering (3) Highly specialized topics in
structures, soils, hydraulics, sanitary, water resources,
applied mechanics, transportation. Repeatable
unlimited times. Pre: consent.
CEE 699 Directed Readings or Research (V)
Repeatable unlimited times. Pre: consent.
CEE 700 Thesis Research (V) Research for master’s
thesis. Repeatable unlimited times.
CEE 800 Dissertation Research (V) Research for
doctoral dissertation. Repeatable unlimited times.
Pre: candidacy for PhD in civil engineering.

Communication (COM)
College of Social Sciences
COM 201 Introduction to Communication (3) An overview of communication emphasizing inter-
cultural, organizational and international communi-
cation and media arts with introduction to twilight
are, ICT’s, and public relations in dealing with disasters.
COM 310 Media Arts (3) Combined lecture-
discussion on theories and criticism of visual media,
covering aesthetic development and delivery through
multimedia and cinematic principles. A-F only. Pre:
201 or concurrent) or consent.
COM 320 Communication and Communities (3)
Combined lecture-discussion on communication
within organizational communities and between
organizations and their communities with attention to
intercultural issues in local, global, and online
interactions. Pre: 201 (or concurrent) or consent.
DS
COM 330 Information and Communication
Technology Concepts (3) Combined lecture-dis-
cussion on basic technical concepts related to ICT’s
emerged in societal context. Pre: 201 (or concurrent)
or consent.
COM 331 Techniques of Video and Digital Cin-
ema (3) Orientation to techniques of production.
Emphasis on history, language, and theory of the
creative process and application to video productions
and multimedia. Pre: 310 or consent.
COM 337 Techniques of Multimedia (3) Com-
bined lecture-lab providing an orientation to, and
examination of, procedures and techniques of multi-
timedia. Emphasis on new media literacy, human-computer interaction, and design of electronic
multimedia. Pre: 310 or consent.
COM 340 Intercultural Communication (3)
Problems and opportunities of communication in
a variety of intercultural contexts. Focus on theory,
research, and management effectiveness.
Pre: COM major or consent.
DS
COM 390 (Alpha) Journalism/Communications
Workshops (V) Short-term intensive workshops in
journalism and mass communication skills and
projects. (B) workshop in new media; (C) workshop
in reporting; (D) workshop in editing; (E) workshop
in broadcast journalism; (F) workshop in public rela-
tions. Repeatable in different alphas up to 6 credits.
COM or JOUR majors only. Pre: consent. (Cross-
listed as JOUR 390)
COM 401 Survey of Inquiry Methods in Com-
munication (3) Exploration of quantitative and
qualitative research methods commonly used in com-
munication studies and related professional work.
Pre: COM major or consent.
DS
COM 420 Communication in Multicultural
Organizations (3) Cultural diversity in multicultural
and multinational organizations is examined regard-
ing communication-related aspects of working life.
Pre: 320 and 340, or consent.
DS
COM 421 Public Relations Strategies (3) Practice
and effects of public relations. Strategic management,
COM 478 Capstone in Communication in Communities (3) Synthesize knowledge, apply research findings in service to community, and develop proposal for intervention or campaign. COM majors only. A-F only. Pre: 310 and 320 and 330; and 340 or 421; or consent.

COM 479 Capstone Project in ICTs and Policy (3) Focus on specific ICT and policy problems related to Hawai‘i and the Asia-Pacific region. COM majors only. A-F only. Pre: 310 and 320 and 330; and 432 or 438; or consent.

COM 480 Communication Seminar (3) Application of theoretical and methodological criteria to researchable questions. Topics will vary. Pre: 201 and senior standing, or consent.

COM 489 Communicating Creativity (3) The role of communication in fostering or inhibiting creativity. Exploration of theoretical bases for shared scientific or artistic creativity in communication research. COM major or consent. Pre: 201 and senior standing, or consent. (Once a year)

COM 490 Senior Thesis Project (3) Completion of the thesis project appropriate to the selected area of concentration within the context of a seminar. Emphasis on ongoing process of writing, editing, review, and revision. Pre: COM major and senior standing, or consent.

COM 499 Special Problems (V) Independent study of selected topics under faculty supervision. Repeatable up to three credits. Pre: COM major and junior standing, or consent.

COM 500 Master’s Plan B/C Studies (1) Emphasis on ongoing process of writing, editing, review, and revision. Pre: COM major and junior standing, or consent. (Cross-listed as JOUR 365)

COM 542 Building Communication Theory (3) Major theories of communication in terms of requirements for a theory, theory development, associated research, and application. Pre: COM major and junior standing, or consent. DS

COM 549 Special Topics (3) Topics of interest to faculty and students; taught by regular and visiting faculty. Repeatable on different topics to six credit hours. COM majors only. Pre: COM/JOUR major and junior standing, or consent. (Cross-listed as JOUR 459)

COM 640 Media Ethics (3) Ethics and social responsibility for media professionals. Application of ethical theories and principles to case studies and research projects. A-F only. Pre: Any 300-level course COM or JOUR and junior standing, or consent. (Cross-listed as JOUR 460)

COM 475 Global Communication (3) Problems and opportunities of communication in a variety of international contexts. Focus on commerce, diplomacy, mass communication. COM majors only. Pre: COM/JOUR major and junior standing, or consent. (Cross-listed as JOUR 475) DS

COM 476 Capstone in Digital Cinema Production (3) Creating, scripting, and producing complex programs. Media aesthetics and professional production. Pre: COM major and junior standing. Pre: 310 and 320 and 330 and 331, or consent.

COM 477 Capstone in Interactive Multimedia Design and Development (3) Design, development, evaluation, and production of interactive computer-based multimedia communication. Emphasizes authoring and production of such multimedia elements as full-motion images, audio, and graphics. Pre: COM majors only, A-F only. Pre: 310 and 320 and 330 and 337, or consent.

COM 660 ICT Policy and Planning (3) Processes and methods of planning appropriate to the information and communication sectors, including future economic, social, political, technical, and environmental perspectives. Pre: 611 (or concurrent) or consent.

COM 691 Communication Topics (3) Coverage in depth of some area of theory and research. Repeatable one time. Pre: 611 or consent.

COM 695 Communication Practicum (V) Supervised work experience, study of an organization, and career planning. Required of Plan B students in the main communication program. Repeatable up to six credits. CR/NC only. Pre: 611 and 612, or consent.

COM 700 Thesis (V) Repeatable up to six credits. Pre: 611 and 612, or consent.
tion of speech, language, and normal communication development from birth through adolescence. Repeatable unlimited times. A-F only. (Fall only)

CSD 434 Acoustics and Psychoacoustics of Speech and Hearing (3) Provides an understanding of the fundamental processes underlying the production and perception of speech. Students gain an understanding of the physical and psychological aspects of sound and their measurement. Repeatable unlimited times. A-F only. (Spring only)

CSD 435 Introductory Methods in Communication Sciences and Disorders (3) Provides an overview and discussion of the clinical management of individuals with communication disorders, and practical experience related to clinical procedures and requirements. Repeatable unlimited times. A-F only. (Spring only)

CSD 436 Introduction to Communication Sciences and Disorders (3) Information and theoretical foundations serve as an introduction to the field of communication disorders. Will provide an overview of the normal processes and disorders of speech, language, hearing, and swallowing. Repeatable unlimited times. A-F only. (Spring only)

CSD 437 Introduction to Audiology and Auditory Disorders (3) Covers anatomy and physiology of the auditory system, acoustic, basic knowledge of auditory disorders and testing procedures, and introduction to rehabilitative audiology. Repeatable unlimited times. A-F only. (Spring only)

CSD 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Repeatable unlimited times. Pre: master’s Plan B or C candidate and consent.

CSD 600 Research Methods (3) Research methods applicable to the field of speech-language pathology and audiology; analysis and reporting of data. Required of all CSD graduate students. Pre: previous coursework in inferential statistics and consent.

CSD 601 Neuroscience in Communication Sciences and Disorders (3) Covers the neuroanatomy and neurophysiology of the human nervous system as it relates to communication and swallowing and how neurological pathologies lead to behavioral deficits in those areas. CSD majors only. A-F only. (Fall only)

CSD 603 Audiological Foundations for Speech-Language Pathology (3) Instrumentation; special tests of hearing.

CSD 604 Seminar in Motor Speech Disorders (3) Provides in-depth examination of various motor speech disorders, including apraxia of speech and dysarthria. Emphasis on treatment of these diagnoses. Review of current treatment literature, anatomy/physiology, practical exercises in treatment planning. A-F only. Pre: consent.

CSD 610 Disorders of Phonology and Articulation (3) Study of the etiology, assessment, and remediation of disorders and articulation.


CSD 616 Advanced Practicum in Speech Pathology I (3) Clinical practice in diagnostic and therapeutic procedures for various types of speech and language problems in different clinical settings. Repeatable unlimited times, credit earned for six credits only.

CSD 617 Audiology Practicum for Speech-Language Pathologists (3) Clinical practice in administering tests, interpreting results; counseling of individuals with impaired hearing; use of various rehabilitation techniques. Repeatable unlimited times. Pre: consent.

CSD 620 Voice Disorders (3) Contemporary development and theoretical issues in the diagnosis, evaluation, and treatment of vocal system disorders in children and adults; current literature and clinical practice issues are addressed. Pre: consent.

CSD 622 Aphasia and the Dementias (3) Study of acquired aphasia in adults and the characteristics and progression of the disorder of dementia. Procedures for clinical intervention, current literature review, and related professional issues. Pre: consent.

CSD 695 Research–Speech Pathology (1) Required of all CSD graduate students following the non-thesis (Plan B) program and emphasizing speech-language pathology. Repeatable three times. Pre: 600 and consent.

CSD 696 Research–Audiology (3) Required of all CSD graduate students following the non-thesis (Plan B) program and emphasizing audiologic. Pre: 600 and consent.

CSD 699 (Alpha) Directed Study (V) To allow student and faculty advisor to design research/study units outside existing academic structure in specialized area. Repeatable unlimited times. B) Language Pathology; (C) Audiology. Pre: 605 for (C)

CSD 700 Thesis Research (V) Repeatable unlimited times. Pre: consent.

CSD 701 Amplification: Assessment and Applications (3) Comprehensive study of amplification. Assessment, fitting, evaluation, electroacoustic evaluation, dispensing, and institutional and educational systems. Pre: 605 and consent.

CSD 702 Disorders of Fluency (3) Contemporary developments and theoretical issues in diagnosis, evaluation, and treatment of disorders of fluency such as stuttering in both children and adults.

CSD 703 Electrophysiologic Audiology (3) Study of early, middle, and late auditory evoked potentials with emphasis on the auditory brainstem response. Pre: 605 or consent.

CSD 708 Seminar in Right Hemisphere Brain Damage and Traumatic Brain Injury (3) Traumatic brain injury and right hemisphere communicative disorders are explored with assessment and treatment of individuals with these diagnoses. Review of current treatment literature, communication and cognitive theories, and practical exercises in treatment planning. Pre: 622 and consent.

CSD 709 Dysphagia: Disorders of Swallowing (3) Explores the dynamics of normal and disordered swallowing across the life span with emphasis on the adult population. CSD majors only. A-F only. Pre: 604 (with a minimum grade of B-). (Summer only)

CSD 710 (Alpha) Special Topics in Audiology and Speech Language Pathology (3) Study of contemporary developments in speech/language pathology; (C) study of contemporary developments in audiology. Repeatable for credit for different alpha unlimited times. Pre: consent.

CSD 716 Advanced Practicum in Speech Pathology II (6) Clinical practice in diagnostic and therapeutic procedures with various types of speech and language problems in different clinical settings. Repeatable unlimited times, credit earned for 12 credits only.

CSD 717 Advanced Practicum in Audiology II (2) Clinical practice in administering tests and interpreting results; counseling individuals with impaired hearing; use of various rehabilitation techniques. Repeatable unlimited times. Pre: 603, 617, and consent.

CSD 721 Seminar in Audiology–Diagnostic Procedures (3) Study of diagnostic procedures as reflected in current literature. Pre: 603 and consent.

CSD 723 Seminar in Audiology–Rehabilitative Procedures (3) Presentations of various techniques presented in recent literature dealing with rehabilitative phases of audiology. Pre: 603 and consent.

CSD 724 Advanced Practicum in Speech Pathology III (V) Clinical practice in diagnostic and therapeutic procedures for various types of speech and language problems in different clinical settings. Repeatable unlimited times, up to 18 credits.

CSD 725 Advanced Practicum in Audiology III (3) Clinical practice in administering tests and interpreting results, counseling of individuals with impaired hearing; use of various rehabilitation techniques. Repeatable unlimited times. Pre: 603, 617, 717, and consent.

Communication (COMG)

COMG 151 Personal and Public Speech (3) Develops communication skills necessary to function effectively in today’s society. Students will enhance their communication skills in one-on-one situations, public speaking, and small group situations. Ideal for new majors and non-majors. DA

COMG 170 Introduction to Nonverbal Communication (3) Beginning course on the fundamental components of nonverbal communication. Aspects of body movements, facial expressions, eye behavior, physical appearance, voice, touch, space, smell, time, and environmental features will be examined in a lecture/discussion format. Extensive practice in skills. DS

COMG 181 Introduction to Interpersonal Communication (3) Introduction to basic principles of interaction between two people. Emphasis is on enhancement of skills in a variety of interpersonal contexts. DS

COMG 185 Multicultural Communication Skills (3) Expose students to practical skills needed for effective intercultural communication. Offer guidelines for improvement in diverse cultural settings such as business, education, community, and healthcare. DS

COMG 251 Principles of Effective Public Speaking (3) Combined lecture/laboratory providing extensive practice in preparing and presenting effective public speeches with special emphasis on organization, outlining, audience analysis, analytical reasoning, and delivery skills. DA

COMG 290 Interviewing (3) Principles and practice; training in informational, persuasive, employment, appraisal, and research interviewing. Pre: one of 151, 170, 181, 185, 251 or 301; or consent.

COMG 301 Introduction to Communicological Theories (3) Introduction to the theoretical perspectives that are the foundations of the communication discipline. Pre: one of 151, 170, 181, 185, or 251; or consent.

COMG 302 Research Methods (3) Introduction to methods of inquiry in the field of communication. Topics include research design and problem formulation, sampling, analytic and observational techniques, and data interpretation. CSM majors only. Pre: 200-level COMG course (or concurrent) or consent.

COMG 321 Speech for Classroom Teachers (3) Analysis of and practice in using major models of communication in the classroom. Role of communication in various academic disciplines as needed by teachers. Pre: one of 151, 170, 181, 185, 200, 251, or 301; or consent.

COMG 351 Professional Presentations (3) Extension of public speaking skills to professional contexts: group sales, press conferences, and corporate annual reports. Emphasis on organization, preparation, and delivery. Pre: 251 or consent.

COMG 352 Group Decision-Making and Leadership (3) Study of decision-making within the small group. Effects of organization, leadership, membership, and goals on achieving group purposes. Pre: one of 151, 170, 181, 185, 251 or 301; or consent.

COMG 353 Argumentation and Debate (3) Adapting communication theory to forensic strategies in social arts. Practice in formal argument. Pre: one of 151, 170, 181, 185, 251 or 301; or consent.

COMG 361 Leadership and Organizational Communication (3) Principles and practices of organizational communication and its relationship to networks, leadership, power, conflict, cultures, and other contemporary views of organizational work.

Key to symbols & abbreviations: see the first page of this section.
and medical nutrition therapies for patients with related diet conditions or diseases. Repeatable one time. Junior standing and higher. Pre: CHEM 151 (or higher) or BIOG 241 (or higher); PHYL 141 or ZOOL 141; highly encouraged: FSHN 185 or any other basic nutrition course.

CAAM 595 Nutrition for Clinicians (1) Provides in-depth lectures and case studies reviewing the role of nutritional therapy in health and illness. MD majors only. CR/NC only. Pre: MDED 554 or consent. (Fall only)

CAAM 599 Research Topics in Complementary and Alternative Medicine (V) Research elective for medical students. MD students only. CR/NC only. Pre: MDED 554 or consent. (Fall only)

Curriculum Studies (EDCS) College of Education

EDCS 415 Foundations in the Field of Early Childhood Education (Birth to 8 Years) (3) Emphasizes interrelated historical and philosophical roots and socio-cultural context and their influence on policy and practice in early childhood education settings. A-F only. Pre: FAMR 331 or consent.

EDCS 415L Foundations in the Field of Early Childhood Education (Birth to 8 Years) Lab (3) Direct experience with children in early childhood settings in order to apply concepts from 415 and gain perspective on the role of the practitioner in ECE settings.

EDCS 416 Teaching and Learning for Diverse Young Children (Continuation of 415) (3) Continuation of 415: focuses on the design, implementation, evaluation of meaningful, challenging integrated curriculum that promotes comprehensive developmental and learning outcomes for diverse young children (PK-3). Pre: 415 or consent. (Cross-listed as ITE 416)

EDCS 416L Teaching and Learning for Diverse Young Children Lab (3) Continuation of 415L: Co-requisite: 416. (Cross-listed as ITE 416L)

EDCS 431 Collaborative Language and Learning (3) Examination of language (talking, reading, and writing) processes within a collaborative teaching framework in the secondary curriculum. Field experience may be required.

EDCS 432 Adolescent Literature and Literacy (3) Selection and interpretation of young adult literature, including multicultural literature for middle level and high school students. Theory and teaching strategies for integrating literacy instruction in the literature program for diverse student populations. A-F only.

EDCS 433 Interdisciplinary Science Curriculum (3) Conceptual and processes for integrating science curricula within the sciences and with subject areas. Methods and models of curriculum integration such as interdisciplinary, culturally relevant, place and community-based learning. Repeatable one time.

EDCS 440 Curriculum Implications of Multicultural Education (3) Examination of trends, issues, school practices, and program in multicultural education and its related area of study–bilingual/bicultural education. (Cross-listed as ITE 440)

EDCS 450 Methods and Materials in Science (3) Selecting and using methods and materials, demonstrations and simulations, open-ended experimentation, inquiry and discovery, task analysis, measurement methods and techniques, activities from various curricula, opportunities for individualized goals and projects. Repeatable one time. Pre: ITE 323, ITE 404/414, teaching experience; or consent.

EDCS 451 Programs for Infants/Toddlers (3) Examination of current research, theory, research, issues, and models in programs for infants and toddlers, including criteria for evaluation and planning. Pre: FAMR 230 (or concurrent), FAMR 331 (or concurrent); or consent. (Cross-listed as SPED 451)

EDCS 453 Gender Issues in Education (3) Examination of current issues in education and how they are impacted upon by gender, with particular reference to gender as it intersects with ethnicity and class, locally and globally. Pre: WS 151 or consent. (Cross-listed as EDEF 453 and WS 453) DS

EDCS 471 Special Problems in Home Economics Education (2) Individual and group problems selected according to interests and needs of fourth- and fifth-year students in home economics education. Development of teaching materials.

EDCS 480 Issues in Computer Education (3) Integration of microcomputers into school curricula and key issues related to microcomputer use in education. Pre: ITEC 442 or consent. (Cross-listed as ITE 480)

EDCS 494 Problem Solving in Mathematics Education (3) Experiencing and learning to teach heuristics of solving mathematical problems; designing curricula, classroom organization, evaluative measures for problem-solving. Pre: 415 or consent.

EDCS 495 Difficulties in Learning Mathematics (3) Identification, analysis, and remediation of difficulties in learning mathematics. Pre: consent.

EDCS 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: Master’s Plan B or C candidate only.

EDCS 600 Language, Learning and Teaching (3) Examines the role that language plays in the social construction of knowledge within various disciplines, K–adult. Collaborative group learning strategies will be modeled. A–F only; student teaching or teaching experience or consent.

EDCS 601 Advanced Topics in Reading (3) Current theories and teaching strategies of reading throughout the lifespan within various social contexts. Teachers, psychologists, professionals, and cultural foundations of reading; 21st century literacies; emergent literacy; diversity; multilingual learners, formative assessment; state/national initiatives. Pre: student teaching or teaching experience or consent.

EDCS 602 Advanced Topics in Writing and Oral Language (3) Current theories and teaching strategies of writing and oral language throughout the lifespan within various social contexts. Focus on teaching writing and oral language as tools for learning and to demonstrate learning. Pre: student teaching or teaching experience or consent.

EDCS 603 Children’s Literature in the Elementary Curriculum (3) In-depth examination of traditional and current books/media, birth through young adult, with emphasis on applications in schools or other educational contexts. Focus on use of narrative, exposition, and other genres across the curriculum. Pre: student teaching or teaching experience or consent.

EDCS 604 Effective Writing Practices (6) Analysis and practical application of principles and strategies of effective writing and informed writing instruction in K-12 classrooms. Pre: teaching experience and consent. (Summer only)

EDCS 605 Literacy Coaching and Leadership (3) Exploration and application of literacy specialist roles. Includes teaching, coaching, providing resources, advocating for all students, and collaborating with other professionals. A-F only. Pre: consent.

EDCS 606 Introduction to Research in Curriculum and Teaching (3) Classroom-based research covers the fundamentals of qualitative, quantitative, Action Research, mixed methods, and Curriculum Based Assessment. Exploratory, expository, and confirmatory research will be highlighted culminating in an outline for Plan B Thesis proposal. (Cross-listed as DIS 606)

EDCS 607 New Literacies Leadership (3) New approaches to analyzing 21st century literacies K–12, including visual, media, digital, and critical literacies as well as developing leadership practices in multi-literacies pedagogy. A–F only; student teaching or teaching experience or consent.

EDCS 608 Literacy Across the Disciplines, K-12 (3) Explores theoretical and practical principles of literacy across academic disciplines K-12, investigating the role of language and literate practices of reading, writing, speaking, visualizing, and representing in social, cultural, and educational contexts. Graduate students only. A-F only.

EDCS 610 Early Career Teaching, K–12 (3) Focuses on research and practice related to the first five years of teaching. Especially recommended for beginning teachers and graduate students interested in this stage of teaching development. Repeatable one time.

EDCS 617 Early Literacy and Language Development (3) Theory and practice for PK-3 early literacy and language development. Focus is on content knowledge and pedagogical strategies that support the optimal development of oral language, reading, and writing skills in PK-3 classrooms. A-F only.

EDCS 618 Early Childhood Education: Advanced Topics (3) Analysis and application of recent research on selected early childhood education program and/or instructional materials. Restricted to majors. Repeatable two times. Pre: 415 and 416, or consent.

EDCS 619 Social and Cultural Constructions of Childhood (3) Seminar examines the interrelated socially constructed concepts of children and childhood and places them in the larger contexts informed by sociological, anthropological, historical, critical, and technological perspectives. A-F only. Graduate students only.

EDCS 622 (Alpha) School Curriculum (3) Development and improvement of curriculum. (B) early childhood; (D) middle school; (G) K-14. Pre: teaching experience or consent.

EDCS 623 (Alpha) Science and Science Curriculum (3) Application of developments in science, curriculum construction, and learning theory to pre-kindergarten, elementary, middle level, and secondary schools. Science philosophy, content and methodology stressed. (B) elementary; (C) secondary; (D) inquiry and nature of science; (E) science literacy. May be repeated one time in different alphabas.

EDCS 624 School Mathematics Curriculum (3) Analysis of research related to teaching and learning school mathematics, application of research to classroom practices. Appraisal of recent curriculum trends; critical examination of assumptions underlying proposed curriculum changes. Pre: teaching experience or consent.

EDCS 625 Social Studies Curriculum (3) 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: ITE 322 or equivalent, social studies teaching experience, or consent.

EDCS 626 Art in Elementary Education (3) Principles of and problems in teaching art in elementary school; curriculum development and current approaches in art education, treatments in art media. Pre: student teaching or teaching experience.

EDCS 628 Function of Play in Early Childhood Education (3) Review of research and theory illuminating the nature, purposes, and meaning of play as a critical aspect of early childhood education. (Summer only)

EDCS 630 Cultural Diversity and Education (3) Examines issues, theories, perspectives and practices in multicultural education. Emphasizes understanding and promoting cultural awareness, encourages knowledgeable reflection and develops skills necessary for multicultural practitioners. A-F only. (Cross-listed as EDEF 630)

EDCS 632 Qualitative Research Methods (3) Methods of qualitative research in education or related social science from an interdisciplinary framework.

EDCS 638 (Alpha) Curriculum and Instruction in Studio Art (3) Understanding art methods and materials related to art education in elementary school; curriculum paradigms K-12. Writing curricula, integrating visual arts across the curriculum, developing evaluation methods observing stages of artistic growth among students of multiple ages/abilities. (B) painting, drawing, printing; (C) fiber arts, ceramics, sculpture; (D) photography, technology, collage; (E) Combination of any three of B, C, and/or D. Previous BA, BS, BEd,
and BFA only. Repeatable two times. A-F only. Pre: teaching experience or consent. (Once a year)
EDCS 639 Business and Marketing Education Curriculum (3) Theory, philosophy, objectives, and development of business and marketing education curricula for business or community college. Pre: teaching experience or consent.
EDCS 640 (Alpha) Seminar (3) Study in trends, research, and problems of implementation in teaching field. (C) English; (F) mathematics; (I) literacy; (J) science; (K) social studies; (M) interdisciplinary education (N) art. Repeatable two times. Pre: teaching experience or consent.
EDCS 641 (Alpha) Seminar in Foreign Language (3) Study in trends, research, and problems of implementation of language education instruction. (B) French; (C) German; (D) Japanese; (F) Spanish. Pre: teaching experience, and consent.
EDCS 642 (Alpha) Seminar in Diversity Issues (1) Examination of principles in multicultural education and diversity. (D) middle level; (G) K-14; (R) reading K-12. Repeatable five times. A-F only. Pre: consent.
EDCS 645 Seminar In Multicultural Literacy (3) Interdisciplinary examination of research and issues in the teaching and learning of literacy in diverse multicultural settings. A-F only. Pre: course in teaching language arts and multicultural education, teaching experience, or consent.
EDCS 646 Literacy Assessment, Instruction, and Intervention (3) Application of formative assessments to better monitor/guide struggling readers and writers. Topics include diversity and state/national initiatives. A-F only.
EDCS 647 Classroom and School Literacy Assessment (3) Advanced use of formative and summative assessments to monitor/lead classroom and school literacy programs. Focus on diversity, leadership, state/national initiatives, and practical applications in schools or other educational contexts. A-F only. Pre: 646 or consent.
EDCS 648 Reading for English Language Learners (3) Development of key concepts and theories in teaching reading to K-12 English language learners. Topics include instructional decisions in teaching reading to ELLs, the interrelationship of language skills, strategies, and teaching academic content. A-F only. Pre: 601 or consent.
EDCS 649 Theory/Practice in Cooperative Occupational Education (3) Theory and practices of coordinating cooperative education in high school and community college. Pre: teaching experience or consent.
EDCS 653 (Alpha) Mathematics in the Schools (3) School mathematics, K-12 content, curricula, pedagogy, and standards; trends and issues; theory and research. (B) number and operation; (C) patterns, functions, and algebra; (D) geometry and measurement; (E) probability and statistics; (F) integrated math content. Each alpha represents a different K-12 content area. Pre: teaching experience or consent.
EDCS 656 Seminar in Issues in ECE (V) Concepts and inquiry regarding the application of early childhood educational principles and approaches to programs serving children between birth and age five. Study of select topics and problems presented in required summer courses and by invited experts in early childhood education. Restricted to majors in Early Childhood Education. Repeatable six times. A-F only. (Two times a year)
EDCS 667 (Alpha) Seminar in Curriculum (3) Curriculum trends and issues related to school organization, program, administration, faculty. Required for Plan B MEd candidates in their final semester or summer semester one time. (B) early childhood; (D) middle level; (G) K-14; Pre: 622 (any alpha), and 606 or EDEF 678 or EDEP 408, and 632 or EDEA 604 or EDEF 429 or EDEA 608; or consent.
EDCS 685 Museums and Education (3) Overview of museum education including museum learning theories, informal learning programs, audience research, national and international policies and reforms, and community projects. Pre: AMST 683 (or concurrent) or consent. (Cross-listed as AMST 685)
EDCS 686 Information Literacy and Learning Resources (3) Study of information literacy models. Integration of information literacy with K-12 curriculum units and lessons. Evaluation of print and multimedia resources to meet student and curricular needs. Required for Librarian HDOE licensure. A-F only. Pre: consent. (Cross-listed as LTEC 686 and LJS 686)
EDCS 690 Practicum: Leadership in School Reading Improvement (3) Application of roles and responsibilities of the reading specialist to a school context. Includes creating a professional development plan for literacy instruction, preferably in your own school. A-F only. Pre: 605 or consent.
EDCS 695 Plan B Master’s Project (V) Independent study for students working on a Plan B master’s project. A-F only.
EDCS 699 Directed Reading and/or Research (V) Individual reading and/or research. Repeatable unlimited times. Pre: written consent.
EDCS 700 Thesis Research (V) Repeatable up to 36 credits.
EDCS 732 Qualitative Data Analysis (3) Advanced seminar in qualitative research methods with an emphasis upon qualitative data analysis, theory construction, data reporting. Pre: 632, a course in introduction to qualitative research methods; or consent.
EDCS 760 Research on Teaching and Teacher Education (3) Examination of alternative approaches and multidisciplinary perspectives on research on teaching and learning in and out of school, on educational change, and on teacher education and professional development. Pre: classified PhD student or consent.
EDCS 761 Dissertation Research and Writing (3) Intended for doctoral students who are at the dissertation stage in their program. Supports students in developing their dissertation proposals and/or initial dissertation drafts. Repeatable one time. A-F only. Pre: consent. (Once a year)
EDCS 767 Issues and Trends in Curriculum (3) Uses problem-centered approach and field experiences. Topics include 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: classified doctoral student or consent.
EDCS 768 Seminar in Curriculum and Instructional Theoretical Critical examination of models and curriculum theory and theories of instruction leading to generation of theories by seminar members. Pre: classified doctoral student or consent.
EDCS 769 Curriculum and Program Evaluation (3) Critical examination of theoretical and methodological positions on curriculum and educational program evaluation. Pre: classified doctoral student or consent.
EDCS 780 Mixed Methods Research Design (3) Mixed methods research is designed for PhD and masters students in education and social sciences considering combining qualitative and quantitative research. Covers philosophical and practical implications culminating in a mixed methods dissertation thesis proposal. Repeatable one time. (Once a year) (Cross-listed as DIS 780 and LTEC 780)
EDCS 783 Independent Study (V) Individual study for students working on a Plan B master’s project. A-F only. Pre: consent.
EDCS 785 Writing Seminars (1) Not open to graduate students. Pre: permission of the instructor. Repeatable three times.
EDCS 790 Practicum (V) Not open to graduate students. Pre: permission of the instructor. Repeatable one time.
EDCS 799 Directed Reading and/or Research (V) Individual reading and/or research. Repeatable unlimited times. Pre: written consent.
EDCS 800 Practicum (V) Not open to graduate students. Pre: permission of the instructor. Repeatable three times.
EDCS 866 Information Literacy and Learning Resources (3) Study of information literacy models. Integration of information literacy with K-12 curriculum units and lessons. Evaluation of print and multimedia resources to meet student and curricular needs. Required for Librarian HDOE licensure. A-F only. Pre: consent. (Cross-listed as LTEC 686 and LJS 686)
EDCS 901 Independent Study (V) Intersession study for students working on a Plan B master’s project. Pre: 621 or consent. (Once a year) (Cross-listed as DIS 780 and LTEC 780)
DANCE 102 Beginning Ballet Technique (3) Introduction to classical ballet technique. Repeatable three times. DA
DANCE 122 Continuing Ballet Technique (3) Continuation of beginning classical ballet technique. Repeatable three times. Pre: 121 or consent. DA
DANCE 131 Beginning Modern Dance Technique (3) Introduction to modern dance technique. Repeatable three times. DA
DANCE 132 Continuing Modern Technique (3) Continuation of beginning modern dance technique. Repeatable three times. Pre: 131 or consent. DA
DANCE 140 Hip Hop Dance (1) Introductory lecture/lab geared towards those with or without Hip Hop dance experience. Students will learn the fundamentals of various Hip Hop dance styles. Repeatable two times.
DANCE 141 Jazz Dance Technique (1) Introduction to jazz dance technique. Repeatable two times. DA
DANCE 142 Ballroom Dance (1) Introduction to those with or without ballroom dance experience. Students will learn the fundamentals of various ballroom dances. Repeatable five times.
DANCE 150 Introduction to Dance (3) Survey the development of major dance styles and their relationship to contemporary choreography. DA
DANCE 151 Music Theory for Dancers (3) Elements of music and relationship to dance; emphasis on rhythm analysis. (Alt. years) DA
DANCE 221 Low Intermediate Ballet Technique (3) Low intermediate ballet technique. Repeatable three times. Pre: 122 or consent. DA
DANCE 222 Low Intermediate Ballet Technique (3) Low intermediate ballet technique. Repeatable two times. Pre: 221 or consent. DA
DANCE 231 Low Intermediate Modern Technique (3) Low intermediate modern dance technique. Repeatable three times. Pre: 221 or consent. DA
DANCE 232 Low Intermediate Modern Technique (3) Low intermediate modern dance technique. Repeatable two times. Pre: 231 or consent. DA
DANCE 245 Design Principles for Performance (3) Introduction to general design principles as applied to theatre. Will introduce students to the language and tools of visual literacy and visual communications via individual projects and collaboration. Repeatable two times. (Cross-listed as THEA 245) DA
DANCE 250 Dance Production (3) Survey of historical, theoretical, and practical aspects; work in scenery, lighting, costume, makeup, and theater management. DA
DANCE 255 Dance in World Cultures (3) Multimedia overview of world dance forms, with emphasis on Asia and the Pacific, and related concepts. Pre: sophomore standing or consent.
DANCE 260 Movement Fundamentals (1) Organized somatic systems as a framework for understanding movement and dance techniques. Required for majors. Repeatable two times. DA
DANCE 301 Advanced Dance Technique (1) Performance and techniques at the introductory level. Pre: upper division standing or consent. Repeatable up to eight credits. DA
DANCE 302 Chinese Dance (1) Performance and techniques at the introductory level. Pre: upper division standing or consent. DA
DANCE 303 Japanese Dance (1) Performance and techniques at the introductory level. Pre: upper division standing or consent.
DANCE 304 Indonesian Dance (1) Performance and techniques at the introductory level. Pre: upper division standing or consent.
DANCE 305 Korean Dance (1) Performance and techniques at the introductory level. Pre: upper division standing or consent.
DANCE 306 Okinawan Dance (1) Performance and techniques at the introductory level. Pre: upper division standing or consent.
DANCE 307 Philippine Dance (1) Performance and techniques at the introductory level. Pre: upper division standing or consent. DA
DANCE 311 Oceanic Dance (1) Performance and techniques at the introductory level. Pre: upper division standing or consent. DA
DANCE 321 Intermediate Ballet Technique (3) Intermediate ballet technique. Repeatable four times. Pre: 222 or consent. DA
DANCE 331 Intermediate Modern Technique (3) Intermediate modern dance technique. Repeatable four times. Pre: 232 or consent. DA

Key to symbols & abbreviations: see the first page of this section.

DANCE (DNCE)
College of Arts and Humanities
DNCE 121 Beginning Ballet Technique (3) Introduction to classical ballet technique. Repeatable three times. DA
DNCE 122 Continuing Ballet Technique (3) Continuation of beginning classical ballet technique. Repeatable three times. Pre: 121 or consent. DA
DNCE 131 Beginning Modern Dance Technique (3) Introduction to modern dance technique. Repeatable three times. DA
DNCE 334 Taiji (T’ai Chi) for Actors I (3) Basic Taijiquan (T’ai Chi Ch’uan) movement training. Repeatable two times. Pre: sophomore standing or higher, or consent. (Cross-listed as THEA 334) DA
DNCE 335 Scenic I: Beginning Scenic Design (3) Workshop: basic principles and approaches of scenic design for theatre and dance, with emphasis on the creative process. Pre: a course in THEA or DNCE, production experience, or consent. (Consent required for production experience option) (Cross-listed as THEA 355) DA
DNCE 334 Taiji (T’ai Chi) for Actors II (3) Intermediate-level Taijiquan (T’ai Chi Ch’uan) movement training. Repeatable two times. Pre: 334 or consent. (Cross-listed as THEA 334) DA
DNCE 435 Movement for Actors (3) Training actors to discover experientially the sources of movement; to teach skills for analyzing movement for its mechanical, anatomical, spatial, and dynamic content; and then to apply these skills in a role. Pre: THEA 222 or consent. (Cross-listed as THEA 435) DA
DNCE 436 Advanced Movement for Actors (3) Detailed development of material presented in 435. Focus on Barterienn’s fundamentals and movement analysis as it applies to the physical interpretation of theatrical roles. Pre: 435 or THEA 435, or consent. (Alt. years) (Cross-listed as THEA 436) DA
DNCE 437 Period Movement Styles, 1450–1650 (3) Movement styles and social development of European societies in the Renaissance and early Baroque periods. Pre: 435 or THEA 435, one semester of a 100-level dance technique class; or consent. (Alt. years) (Cross-listed as THEA 437) DA
DNCE 438 Period Movement Styles, 1650–1800 (3) Movement styles and social development of the Baroque and pre-Romantic periods in Europe and the American colonies. Pre: 435 or THEA 435, one semester of a 100-level dance technique class; or consent. (Alt. years) (Cross-listed as THEA 438) DA
DNCE 439 Musical Theater Dance Forms (3) Theatrical dance forms used in 20th-century musical theatre. Pre: 100 level or above dance technique class, 421, or consent. (Alt. years) (Cross-listed as THEA 439) DA
DNCE 446 Topics in Costume Construction (3) Costume production techniques, both Western and Asian, for theatre and dance. Topic rotation includes: understructures and armatures, patterning, tailoring, dyeing, fabric modification, millinery and crafts, within the context of current industry practice. Repeatable two times. Pre: 354, 356, or consent. (Cross-listed as THEA 446) DA
DNCE 452 Dance History I: Ritual to Theater (3) Development of Western theatrical dance from Ancient Greece through 19th-century ballet. Pre: upper division standing or consent. DH
DNCE 453 Dance History II: 20th Century to the Present (3) Development of modern dance, contemporary ballet, and dance forms of musical theatre and film. Pre: upper division standing or consent. DA
DNCE 456 Costumes II: Intermediate Costume Design (3) Advanced costume design for theatre and dance. Introduction to collaborative process in costume design. Intensive work on rendering skills, applied to various design problems. Cost analysis and organizational techniques. Pre: 356 or consent. (Cross-listed as THEA 456) DA
DNCE 458 Field Experiences in Dance (V) Field experiences in relevant contexts under professional and faculty supervision. Pre: CR/NC only. Pre: upper division standing and consent.
DNCE 459 Topics in Dance (V) Readings, research, and/or field movement experiences. Repeatable one time if topic changes. Pre: graduate standing or consent.
DNCE 460 Laban Movement Analysis (3) Study and application of Laban Movement Analysis as a framework for enhancing analytical and artistic abilities. Pre: 260 or concurrent and 360 (or concurrent); or consent.
DNCE 671 Advanced Choreography (3) Advanced and creative study. Pre: 372 or consent. (Alt. years)
DNCE 672 Dance Performance (V) Graduate performance in various dance styles and settings. By audition only. Repeatable six times. Pre: consent.
DNCE 676 Seminar in Choreographic Methods (3) Graduate level course designed for students with prior choreographic experience. Students will research, create, revise, and perform new works based on a variety of choreographic methodologies. Repeatable one time. Pre: 371, 372; or consent. (Alt. years)
DNCE 679 Directed Choreography (1) Concert choreography for selected performance settings under the direction of a faculty advisor. Repeatable six times. Pre: 372 or (concurrent) or 671 (or concurrent); or consent.
DNCE 691 Seminar in Teaching Dance/Theater (3) Pedagogy and classroom experience in teaching technique and theory. (Alt. years) (Cross-listed as THEA 691)
DNCE 692 Practicum in Teaching (V) Supervised teaching experience at the introductory or under-graduate level. Students will teach an appropriate level course in their field of expertise under faculty supervision. Repeatable up to nine credits. THEA or DNCE majors only. (Cross-listed as THEA 692)
DNCE 693 Internship: Youth Theater/Dance (V) Supervised leadership experiences in dance/theater program with children. Students spend nine hours per week in supervised setting and three hours in weekly class meeting. Pre: 490, THEA 470, or THEA 476; or consent. (Cross-listed as THEA 693)

Key to symbols & abbreviations: see the first page of this section.
Dental Hygiene (DH)

School of Nursing and Dental Hygiene

Dental hygiene courses must be taken in sequence and are open only to those admitted to the program by the Department of Dental Hygiene.

DH 231 Oral Anatomy and Tooth Morphology
(2) The study of the structure and functions of the head and neck with emphasis on structures in or related to the oral cavity; of tooth morphology. Repeatable one time. A-F only. Pre: BIOC 241, PHYL 103, PHYL 103L or equivalent. Co-requisite: 231L. DB

DH 231L Oral Anatomy and Tooth Morphology Lab
(2) (3-hr Lab Application of DH 231 didactic concepts to laboratory activities and practices. Repeatable one time. A-F only. Pre: BIOC 241 and PHYL 103, PHYL 103L or equivalent. Co-requisite: 231L. DB

DH 238L Basic Dental Hygiene I Lab
(1) Application of preliminary dental hygiene clinical and support procedures including instrumentation, vital signs, and team concepts in dentistry. Repeatable one time. A-F only. Pre: BIOC 238 and 238L. DB

DH 239L Basic Dental Hygiene I Lab
(1) Application of preliminary dental hygiene clinical and support procedures including instrumentation, vital signs, and team concepts in dentistry. Repeatable one time. A-F only. Co-requisite: 238L and 239L. DB

DH 240L Basic Dental Hygiene Lab/Clinic
(1) 4-hr Lab/Clinic Laboratory and clinical experiences in basic dental hygiene skills and competencies including history taking, examination, patient care plan, oral prophylaxis, application of caries preventive agents, plaque control and support procedures. A-F only. Pre: 238, 238L and 239L. Co-requisite: 240L, 241L and 242L. DB

DH 241L Basic Dental Hygiene Lab/Clinic
(1) 4-hr Lab/Clinic Laboratory and clinical experiences in basic dental hygiene skills and competencies including history taking, examination, patient care plan, oral prophylaxis, application of caries preventive agents, and clinical procedures. A-F only. Pre: 238 and 238L. Co-requisite: 241L and 242L. DB

DH 241L Basic Dental Hygiene Lab/Clinic
(1) 4-hr Lab/Clinic Laboratory and clinical experiences in basic dental hygiene skills and competencies including history taking, examination, patient care plan, oral prophylaxis, application of caries preventive agents, and clinical procedures. A-F only. Pre: 238 and 238L. Co-requisite: 240L, 241L and 242L. DB

DH 242L Basic Dental Hygiene Lab/Clinic
(1) 4-hr Lab/Clinic Laboratory and clinical experiences in basic dental hygiene skills and competencies including history taking, examination, patient care plan, oral prophylaxis, application of caries preventive agents, and clinical support procedures. A-F only. Pre: 238 and 238L. Co-requisite: 240, 240L, and 242L. DB

DH 250 General and Oral Histology and Embryology
(2) Cells and tissues and their embryologic origin, with particular reference to teeth and their supporting structures. Pre: 231 (or concurrent). (Fall only) DB

DH 251 General and Oral Histology and Embryology
(1) Continuation of 250. Pre: 250. (Spring only) DB

DH 281 Dental Radiography
(2) Basic principles of radiation and fundamental information to understand and safely use radiation in dental radiography.
in periodontics with emphasis on principles, techni- ques, procedures in pain-anxiety control, soft tissue curettage, host factors, and modification of behavior. Repeatable one time. A-F only. Pre: 380/380L, 381L, 382L, and 383L or consent: 475, 476L, 476L, and 477L. (Fall only)

DH 480 Advanced Clinical Dental Hygiene II (2) In-depth knowledge development of expanded functions in periodontics with emphasis on principles, techniques, procedures in pain-anxiety control, soft tissue curettage, host factors, and modification of behavior. Repeatable one time. A-F only. Pre: 475/475L, 476L, 477L, and 478L. Co-requisite: 480L, 481L, 482L, 483L. (Spring only)

DH 480L Advanced Clinical Dental Hygiene II Clinic (1) (1-4 hr Clinic) Application of knowledge of expanded functions in periodontics with emphasis on principles, techniques, procedures in pain-anxiety control, soft tissue curettage, host factors, and modification of behavior. Repeatable one time. A-F only. Pre: 475/475L, 476L, 477L, and 478L. Co-requisite: 480L, 481L, 482L, 483L. (Spring only)

DH 481L Advanced Clinical Dental Hygiene II Clinic (1) (1-4 hr Clinic) Application of knowledge of expanded functions in periodontics with emphasis on principles, techniques, procedures in pain-anxiety control, soft tissue curettage, host factors, and modification of behavior. Repeatable one time. A-F only. Pre: 475/475L, 476L, 477L, and 478L. Co-requisite: 480L, 481L, 482L, 483L. (Spring only)

DH 482L Advanced Clinical Dental Hygiene II Clinic (1) (1-4 hr Clinic) Application of knowledge of expanded functions in periodontics with emphasis on principles, techniques, procedures in pain-anxiety control, soft tissue curettage, host factors, and modification of behavior. Repeatable one time. A-F only. Pre: 475/475L, 476L, 477L, and 478L. Co-requisite: 480L, 481L, 482L, 483L. (Spring only)

DH 499 Directed Reading, Field Work, or Research (V) Individualized program of directed reading, field work, or major under supervision in related areas of dentistry and dental hygiene. Pre: consent.

Dr. Key to symbols & abbreviations: see the first page of this section.

Developmental and Reproductive Biology (DRB) School of Medicine

The minimum grade required for undergraduate prerequisites is a C (not C-) or better.

DRB 601 Fertilization and Early Development (2) Lecture on the basics of vertebrate and invertebrate fertilization and early embryonic development. Open to all graduate students. (Fall only)

DRB 613 Seminar in Developmental and Reproductive Biology I (1) Presentations of current research carried out by developmental and reproductive biology graduate program faculty.

DRB 614 Developmental and Reproductive Biology Scientific Investigations (3) Discussion of current research in developmental and reproductive biology.

DRB 650 Stem Cell Biology (3) Seminar designed to teach graduate students and advanced undergraduate students about current topics relating to stem cell biology, as well as the application of stem cells to modern medicine. A-F only. Pre: BIOL 275 and PHYTL 604, or consent. (Spring only)

DRB 666 Applied Developmental and Reproductive Biology (2) Exploration of current technologies and methods for mammalian reproduction and developmental biology. A-F only. Pre: 601 (or concurrent), 613/614 (or concurrent); or consent. (Spring only)

DRB 695 DRB Research Rotation (3) Introductory laboratory research experience under the supervision of faculty. Repeatable two times. A-F only.

DRB 699 Directed Research (V) Research experience in developmental and reproductive biology. Repeatable principally to gain industrial experience. A-F only.

DRB 700 Thesis Research (V) Repeatable unlimited times.

DRB 800 Dissertation Research (V) Repeatable unlimited times.

Disability and Diversity Studies (DIS) College of Education

DIS 360 Disability and Diversity (3) Focuses on disability as a category of diversity and identity, as well as diversity within disability. Different strategies used to increase the freedom or liberty of people with disabilities are critically examined. A-F only.

DIS 382 Creating Accessible Futures (3) Focuses on creating accessible technology and instructional media, developing long-term resources, advancing accessible social interaction between students and students with instructors, and using case studies as examples of good practice. A-F only.

DIS 383 Disability History and Culture: From Homer to Hip Hop (3) How have people over many centuries, and from broad geographical perspectives perceived and treated individuals with disabilities? An overview of the history of the conditions in which people with disabilities lived. A-F only.

DIS 606 Introduction to Research in Curriculum and Teaching (3) Classroom-based research covers the fundamentals of qualitative, quantitative, Action Research, mixed methods, and Curriculum Based Assessment. Exploratory, explanatory, and confirmatory research will be highlighted culminating in an outline for Plan B/Thesis proposal. (Cross-listed as EDCS 606)

DIS 671 Basics of Applied Behavior Analysis (3) Focuses on the definitions and characteristics of applied behavior analysis and the concepts, principles, and processes. Concepts related to ethics and behavior change procedures will also be introduced. A-F only.

DIS 673 Ethics and Professional Conduct (3) Focuses on content on the Behavior Analysis Certification Board’s code for ethical conduct as well as advanced concepts, principles, and processes of applied behavior analysis. A-F only.

DIS 678 Practicum in Applied Behavior Analysis (V) Supervised field experience in applied behavior analysis. The format is a combination of fieldwork and seminar meetings. Repeatable four times or up to 15 credits. A-F only.

DIS 681 Multicultural Issues in Disabilities (3) Provide background and understanding of various Pacific Rim cultural issues in the conceptualization and treatment of individuals with disabilities and their families. A-F only.

DIS 682 Special Topics in Disability and Diversity Studies (V) Explores disability and diversity across time to gain an understanding and context of issues such as difference, culture, identity, community, privilege, and oppression and how the past affects the present and future. Repeatable two times. A-F only.

DIS 683 Interdisciplinary Disability and Diversity Issues (3) Develop understanding of current issues faced by individuals with disabilities and their families within the disability paradigm and across cultures.

DIS 684 Interdisciplinary Team Development (3) Develop knowledge and skills to participate effectively on interdisciplinary teams for the common goal of promoting service integration and coordination of education, social, health, mental health, and other services with disabilities and their families. A-F only.

DIS 685 Interdisciplinary Assessment (3) Assessment methods and techniques to instructional research-based practices and supports across disciplines.

East Asian Languages and Literatures (EALL) College of Languages, Linguistics and Literature

All students taking any content class required for a major must take a regularly scheduled placement test in the appropriate language; those with no background must come to the department office for a brief interview. A grade of C or better in the prerequisite course is required for continuation.

EALL 140 Introduction to Chinese Language and Culture (3) Provides students with interesting perspectives on and some general knowledge of Chinese language, literature, and culture.

EALL 271 Japanese Literature in Translation—Traditional (3) Survey of all major forms from the earliest era to mid-19th century. DL

EALL 272 Japanese Literature in Translation—Modern (3) Survey from mid-19th century to present. Emphasis on fiction. DL

EALL 273 Survey of Japanese Literature—KJC (3) Survey of traditional and modern Japanese literature in translation, covering all major genres. Only offered at Konan University in Japan. Not open to students with 271 or 272. DL

EALL 281 Korean Literature in Translation—Tra- ditional (3) Survey of Korean literature from earliest times with emphasis on development and cultural context; all readings in English translation. Students write essays about the readings. DL

EALL 282 Korean Literature in Translation—Modern (3) Survey of 20th-century Korean literature with emphasis on development and cultural context; all readings in English translation. Students write essays about the readings. DL

EALL 325 (Alpha) Japanese Film: Art and History (3) Study and analysis of Japanese film; its history and relationship to cultural, social, philosophical, and aesthetic contexts. (B) 1900-1960; (C) 1960-present; (D) special topics. Pre: upper division standing or consent. (Cross-listed as ASAN 325) DH

EALL 330 Chinese Film: Art and History (3) Study and analysis of Chinese film; its history and relationship to cultural, social, philosophical, and aesthetic contexts. Pre: ASAN 201 and 202, or consent. (Cross-listed as ASAN 330) DH

EALL 360 Literary Traditions of East Asia (3) Selected works of Chinese, Japanese, and Korean literature in English; relationships and parallels. Pre: one DH or DL course, or consent. DL

EALL 361 Chinese Literature: Ancient (3) Survey of all major genres from antiquity until the ninth century. Pre: one DH or DL course, or consent. DL
EALL 362 Chinese Literature: Pre-modern (3) Survey of all major genres from the ninth into the 20th-century. Prereq: one DH or DL course, or consent. DL

EALL 363 (Alpha) 20th-Century Chinese Literature (3) Survey of 20th-century Chinese literature in translation. Includes a variety of genres from the People’s Republic of China, Taiwan, and Hong Kong; (B) 1919–1949; (C) 1949–present. Prereq: one DH or DL course, or consent. (Cross-listed as ASAN 364 and WS 346) DL

EALL 365 (Alpha) Traditional Chinese Fiction in Translation (3) Survey of pre-modern Chinese fiction in translation. (B) short story; (C) novel. Prereq: one DH or DL course, or consent. DL

EALL 366 The City in Modern Chinese Literature and Visual Arts (3) Study of the fictional and visual representations of the city in the changing contexts of Chinese modernity from the late imperial age to the beginning of the 21st century. Prereq: one DH or DL course, or consent. (Once a year) DH

EALL 371 (Alpha) Traditional Japanese Literature (3) Reading and analysis of English translations of selected important works in the classical tradition. No knowledge of Japanese required: (B) prose fiction and literary miscellany; (C) drama and poetry. DL

EALL 372 (Alpha) Modern Japanese Literature (3) Reading and analysis of English translations of selected important works in modern Japanese literature. No knowledge of Japanese required: (B) fiction; (C) poetry, drama, and criticism. DL

EALL 375 Topics in Japanese Cultural Studies (3) Multi-disciplinary and historically located study of Japan through the examination of literary and visual texts. Specific topics will depend upon the term. Repeatable one time with consent. Prereq: one DH or DL course, or consent. (Alt. years) EALL 384 Modern Korean Writers and Culture (3) Study of fiction by modern Korean women writers in the changing context of Korean culture. A-F only. Prereq: sophomore standing or higher.

EALL 472 East-West Cultural Encounters (3) Critical examination of encounters between Western and East Asian cultures across time. In addition to literary texts, the course may use sources from other media, and focus on a specific era, region, or genre. Prereq: an EALL course at 200 level or above; or a DH or DL course at 200 level or above; or consent. DL

EALL 473 Chinese Diaspora and Visual Culture (3) Examines films focusing on the social relations and cultural practices of the Chinese diaspora, i.e. Chinese communities living outside China (e.g. Taiwan, Hong Kong, Southeast Asia, North America, and Europe). Weekly film discussions in class, readings on visual culture, media studies, and film criticism. Course material will also include theatrical productions, and other visual material depending on availability. Prereq: any 300- or 400-level DH or DL course. (Cross-listed as ASAN 473) DH

EALL 474 Transnational Chinese Popular Culture (3) Survey Chinese popular entertainment forms that are produced and appreciated transnationally. Examples include martial arts genres, kung fu films, commercial novels, ballroom dancing, karaoke culture, music videos and rock music. Material will be selected based upon availability and readings will include critical essays from the fields of popular culture, media studies, and literary criticism. Prereq: any 300- or 400-level DH or DL course. (Cross-listed as ASAN 474) DH

EALL 476 Perspectives on Chinese Cinema (3) Introduction to Chinese cinema studies, with emphasis on the theoretical and critical approaches to Chinese film. Prereq: one DH or DL course, or consent. (Once a year)

EALL 491 Senior Colloquium in East Asian Literature (3) Comparative perspectives; some works studied in the original. Prereq: third-level East Asian literature course. DH

EALL 492 (Alpha) Study of East Asian Languages (3) Less commonly taught languages of East Asia: (B) Manchu; (C) Mongolian. Recommended: previous experience in history, linguistics, or languages. Repeatable one time. Prereq: consent.

EALL 500 Master’s Plan B/C Studies (1) EALL 601 Current Issues in East Asian Language Pedagogy (3) Survey on East Asian language pedagogy designed to develop students’ familiarity with and facility in addressing the major issues, initiatives, and innovations in the field. Prereq: graduate standing or consent.

EALL 602 Introduction to East Asian Linguistics (3) Introduction to cross-linguistic comparison of the writing systems, dialects, history, phonology, morphology, and syntax of Chinese, Japanese, and Korean. Prereq: CHIN 451 and 452, or JPN 451, or KOR 451 and 452; or consent. (Once a year)

EALL 603 (Alpha) Bibliographical and Research Methods (3) Traditional and modern references and other library materials basic to research in all areas of East Asian studies: (C) Chinese; (J) Japanese; (K) Korean. Prereq: CHIN 402 for (C); JPN 407 (alpha) for (J); KOR 402 for (K).

EALL 611 Topics in 20th Century Chinese Literary and Cultural Studies (3) Critical scholarship in Chinese literature and cultural studies, broadly defined to include the People’s Republic of China, Taiwan, Hong Kong, and other Chinese literary knowledge of Chinese desirable but not required. Repeatable one time with consent. Prereq. (Cross-listed as ASAN 612)

EALL 647 Contemporary Chinese Documentary (3) Introduction to contemporary Chinese independent documentary with these goals: to achieve in-depth understanding of Chinese society through documentary; be familiar with theoretical debates on documentary form; and understand documentary as a cultural discourse. Prereq: 473 or 476, or instructor consent. (Alt. years: fall)

EALL 691 Introduction to Classical Tibetan (3) Introduction to Classical Tibetan grammar and vocabulary with the earliest Tibetan texts; reading and analysis of pre-classical, classical and postclassical texts.

EALL 699 Directed Research (V) Repeatable unlimited times. CR/NC only. Prereq: consent.

EALL 700 Thesis Research (V) Repeatable unlimited times.

EALL 735 Seminar in Comparative East Asian Literature (3) Comparison of authors, modes, topics, and genres in poetry and prose; theoretical and practical criticism. Prereq: consent.

EALL 750 Seminar in Comparison of East Asian Languages (3) Comparison of lexicon, phonology, morphology, syntax, semantics, etc., of two or more East Asian languages, contact influence on them. Prereq: CHIN 451, CHIN 452, or JPN 451; or consent.

ECON 120 Introduction to Economics (3) One-semester survey of the principles of microeconomics and macroeconomics to enable students in all disciplines to understand current economic events. DS

ECON 130 Principles of Microeconomics (3) Examination of the decision-making process of both households and firms. Analysis of the functioning of a competitive market system, using supply and demand models and the role of government in cases where the market system fails. Additional topics include the effects of international rate on the welfare of a nation and the effects of different competitive market structures on society. DS

ECON 131 Principles of Macroeconomics (3) An introduction to macroeconomics—the study of the overall economy. Topics include the determination of national income, causes and effects of inflation, unemployment, and income inequality; causes and consequences of international differences in economic growth; sources of business cycle expansions and contractions; role of government policy in stabilizing the economy and promoting long-term growth; financial markets and monetary policy; taxes, spending, consequences of budget deficits, determination of trade imbalances, exchange rate fluctuations, and balance of payment crises. DS

ECON 300 Intermediate Macroeconomics (3) Develops basic techniques and concepts used to study the overall macroeconomics and policies that affect it. Study the determinants of national income and long-run growth; causes and consequences of unemployment, inflation, and business cycle fluctuations; determination of foreign exchange rates and current account imbalances, and the role of government policy in various settings. Prereq: 131 or consent. DS

ECON 301 Intermediate Microeconomics (3) Develops basic techniques and fundamental concepts of microeconomic theory. Learn to use economic reasoning to understand the social consequences of decisions made by individual consumers, producers, and governments. Analyze the nature of market outcomes under alternative market structures, and further discuss possible welfare-improving government policies when markets fail to be efficient. Special attention is paid to the role of strategic behavior and markets with public goods and externalities. Prereq: 130 or consent. DS

ECON 311 The Economy of Hawai’i (3) History of development of Hawaiian economy; current economic problems. Prereq: 120, 130, or 131; or consent. DS

ECON 317 The Japanese Economy (3) Analysis of Japan’s growth past and present. Does Japan’s economy look different in terms of its international trade structure, industrial structure, labor market, savings patterns, government policies, etc.? Does it matter? Prereq: 120 or 130, or consent. DS

ECON 320 Introduction to Tourism Economics (3) Examines tourism from an economic perspective. Topics include: the determinants of consumer demand for leisure travel, structure of competition among suppliers of tourism services, benefits and costs of tourism development to the host community, government’s role in the taxation, subsidy, regulation and protection of the tourism industry, tourism’s impact on the environment, and sustainable tourism development. A-F only. Prereq: 120 or 130 or 131; consent. (Cross-listed as T&M 320) DS

ECON 321 Introduction to Statistics (3) Basic elements: descriptive statistics, probability, inference, distributions, hypothesis testing, regression, and correlation analysis. DS

ECON 332 Economics of Global Climate Change (3) Nature and causes of global climate change and economic solutions. Topics include the effects of climate change impacts, energy solutions, environmental implications, societal adaptation, and international cooperation. A-F only. Prereq: 120 or 130 or 131, or consent. (Once a year) DS

ECON 336 Energy Economics (3) Analysis of economic and policy aspects of energy use, and interactions of markets for various nonrenewable and renewable energy options. Evaluations of policies to develop alternative energy sources. Prereq: 120 or 130 or 131, DS

Key to symbols & abbreviations: see the first page of this section.
ECON 340 Financial Markets and Institutions (3) The determination of asset prices; the risk and term structure of interest rates; efficient markets hypothesis; risk management and financial derivatives, asymmetric information in models of financial market structure, innovation, regulation and deregulation; and financial crises. Pre: 120, 130, or 131; or consent. DS

ECON 341 Comparative Economic History (3) Comparative historical study of economic ideas and change since around 1700. Considers the history of views on work, poverty, the market and government, and the relationship of those doctrines to society, philosophy, and public policy. Pre: 130, 131, or HIST 151, or HIST 152; or consent. (Alt. years) (Cross-listed as HIST 342)

ECON 350 Sustainable Development (3) Trans-disciplinary introduction to sustainable development. Interaction between environment, economy, and public policy, especially in Hawai'i. Topics include: curse of paradise, global warming, energy use, health, poverty, population, water resources, traffic congestion, biodiversity, global warming, and sustainable development. Pre: 120 or 130 or 131, or consent. (Once a year) DS

ECON 355 Network Economics (3) Fundamental questions about the connections in the social, economic, and technological worlds. Topics include: matching, trade, lending, financial and social networks; and the political and economic consequences of the internet and other large networks. Pre: 120 or 130 or 131. DS

ECON 356 Games and Economic Behavior (3) Introduces students to the study of strategic behavior with applications to economics, business, and public policy. Simple economic models of strategic decision making are used to analyze provision of public goods; competition, cooperation, and coordination among firms; bargaining between employers and labor unions; international trade negotiations; reputation as a competitive advantage, and others. Pre: 120, 130, or 131; or consent. DS

ECON 358 Environmental Economics (3) Nature and causes of environmental degradation, solutions, with emphasis on relevant ethical issues and decision-making. Topics include air and water pollution, toxic waste, deforestation, soil erosion, biodiversity, global warming, and sustainable development. Pre: 120, 130, or 131; or consent. DS

ECON 361 Seminar: Women and International Development (3) Women’s role, status, work and treatment in the Third World; economic development, changing work roles in development and globalisation; and gender inequality across the third world; global feminisation of poverty; efforts to promote gender equality. Open to non-majors. Pre: a 100 level economics course or any woman’s studies course or consent. (Cross-listed as WS 361) DS

ECON 362 Trade Policy and Globalization (3) Political economy of the world trading system. Case studies of trade cooperation and conflict under the World Trade Organization and other institutions. Future challenges including investment policies, environmental and labor standards. Pre: 120, 130 or 131; or consent. DS

ECON 390 Internship for Economics (V) Economics majors and minors work at paid positions with public agencies, private companies, and campus organizations. Students combine academic work with practical experience. Repeatable two times. Pre: consent.

ECON 391 Cooperative Education (V) Economics majors and minors, under the supervision of faculty members, work at paid positions with private agencies, public companies, and campus organizations. The Econ Co-op integrates academics with practical work experience. Repeat until two times. Pre: consent.

ECON 396 Contemporary Topics in Economics (3) Economic analysis of current events. Topics announced each semester. Repeatable unlimited times. Pre: 120 or 130 or 131. DS

ECON 399 Directed Reading (V) Economics majors and minors participate in faculty supervised reading of economic literature. Enables students to self-study topics not covered in the department’s scheduled course offerings. Repeatable one time. Pre: consent.

ECON 409 The Ocean Economy (3) Examination of society’s interaction with the ocean. Topics include: ocean recreation, shipping, boat building, oil and gas ports, offshore energy production, aquaculture, fishing, coastal construction, and coral reef protection. Pre: 120 or 130, or consent. (Once a year) DS

ECON 412 Economic History of the United States (3) U.S. economic history: government policies, industries, financial markets, economic growth, economic crises. Pre: 120, 130, or 131; or consent. DS

ECON 414 Global Economic Crisis and Recovery (3) Causes and consequences of financial and economic crises; crisis preparedness and recovery; transmission; macroeconomic and regulatory policy responses; recovery challenges. Pre: 120, 130, or 131; or consent. DS

ECON 415 Asian Economic Development (3) History and economic development. Resource, population, and income, saving, investment, and consumption patterns. Role of government and private enterprise. Pre: 120, 130, or 131; or consent. DS

ECON 416 The Chinese Economy (3) The Chinese economy during the imperial and republican periods, under Mao, and into the present reform era, with a brief comparison to Taiwan and Hong Kong. Pre: 120, 130, or 131; or consent. DS

ECON 418 Pacific Island Economies (3) Historical and current economic development of the Pacific islands (excluding Hawai’i). Analysis of selected economic issues such as tourism, population growth, etc. Pre: 120, 130, or 131; or consent. DS

ECON 420 Mathematical Economics (3) Mathematical techniques applied to theories of the consumer, the firm, markets. Linear programming, input-output analysis. Pre: 300, 301; MATH 205, MATH 215, MATH 251A, or MATH 251B. DS

ECON 425 Introduction to Ecometrics (3) Regression analysis, analysis of variance, hypothesis testing, problems in estimation of single equation models, simultaneous equation models, problems and methods of errors in variables, econometric issues in policy analysis. Pre: 301 or 301A. (Cross-listed as HPS 425) DS

ECON 427 Economic Forecasting (3) Forecasting methods for business and economics with applications to the U.S., Asian, and Hawai’i economies. Topics include time series modeling of trend, seasonal, and cyclical components, multivariate regression modeling, and forecast evaluation. A-F only. Pre: 321 or BUS 310 or NREM 310 or MATH 251A and NREM 203 (or MATH 251A and MATH 271) or (MATH 471 and MATH 472); or consent. DS

ECON 428 International Trade and Finance (3) Theories of international specialization and exchange; general equilibrium, tariffs, quotas, common market. Pre: 301. DS

ECON 430 Economics of the Environment (4) The determination of output, price levels, exchange rates and the balance of payments for economies that are integrated with the global economy; theory and application to historical and/or contemporary policy issues. Pre: 300. DS

ECON 470 Institutional Organization (3) Theoretical and empirical analysis of contemporary topics in institutional organization. Uses economic theory to analyze important issues facing firms, and examines the practical challenges of empirical applications of theory. Pre: 301. DS

ECON 476 Law and Economics (3) Legal issues and economic analysis of contemporary topics in institutional organization. Uses economic theory to analyze important issues facing firms, and examines the practical challenges of empirical applications of theory. Pre: 301. DS

ECON 495 Land and Housing Economics (3) Microeconomics explains urban land and housing phenomena, and analyzes selected land and housing issues relevant to Honolulu. Pre: 301 or consent. DS

ECON 496 Contemporary Economic Issues (3) Economic analysis of current events. Topics announced each semester. Environmental, energy, resource, poverty, health, and economic crises. Pre: minimum GPA of 3.0 in economics and consent. DS

ECON 500 Master’s Plan B/C Studies (1) Repeatable unlimited times.


ECON 606 Microeconomic Theory I (3) Theory of the firm: production, costs, duality; theory of the market: competition, monopoly, oligopoly; monopolistic competition; theory of the consumer: preferences, expenditures, duality; expected utility theory.
ECON 607 Macroeconomic Theory I (3) Neo-classical theory of real and monetary equilibrium, economics of J. M. Keynes, standard IS/LM models and aggregate demand/supply analysis in the closed and open economy; theory of rational expectations.

ECON 608 Microeconomic Theory II (3) General equilibrium analysis: production, consumption and Walrasian equilibrium; Pareto efficiency, fundamental theorems of welfare economics; externalities; public goods; game theory; information theory. Pre: 606 or consent.

ECON 609 Macroeconomic Theory II (3) Models of economic growth and fluctuations; stochastic and dynamic macroeconomic models; econometric testing of rational expectations models; theory of public debt; current topics in macroeconomic theory. Pre: 607 or consent.


ECON 611 Economic Development Policy (3) Analysis of policies for the promotion of industrial and agricultural development. Project evaluation, industrial regulation, public administration, investment and capital policies, land-use policies, trade policies, pricing, and stabilization. Pre: 604 or 606; or consent.

ECON 614 Economic Development of Japan (3) Analysis of growth from Meiji period to present. Problems of population change, capital formation, income distribution, industrial structure. Pre: 610 or consent.

ECON 620 Microeconomic Theory III (3) Game theory and strategic behavior. Economics of information and incentives principal-agent theory. Economic design. Applications include: theory of contracts; incentive compatible mechanism for provision of public goods; auction theory. Pre: 608 or consent.

ECON 627 Mathematics for Economics (3) Sets, functions, limits, continuity, constrained and unconstrained optimization; difference and differential equations; matrix algebra; simultaneous equations; comparative statics; Kuhn-Tucker theory; game theory; mathematical programming. Pre: MATH 203, MATH 215, MATH 241, or MATH 251A.

ECON 628 Econometrics I (3) Review of probability, estimation, small sample and asymptotic properties. Bivariate and multiple regression and matrix algebra formulation. Regression diagnostics. Introduction to heteroskedasticy, autocorrelation, simultaneity, dichotomous variables, advanced topics. Pre: 321 or NREM 310, and MATH 241; or consent. (Cross-listed as AREC 626)

ECON 629 Econometrics II (3) Specification, statistical estimation, inference and forecasting of econometric models. Includes advanced topics for single-equation models, pooled models, qualitative dependent variables, simultaneous systems, distributed lags, and time series. Pre: 628, AREC 626, or consent. (Cross-listed as AREC 634)

ECON 635 Disasters and Economic Policy (3) Economic analysis of disasters. The economics of prevention and mitigation, as well as post-disaster economic consequences and policy, will be examined. Graduate students only.

ECON 636 Renewable Energy Economics and Policy (3) Analysis of economic and policy aspects of renewable energy use, and interactions of markets for renewable energy and other energy options. Evaluations of policies to develop renewable energy options. Pre: college calculus and principles of microeconomics; or consent.

ECON 637 Resource Economics (3) Analysis of problems of development and management of natural resources with emphasis on resources in agriculture and role in economic development. Pre: 605 and 629. (Cross-listed as NREM 657)

ECON 638 Environmental Resource Economics (3) Principles of policy design and evaluation for environmental resource management, forestry and watershed conservation, and sustainable economic development. Pre: 604 or 606; or consent.

ECON 639 Marine Resource Economics (3) Seminar on the economics of the marine environment. Topics include fisheries management, ocean recreation, shipping, and coral reef protection. Pre: 606 or consent. (Once a year)

ECON 650 Foundations of Public Policy (3) Microeconomic principles for expenditure and tax policies. Externalities, public goods, non-convexities, regulation; cost-benefit analysis, general equilibrium, shadow-pricing; rent-seeking, corruption; optimal taxation, incidence, excess burden; dynamic public finance, national debt, social security. Pre: 604 or 606, or consent.

ECON 651 Public Economics (3) Theoretical and empirical analysis of public-sector allocation. Adverse selection, moral hazard, networks, auctions, public choice and political mechanisms; tax and mandate incidence; economics of education and local public social insurance programs. Pre: 606 or consent.

ECON 660 International Trade and Welfare (3) Classical and new theories of international trade: why nations trade, gains from trade, patterns of trade, and trade policy effects under perfect and imperfect competition. Empirical trade and other special topics. Pre: 606 or consent.

ECON 662 International Macroeconomics (3) Advanced international monetary and macroeconomic theory: output, price and exchange rate determination, international aspects of growth and economic fluctuations, alternative exchange rate regimes, international capital flows. Pre: 607 or consent.

ECON 664 Applied International Finance (3) Surveys empirical research in international macroeconomics, finance and econometric methods: including balance of payments adjustment, international equilibrium, interest rates and exchange rates, models of exchange rate determination, capital flows, balance of payments crises. Pre: 607 and 629 (or concurrent), or consent. (Fall only)

ECON 670 Labor Economics I (3) Supply of and demand for labor; implications for labor markets and unemployment level. Pre: 606 or consent.

ECON 672 Economics of Population (3) Economic determinants and consequences of population change. Pre: consent.

ECON 674 Health Economics and Policy (3) Economic analysis of health-care policy; efficient design of health-care financing schemes; private and public economic analysis of health-care policy; efficient design, market equilibrium, international prices, interest rates and exchange rates, models of exchange rate determination, capital flows, balance of payments crises. Pre: 606 and 607, or consent. (Fall only)


ECON 696 Advanced Topics in Economics (V) Reflects interests of visiting and permanent faculty, focusing on specialized methods or topics in economics. Repeatable unlimited times. Pre: 606 or 607, or consent.

ECON 699 Directed Research (V) Repeatable unlimited times. Pre: consent of department chair.

ECON 700 Thesis Research (V) Research for master's thesis. Repeatable unlimited times.

ECON 730 Research Seminar (3) Selected issues emphasizing research techniques. Required for students who have passed the two theory qualifying exams and have not passed the comprehensive exam. CR/NC only. Pre: consent.

ECON 752 MA Capstone Research (3) Student applies theoretical and quantitative techniques, critical thinking, and communicative skills to prepare a written and oral presentation of original research on a topic of his or her choice. A-F only. Pre: 606, 607, 627, 628, and consent of graduate chair.

Key to symbols & abbreviations: see the first page of this section.
EDEA 499 Directed Reading (V) Planned individualized study, reading, research, teaching, and/or projects under direct supervision of instructor. A-F only. Repeatable up to six credits. Pre: consent.

EDEA 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Repeatable unlimited times. Pre: master’s Plan B or C candidate and consent.

EDEA 601 Introduction to Education Administration (3) Develops view of administrative process and organizations in context of system of personnel, social, and physical variables. Emphasis on role and functions of school administrator.

EDEA 602 Research in Education Administration (3) Develops basic concepts of research on educational administration: methodology, status of particular topics, consent. Pre: consent. (Meets PhD common core inquiry methods requirement.)

EDEA 604 Qualitative Research Methods in Educational Organizations (3) Introduction to methods of qualitative research in educational administration. (Meets PhD common core requirement.)

EDEA 608 Survey Research Design and Analysis (3) Survey study designs, survey sampling, questionnaire construction, interviewing, pre-tests, pilot studies, logic of measurement and association, table construction, and elaboration models. Pre: consent. (Cross-listed as SOC 608)

EDEA 610 School-Community Relations (3) Application of principles, techniques, organization, organization of school-community information program.

EDEA 620 Education Finance (3) Educational revenues, apportionments, budgetary procedures, costs, business management, economics of education, measures of productivity.

EDEA 623 Administration in Kinesiology (3) Current problems, trends, and strategies in the administration of athletic training, physical education, recreation, sport and fitness programs in school and non-school settings. Repeatable one time. Pre: consent. (Cross-listed as KRS 623)

EDEA 629 Educational Statistics (3) Statistical inference including applications of parametric and nonparametric methods to educational problems.

EDEA 630 Education Law (3) Status and functions of educational institutions and personnel relative to their legal rights and responsibilities. Includes interpretation of important court decisions, statutes, equity measures.

EDEA 642 Information Systems in Education (3) Integration of instructional systems and computer technology in educational planning, policy analysis, decision-making, and program assessment. Pre: LTEC 442 and consent.

EDEA 645 Principles of School Leadership (3) Examine the emergent theories, issues, practices, and problems relevant for educational leaders in school organizations. Integrates the aspects of management and administration within the context of leadership.

EDEA 646 American College Student (3) Study of psycho-social characteristics of the American college student and environment, from viewpoints of student personnel. (Cross-listed as KRS 646)

EDEA 650 Human Factors in Organization (3) 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.

EDEA 652 Conflict Management for Educators (3) Conflict resolution theory and practice for administrators, faculty and staff in educational organizations. K-12, community colleges and universities. Application and use of negotiation, mediation, facilitation and hybrid ADR processes. Pre: 601 or 650, or consent. (Cross-listed as PACE 652)

EDEA 655 Intercultural Interactions (3) Theory-based frameworks and training methods of intercultural interaction and their applications to educational administration situations.

EDEA 657 Introduction to Higher Education (3) Salient historic, social, and organizational aspects of higher education; history, philosophy, purposes, governance, administration, structures, financing, faculty and student selection, curricula, legal and social issues.

EDEA 660 Management/Leadership in Higher Education (3) Trends, research, and problems in college and university management. Pre: 657 or consent.

EDEA 661 Student Affairs Administration in Higher Education (3) History, organization, and administration of student personnel services at college and university levels, including admissions, housing, student activities, financial aids, placement, counseling, health services. Pre: 657 or consent.

EDEA 662 Curriculum in Higher Education (3) Traditional and contemporary curriculum issues. Development of performance competencies in curriculum design and evaluation using systems and design theory as central paradigms. Pre: 657 or consent.

EDEA 663 Community College Leadership (3) Development and changing missions of community colleges; in-depth study of emerging leadership issues: planning, financial management, decision-making, governance, and student personnel. Pre: 660 or consent.

EDEA 670 Teacher Development and Evaluation (3) The role of teacher evaluation in the development of teachers and learning communities and to support effective teaching.

EDEA 675 Introduction to Educational Policy Studies (3) Examines theories and models of educational policy and policy-making and the contribution of policy analysis to the policy-making and change processes. A-F only. Pre: consent. (Cross-listed as EDEF 675)

EDEA 676 The Politics of Education (3) Examina- tion of the ways in which education can be viewed as political, arising from its connection to the larger political system including local, state, and federal governments. A-F only. Pre: 675, EDEF 675; or consent. (Cross-listed as EDEF 676)

EDEA 699 Directed Reading and/or Research (V) Individual reading and/or research. Repeatable unlimited times. Pre: consent of instructor and department chair.


EDEA 704 Advanced Qualitative Research (3) Study in trends, research, and problems. Pre: 604 or comparable, or consent.

EDEA 720 Administrative Internship (V) Supervised internship experience in school and university administration. Emphasizes the development of leadership skills through program and project management. A-F only. Pre: approval of cooperating agencies and department.

EDEA 745 Creative Learning Strategies for Adults (3) Analysis of pedagogies, factors that affect learning in dynamics of individual, group, and organizational behavior; concept of lifelong learning vis-a-vis development of creative strategies that assist maturing, self-directed persons to develop their potentialities. (Cross-listed as EDEF 745 and NURS 745)

EDEA 767 Seminar on the Educational System (3) Examination of structure and dynamics of the educational system. Particular focus on how educational policy interacts with principles that explain educational system behavior. A-F only. Pre: 675 or EDEF 675, or consent. (Cross-listed as EDEF 767)

EDEA 775 Seminar on the Principalship (3) Series of planned seminar experiences on problems and issues confronting school principals, such as contract administration, program planning and budgeting systems (PPBS), teacher evaluation. Topic to be announced. Repeatable unlimited times.

EDEA 780 (Alpha) Seminar (3) Study in trends, research, and problems. (B) Policy formulation; (C) organizational change; (D) evaluation and research management (meets PhD common required advanced methodology course); (F) curriculum administration; (G) school governance; (H) college student affairs administration; (J) higher education administration; (K) administrative theories; (K) administrative problems and issues. (K) is repeatable two times in different topics. EDEA majors only for (K). Pre: consent.

Key to symbols & abbreviations: see the first page of this section.

**Educational Foundations (EDEF)**

**College of Education**

Current TB clearance is a requisite for all students taking courses requiring practicum experiences.

The minimum required grade for prerequisites for undergraduate-level courses is a grade of C or better. The minimum required grade for prerequisites for graduate-level courses is a grade of B or better.

EDEF 310 Education in American Society (3) Interrelated historical, philosophical, and sociocultural contexts of education with an emphasis on identifying, analyzing, and deliberating on contemporary ethical issues, problems, and applications. Students enrolled in colleges other than the College of Education are asked to confer with the College of Education director of student services before enrolling in a course. A-F only. DS

EDEF 360 Introduction to Multicultural Education (3) Concepts and methods to develop sensitivity and awareness of cultural influences on behavior as these relate to the schooling process. (Cross-listed as ITE 360) DS

EDEF 399 Directed Reading (V) Individual reading or research. Pre: senior majors with a minimum cumulative GPA of 2.7 or a minimum GPA of 3.0 in education, and consent of instructor and department chair.

EDEF 408 Community and Culture (3) Theoretical and practical approaches to understanding the constitution of community life. A focus on the social construction of normative values, social dynamics of organizations, and school and community relations.

EDEF 445 Sociology of Education (3) Introduction to sociological frameworks of analysis of the institutional, cultural and social dynamics of schooling, classroom management, school reform, social group and individual role behaviors.

EDEF 453 Gender Issues in Education (3) Examination of current and historical issues in education and how they are impacted upon by gender, with particular reference to gender as it intersects with ethnicity and class, locally and globally. Pre: WS 451 or consent. (Cross-listed as EDCS 453 and WS 453) DS

EDEF 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.

EDEF 610 Foundations of Educational Theory (3) An in-depth review of social, philosophical, and historical views underlying various theories of education and their applications in teaching and learning.

EDEF 630 Cultural Diversity and Education (3) Examines issues, theories, perspectives and practices in multicultural education and encourages knowledgeable reflection and develops skills necessary for multicultural practitioners. A-F only. (Cross-listed as EDCS 630)

EDEF 649 Field Studies in Educational Foundations (V) Field-based participant research projects, including analysis of educational problems and issues. Repeatable unlimited times.

EDEF 651 History of Education in America (3) History of educational thought and practice from European colonialism to revolutionary nationalism to the present.

EDEF 652 History of Education in Hawai‘i (3) From pre-contact, ancient Hawai‘i to the present. Social and intellectual influences on the development of national, local, and international educational institutions; emphasis on multicultural as well as monocultural directions in Hawai‘i’s schools.
EDEF 677 Introduction to Higher Education (3) Salient historic, social, and organizational aspects of higher education; history, philosophy, purposes, governance, administration, structures, financing, faculty, student selection, curricula, legal and social issues.

EDEF 660 Philosophy of Education (3) Readings of the original texts of major philosophers impacting American education. Considerations about the conditions of knowing and their extension in everyday practices in education.

EDEF 667 (Alpha) Seminar in Educational Foundations-Selected Topics (3) Multi-disciplinary (historical, philosophical, social/cultural and comparative/international focus on topical issues in education; gender, race, gender and governance in education; (D) educational reform; (E) foundations of teaching; (F) foundations of curriculum; (G) globalization in education; (H) moral political education. Repeatable with different content. Pre: 651 or 652, or consent.

EDEF 767 Seminar on the Educational System (3) Examination of the structure and dynamics of educational system. Particular focus on how education policy interacts with principles that explain educational system behavior. A-F only. Pre: 675 or EDEA 675, or consent. (Cross-listed as EDEA 767)

Educational Psychology (EDEP)
College of Education

EDEP 201 Introduction to Teaching as a Career (3) An experience-based introduction to teaching as a career. Repeatable with different content. Pre: consent.

EDEP 399 Directed Reading (V) Individual reading or research. Pre: consent.

EDEP 408 Fundamentals of Research in Education (3) Introduction to the methodology of systematic study of problems in education: principles of research design, data processing, technical writing, and evaluation of research proposals and reports. DS

EDEP 411 Seminar in Contemporary Perspectives in Educational Psychology (3) In-depth analysis of contemporary issues in education from the theoretical and methodological perspectives of the faculty in educational psychology. Repeatable one time. DS

EDEP 416 Student Assessment (3) Introduction to basic concepts and issues in assessment and measurement, descriptive statistics, scales of measurement, norms, reliability, validity and development of formative and summative assessment procedures.

EDEP 429 Introductory Statistics (3) Use of descriptive statistics in analyzing test scores; application of linear correlation and introduction to an understanding of inferential statistics. DS

EDEP 500 Master’s Plan B/C Studies (1) Enrolment for degree completion. Pre: master’s Plan B or C candidate and consent.

EDEP 601 Introduction to Quantitative Methods (3) Introductory statistics in education and social sciences. Topics include probability distributions; sampling distributions; hypothesis testing using t-tests, correlation, simple regression, ANOVA; and applications in research. (Meets PhD common inquiry methods requirement.)

EDEP 603 Design and Analysis of Psychological Experiments (3) Analysis of variance and other models of assessing results of experiments. Relation of analysis to design.

EDEP 604 Applied Regression and Analysis of Variance (3) Introduction to linear statistical models as principle of data analysis. Topics include multiple regression models with continuous and categorical predictors. ANOVA with multiple factors, ANOVA with repeated measures. Pre: PSY 601 or EDEA 629 (with a grade of B+), or consent.

EDEP 605 Structural Equation Modeling (3) Theories and applications to test models with manifest and latent variables. Topics include path analysis, factor analysis, and causal variable analysis. Pre: 604, PSY 610, 612, or consent. (Cross-listed as PSY 613)

EDEP 606 Multivariate Methods (3) Multivariate forms of multiple linear regression, analysis of variance and co-variance. Multiple discriminant analysis, canonical correlation, and principal-components analysis are discussed. (Cross-listed as PSY 614)

EDEP 608 Introduction to Educational Research (3) Fundamental design and evaluation procedures in educational research. Determining needs, defining objectives, research design, instrumentation, data collection, and evaluation. Course requires basic statistics. (Meets PhD common inquiry methods requirement or elective.)

EDEP 611 Introduction to Educational Psychology (3) Graduate level introduction to educational psychology theories, research, and topics. (Cross-listed as PSY 616)

EDEP 617 Categorical Data Analysis (3) Theories and methods for data analysis with categorical and discrete variables. Topics include contingency tables; logistic regression; log-linear models; and introduction to generalized linear models. (Cross-listed as PSY 618)

EDEP 626 Advanced Psychometrics (3) Theories and applications of modern psychometrics. Topics include unidimensional and multidimensional models of item response theory, detecting biased items, measurement invariance testing methods, and current issues in psychometrics. Pre: 616, PSY 616, or consent. (Cross-listed as PSY 617)

EDEP 631 Adolescence and Education (3) Discussion-based course presenting an overview of educational psychology applied to teaching adolescents, including theory and research on human learning, adolescent development and its social context, and student assessment.

EDEP 657 Introduction to Program Evaluation (3) Introduction to concepts and issues related to program evaluation. Topics include unidimensional and summative uses, planning and design approaches, and metaevaluation processes. A-F only. Pre: 608 (or equivalent).

EDEP 660 Development and Learning (3) Analysis and critique of (Piagetian) developmental stage theory and traditional behavioralist and cognitive learning theories; introduction to current models of learning and development. Pre: consent.

EDEP 662 Social Context of Learning (3) Research methods and theories relating social mediation and learning group structures to intellectual growth.

EDEP 663 Models of Cognitive Learning (3) Cognitive models of knowledge acquisition, organization, and utilization; theory and research relating learning and cognition to interdisciplinary models.

EDEP 664 Instructional Psychology (3) Application of learning theory and cognitive skills training in instructional settings.

EDEP 665 Social Cognition and Competence (3) Systematic analysis of social reasoning abilities conjunctive with or prerequisite to collective social interaction in educational settings.

EDEP 699 Directed Reading and/or Research (V) Individual reading and/or research. Repeatable ten times. Pre: consent.

EDEP 700 Thesis Research (V) Repeatable up to three times.


EDEP 711 Practicum in Educational Psychology (V) Supervised practicum in teaching or program
evaluation as each is reflected by professional activities of the members of the faculty. Repeatable six times. Pre: consent of supervisor professor.

EDEP 745 Creative Learning Strategies for Adults (3) Analysis of psychology of adult learner; forces that affect learning in dynamics of individual, group, and organizational behavior; concept of lifelong learning vis-a-vis development of creative strategies that assist maturing, self-directed persons to develop their potentials. (Cross-listed as EDEA 745 and NURS 745)

EDEP 768 (Alpha) Seminar in Educational Psychology (3) Current issues and problems in the context of education: (B) general; (C) learning; (D) measurement; (E) statistics; (F) psychosocial development; (G) education; (H) research methodology. Repeatable nine times. Pre: consent. Seminar may be repeated for credit as topics vary.

EDEP 800 Dissertation Research (V) Research for doctoral dissertation. Repeatable unlimited times.

**Electrical Engineering (EE)**

**College of Engineering**

Preference in registration is given to declared engineering majors. Enrollment in EE courses requires a grade of C or better in all prerequisite courses, except as noted.

EE 101 Electrical Engineering Skills (3) Electrical engineering subjects in a skill acquisition context at the freshman level. Development of creative problem solving, brainstorming, technical information assimilation, and presentation skills development. Repeatable two times. DP

EE 110 Introduction to Engineering Computation (5) Programming problem solving using MATLAB. Basic programming concepts including input/output, branching, looping, functions, file input/output, and data structures such as arrays and structures. Matrix operations for solving linear equations. Programming, engineering computations and visualization. EE and CENG majors only. A-F only. Pre: MATH 241 (or concurrent) or MATH 251A (or concurrent) or consent.

EE 160 Programming for Engineers (4) (3 Lec, 1 3-hr Lab) Introductory course on computer programming and modern computing environments in C with an emphasis on algorithm and program design, implementation, and debugging. Includes a hands-on laboratory to develop and practice programming skills. A-F only. Pre: MATH 241 (or concurrent) or MATH 251A (or concurrent) or consent.

EE 196 Freshmen Project (V) Freshmen level individual or team project under EE faculty direction and guidance. This project provides early student entry into EE hands-on project activity providing practical skills, EE subject exposure and experience. Second semester EE 196A (or concurrent) required. Repeatable unlimited times. Pre: consent.

EE 205 Object Oriented Programming (3) Second-level programming for computer engineers. Object-oriented programming paradigm, definition and use of classes, fundamentals of object-oriented design in modern object-oriented languages such as C++, Common data structures, simple searching and sorting techniques. CEE, EE, ME, PREN majors only. A-F only. Pre: 160 or consent. (Once a year)

EE 211 Basic Circuit Analysis I (4) (3 Lec, 1 3-hr Lab) Linear passive circuits, time domain analysis, transient and steady-state responses, phasors, impedance and admittance; power and energy, frequency responses, resonance. Pre: MATH 243 (or concurrent) or MATH 242 (or concurrent) and PHYS 272 (or concurrent); or consent. DP

EE 213 Basic Circuit Analysis II (4) (3 Lec, 1 3-hr Lab) Laplace transforms and their application to circuits, Fourier transforms and their applications to circuits, frequency selective circuits, introduction to and design of active filters, convolution, and state space analysis of circuits. A-F only. Pre: 211, and MATH 244 (or concurrent) or MATH 253A (or concurrent) or consent. DP

EE 260 Introduction to Digital Design (4) (3 Lec, 1 3-hr Lab) Introduction to the design of digital systems with an emphasis on design methods and the implementation and use of fundamental digital components. Pre: 160 or 110 or ICS 111 or consent. EE 296 Sophomore Project (V) Sophomore level individual or team project under EE faculty direction and guidance. The project provides design experience and develops practical skills. Repeatable unlimited times. Pre: sophomore standing or consent.

EE 315 Signal and Systems Analysis (3) Discrete-time and continuous time signals and systems, linear systems, convolution, Fourier series, Fourier transform, sampling. Pre: 213 and either MATH 244 or MATH 253A; or consent. DP

EE 323 Microelectronic Circuits I (3) Semiconduc-

EE 323L Microelectronic Circuits I Lab (1) (1 3-hr Lab) Experiments on linear and logic proper-

EE 324 Physical Electronics (3) Review of quan-

EE 326 Microelectronic Circuits II (3) Principles and design of linear and analog integrated circuits, including differential, operational, feedback, and tuned amplifiers; integrated circuits, current mirrors, signal generators, filters, and stability. Pre: 325. DP


EE 327 Theory and Design of IC Devices (3) Band structure models and carrier transport physics review. Theory and design of IC devices: Schottky diodes, bipolar devices (PN junction diodes, BJTs), FETs (MOSFETs, JFETs, and MESFETs). Pre: 324 and either MATH 245 or MATH 253A; or consent. DP

EE 328 Microcircuits Fabrication (3) Technology principles, materials, and methods for the design and fabrication of semiconductor devices, integrated circuits, and microelectromechanical systems. Pre: 327 or consent. Co-requisite: 328.

EE 328L Microcircuit Fabrication Lab (1) (1 3-hr Lab) Hands-on laboratory where students make vari-


EE 334L Networking I (4) (3 Lec, 1 3-hr Lab) Cov-

EE 351 Feedback-Control Systems (3) Analysis/ design of feedback systems. Compensator design via root locus and Bode analysis. Routh/ Nyquist stabil-

EE 351L Linear Feedback-Control Systems Lab (1) (1 3-hr Lab) Provides experience in applying theoretical tools to analyze linear systems. Extensive use is made of computer-aided analysis and design packages study system performance. Pre: 351. Co-

EE 361 Digital Systems and Computer Design (3) Design methodology, processor design, control design, memory organization, system organization. Pre: 160 and 260, or consent.

EE 361L Digital Systems and Computer Design Lab (1) (1 3-hr Lab) Laboratory for 361. Experi-

EE 366 CMOS VLSI Design (4) (3 Lec, 1 3-hr Lab) Introduction to the design of very large scale integrated (VLSI) systems and use of CAD tools and design languages. Lab includes hands-on use of CAD tools and experiments with field programmable logic devices. Pre: 260.

EE 367 Computer Data Structures and Algo-


EE 372 Engineering Electromagnetics II (3) Solu-

EE 372L Engineering Electromagnetics Lab (1) (1 3-hr Lab) Laboratory for 372L. Pre: 371 and PHYS 274 (or concurrent) or consent.

EE 396 Junior Project (V) Junior level individual or team project under EE faculty direction and guidance. The project provides design experience and develops practical skills. It may be a continuation of EE 296 or a new project. Repeatable unlimited times. Pre: 296 and junior standing or consent.

EE 406 Introduction to Computer and Network Security (3) Review basic network mechanisms, introduce basic cryptography concepts, and study algorithms and protocols used in computer and network security. Discuss practical security mechanisms. A-F only. (Once a year)

EE 415 Digital Signal Processing (4) (3 Lec, 1 3-hr Lab) Discrete-time signals and systems, sampling, Z-transform, transform, transform analysis of linear time-invariant systems, filter design, discrete Fourier transform, and computation of discrete Fourier transform. Repeatable one time. Pre: 315 and 342 (or concurrent) or consent.

EE 416 Introduction to Digital Image Processing (3) Image processing: image transformations, spatial filtering, filtering in the frequency domain, image restoration, color spaces and transforma-

EE 417 Introduction to Optimization (3) Applica-

Key to symbols & abbreviations: see the first page of this section.
bution systems. CE, EE, ME, or CBA majors only. Pre: MATH 307 or consent. (Alt. years)

EE 422 Electronic Instrumentation (3) Electronic circuits for interfacing with transducers, signal processing, and data acquisition. Amplifiers for measurement and control. Operational amplifiers in linear, nonlinear, and digital applications. Design project. Basic transducers. Pre: 326, 326L, and 371; or consent. DP

EE 422L. Instrumentation Lab (1) (1-3 hr) Laboratory for EE 422. Co-requisite: EE 422. DP


EE 425 Electronic Instrumentation II (3) Instrumentation systems and circuits for measurement, control, signal processing, transmission, and detection. Noise and interference. ADC/DAC, modulation demodulation, high-frequency and high-speed techniques. IC applications. Pre: 422 and 422L, or consent. DP

EE 426 Advanced Si IC and Solid State Devices (3) State of the art Si-based devices including advanced bipolar and MOS devices, heterojunction devices, and device trends. Topics from the most current literature included. Pre: 327 and either MATH 243 or MATH 253A. Pre-requisite. DP

EE 427 Computer-Aided Circuit Design (3) Application of the computer to the analysis, design, simulation, and construction of analog and digital circuits. Pre: 326 and 326L. Pre-requisite. DP

EE 435 Electric Power Systems (3) Design/operation of “the grid.” History of electric power systems, three-phase power, real and reactive power, transformers, transmission, distribution, circuit analysis, protection, load flow, load frequency control, optimal power flow, and renewable energy integration. Pre: MATH 243 (or concurrent) or MATH 253A (or concurrent). Pre-requisite. Fall

EE 438 Renewable Energy (3) Fundamentals of power, electric power grid and conventional electricity generation, Wind and solar power systems. Photovoltaic materials and systems. Distributed generation and energy storage, ENG majors only. Junior standing or higher. A-F only. Pre: 215 or consent. (Spring only) DP

EE 442 Digital Communications (3) Baseband transmission, intersymbol interference and pulse shaping, partial response signaling, equalization, bandwidth modulation, equalization, channel coding, synchronization, multiplexing and multiple access, spread spectrum techniques. Pre: 342 and 343, or consent.

EE 446 Information Theory and Coding (3) Models of communication systems. Channel noise, measurement, and coding of information. Intrinsic limits of performance of communication systems. Pre: 342 and 345, or consent.

EE 449 Computer Communication Networks (3) ISO/OSI model. Physical Layer, Data Link Layer, Network Layer and Transport Layer protocols. Wired and wireless local-area networks. Structure and operation of the Internet including routing, congestion control and flow control. Pre: 315 and one of 342, or MATH 371 or MATH 471; or consent.


EE 453 Modern Control Theory (3) Analysis and synthesis of nonlinear control systems by means of Lagrange’s equation, state-space techniques maximum principle. Lyapunov’s theorems, the phase plane, and Z-transform techniques. Optimization and adaptation by means of gradient methods, calculation of weights, system identification. Pre: 315 and 351, or consent.

EE 455 Design of Intelligent Robots (3) Study of the design principles of computer-controlled, intelligent robots such as roving vehicles, hand-eye systems. Pre: 351 and 367. DP


EE 467 Object-oriented Software Engineering (3) Introduction to advanced techniques for designing, implementing, and testing computer software with emphasis on object-oriented methods and techniques, analysis, and programming to produce high-quality computer programs that solve non-trivial problems. Pre: 367 or consent.

EE 468 Introduction to Operating Systems (3) Computer system organization; multiprocessor systems, memory hierarchies, assemblers, compilers, operating systems, virtual machine, memory management, processor management; information management. Pre: 361 (or concurrent) and 367 or consent.

EE 469 Wireless Data Networks (3) Mobile agent’s platforms and systems, mobile agent-based service implementation, middleware, and configuration, wireless local area networks, wireless protocols, network architecture supporting wireless applications, routing protocols, and wireless network handoff in mobile and wireless networks. Pre: 344 and 367, or consent.

EE 470 Physical Optics (3) Fundamentals of classical physical optics emphasizing linear systems theory, including diffraction, polarization, and interference phenomena, temporal coherence, interference and diffraction (Fourier optics). Specialized applications include Gaussian beams, laser resonators, pulse propagation, and nonlinear optics. Pre: 372 (or concurrent with a minimum grade of C-) or PHYS 450 (or concurrent with a minimum grade of C), or consent. (Cross-listed as PHYS 460) DP

EE 471 Computational Techniques in Electromagnetics (3) Introduction to computational methods used to solve problems in electromagnetics. Special emphasis on both numerical techniques and the underlying physics. Pre: 326L and 371. DP


EE 475 Optical Communications (3) Principles and applications of optical fibers and waveguides. Fundamentals of optical communication systems (optical links, high-speed systems, wavelength-division-multiplexing networks, and network elements) and optical components (guided-wave circuits, lasers, detectors, and optical amplifiers). System and network integration issues. A-F only. Pre: 372 or consent.

EE 477 Fundamentals of Radar, Sonar, and Navigation Systems (3) 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 equivalent), and familiarity with waveguides or waveguide theory. DP

EE 480 Introduction to Biomedical and Clinical Engineering (3) Application of engineering principles and technology to biological and medical problems. Introduction to anatomy, physiology, medical terminology, clinical measurements. Systems modeling, physiological control systems, computer applications, health-related problems. Pre: 213 and either MATH 244 or MATH 253A.


EE 482 Biomedical Instrumentation (3) (2 Lec, 1-3 hr Lab) Principles, applications, and design of biomedical instrumentation. Transducers, ICs, and microcomputer applications, patient safety. Pre: 326, 480; or consent.

EE 491 (Alpha) Special Topics in Electrical Engineering (3) Content will reflect special interests of visiting department faculty, including topics toward juniors and seniors. (B) artificial intelligence; (C) circuits; (D) communications; (E) computer hardware; (F) computer software; (G) computer vision; (H) control; (I) devices; (J) fields; (K) power. Repeatable unlimited times. Pre: consent.

EE 494 Provisional Topics (3) Upper division course with subject matter to be announced.

EE 495 Ethics in Electrical Engineering (1) Equip electrical engineers with the necessary background for ethical reasoning, as it pertains to technology, society, workplace issues, and the environment. EE majors only. A-F only. Pre: senior standing or consent. (Once a year)

EE 496 Capstone Design Project (V) Significant project integrating the design content of previous courses and incorporating realistic constraints and creative thought. Written report must document all aspects of the design process: reliability, safety, economics. Repeatable unlimited times. A-F only. Pre: 396 or consent.

EE 499 Directed Reading (V) Investigation of advanced engineering problems. Repeatable unlimited times. Pre: senior standing and consent.

EE 500 Master’s Plan B/C Studies (1) Repeatable unlimited times. Pre: senior standing and consent.

EE 602 Algorithm I (3) Design and evaluation of machine representation, techniques and algorithms for sorting, pattern processing, computational geometry, mathematical computations, and engineering applications. Introduction to computational issues of time, space, communication, and program correctness. Pre: 367 or consent.

EE 604 Artificial Intelligence (3) LISP for machine intelligence applications, or related constraint object and logic-oriented languages. Pre: 467 or knowledge of LISP/PROLOG.

EE 606 Intelligent Autonomous Agents (3) Theory, methods and practical applications of autonomous agent systems, including common applications of both software and hardware (robotic) agents. In-depth practical experience with autonomous agents through programming assignments and projects. Pre: 467 or ECS 313 (or equivalent), graduate standing; or consent. (Once a year) (Cross-listed as ICS 606)

EE 607 Advanced Network Algorithms (3) Network algorithms, protocols, and packet switching systems for the internet including TCP/IP, routing algorithms, transmission, and link management, buffer management, and simple network management. Pre: 367 or consent.

EE 608 Optical Networks (3) Propagation of signals in fibers, components, modulation and demodulation, transmission and optical networking, network systems and architectures, network design, control and management and packet switching. Pre: 342, 367, and 371 or consent.

EE 609 Computer and Network Security (3) Basic security theory, current emerging research issues. First covering the fundamentals of computer and network security, then work on research projects on computer and network security. EE 615 Advanced Digital Signal Processing (3) An advanced course on advanced topics in digital signal processing. Topics include fast DFT algorithms, multirate systems and filter banks, power spectrum estimation, linear prediction, optimum linear filters, and adaptive filtering. A-F only. Pre: Open to nonmajors for CR/NCR only. Pre: 415 or 640 or consent.
EE 616 Digital Image Processing (3) Human visual perception, image formation, sampling and quantization, enhancement and restoration, color image processing, wavelets and multiresolution representations, image and video compression. Pre: 415 or equivalent.

EE 617 Linear and Convex Optimization (3) Algorithms for linear, nonlinear, and convex optimization. Emphasis is on methodology and the underlying mathematical and numerical techniques. Topics include simplex method, network flow problems, optimality conditions, duality, Newton’s method and interior point methods. EE, ME, MIS and MATH majors only. Pre: MATH 311 or consent. (Alt. years)

EE 618 Dynamic Programming and Stochastic Control (3) Pre: PEE 541 or equivalent. Control of stochastic dynamic systems. Applications in linear-quadratic control, inventory control, resource allocation, scheduling, and control of queues. Rollout and other suboptimal methods. Value and policy iteration. Pre: 342 or MATH 371 or MATH 471, or consent.


EE 621 Advanced Solid-State Devices (3) Advanced physical principles and design of modern solid-state electronic devices. Heterostructures, photodetectors, LED, junction lasers, and other devices of current importance identified from the current literature. Pre: 327.

EE 622 Optical Electronics I (3) Fundamentals of optical radiation, including stimulated and spontaneous processes. Optical electronics including optical resonators, lasers, optical detectors, light-guiding, and applications. Pre: 327 or consent.

EE 624 Microsensors and Microactuators I (3) Technology methods and physical principles of microsensors and microactuators. Vacuum technology, thin film deposition and characterization techniques, solid mechanics, micromachining, acoustics, piezoelectricity and principles of current microtransducers. Pre: 327 or consent.

EE 627 Advanced Topics in Physical Electronics (3) Recent developments in phenomena and devices of physical electronics. Pre: 327.


EE 642 Detection and Estimation Theory (3) Fundamentals of signal detection and estimation theory. Hypothesis testing, parametric and nonparametric detection, sequence detection, parametric estimation, linear estimation, robust detection and estimation, and applications to communication systems. Pre: 640.


EE 644 Computer Communication Networks (3) Fundamentals of computer communication networks including modeling, performance evaluation, routing, flow control, local area networks, distributed algorithms, and optimization algorithms. Pre: 342, MATH 371; or equivalent.

EE 645 Machine Learning (3) Learning theory, pattern recognition and regression; gradient based algorithms and least square algorithms; Kernel methods; Bayesian learning algorithms; ensemble learning and boosting; principal component analysis; independent component analysis, and clustering; reinforcement learning and approximate dynamic programming. EE, ME, ICS, MATH majors only. Pre: 342.

EE 646 Advanced Information Theory (3) Measure of information, coding for discrete sources, discrete memoryless channels and capacity, the noisy channel coding theorem, source coding with fidelity criteria, state-distribution theory, multiuser channels. Pre: 640.

EE 648 Error-Control Coding I (3) Linear block codes, soft and hard decision decodings, correction of random errors, cyclic codes, BCH codes, Reed-Solomon codes, majority logic decodable codes, burst-error correcting codes, concatenated codes. Pre: MATH 311 or consent.

EE 649 Error-Control Coding II (3) Convolutional codes, Viterbi algorithm, coded modulation, multistage decoding, concatenated coded modulation, probabilistic decoding, turbo codes, low density parity check codes and iterative decoding. Pre: 648.

EE 650 Linear System Theory (3) State space theory of linear systems, controllability, observability, stability, irreducible realizations. Pre: 452.


EE 668 Telecommunication Networks (3) Telecommunication-network architecture; switching, broadcast, and wireless networks; protocols, interfaces, routing, flow- and congestion-control mechanisms; intelligent networking; service creation capabilities; multimedia, voice, data, and video networks and services. Pre: 648 or consent.

EE 671 Electromagnetic Theory and Applications (3) Solutions of Maxwell’s equations and applications to radiation and propagation of electromagnetic waves. Pre: 372 or consent.

EE 673 Advanced Microwave Engineering (3) Advanced RF and microwave circuit design for wireless applications. Pre: 473 or consent.

EE 675 Advanced Computational Techniques in Electromagnetics (3) Develop comprehensive understanding of computations techniques for solving engineering electromagnetic problems formulated in terms of integral or differential equations. Eigenvalue problems, radiation, and electromagnetics scattering problems will be discussed and computer programing is required. EE, BE, and CENG majors only. A-F only. Pre: 471 (with a minimum grade of B) or consent. (Spring only)


EE 681 Biosensors and Bioelectronics (3) Advanced topics in the design of biological detection technologies. Topics include fundamentals of electrochemistry, electrochemical biosensors, DNA and protein biosensors, and bioelectrodes for bio-signal conditioning and processing. Pre: 324 and 326, or consent. (Once a year)

EE 682 Biomedical Microdevices (3) Design and fabrication of micro- and nanodevices for biomedical applications. Topics include micro and nanoelectromechanical systems, microfluidic physics and microfluidic devices, and micro- and nanoscale fabrication techniques. ENG majors only. A-F only. Pre: 324 or consent. (Fall only)

EE 685 Biomedical Signal Processing and Analysis (3) Biomedical signals, digital filters and filter banks, spike train analysis, time-scale and time-frequency representations, nonlinear techniques, Lom ’ s algorithm and the Hilbert transform, modeling. Volterra series, Wiener series, Poisson-Wiener series, multichannel data, causality. CE, EE, ME, ICS majors only and any graduate student in JABSON who has a suitable technical background. Pre: 415 or consent. (Spring only)

EE 693 (Alpha) Special Topics in Electrical Engineering (3) Content will reflect special interests of visiting/permanent faculty. (B) artificial intelligence; (C) circuits; (D) communications; (E) computer hardware; (F) computer software; (I) devices; (J) fields; (K) power. Repeatable unlimited times. Pre: consent.

EE 699 Directed Reading or Research (V) Repeatable unlimited times. CR/NC only. Pre: graduate standing and consent.


EE 790 Directed Instruction (V) Student assists in classroom instruction under direction and close supervision of faculty member. CR/NC only. Pre: admission to PhD candidacy.


Programming (ENGR)

ENGR 100 Introduction to Engineering (3) Overview of the engineering field, the different disciplines, and opportunities. Success strategies for studying engineering. Repeatable one time. CR/NC only.

ENGR 101 Introduction to Engineering (3) Topics include the engineering disciplines, the development of problem solving and technical communication skills, the design process and analysis methods using a team design project, and introduction to programming in Matlab for engineering applications. ENGR majors only. Freshman standing only.

ENGR 250 Personal Development for Effective Teams (3) Exploration and application of basic leadership theories and processes which foster personal and interpersonal interactions. Introduction to cognitive experiential classroom methods and mentorship relationships with experienced peers. (Cross-listed as IS 250)

ENGR 350 Career Development Seminar (1) Introduction to career development as it pertains to engineering and business industry; client relations, networking, job skills, career assessment and direction. Repeatable one time. (Fall only)

ENGR 401 Engineering Management (3) Introduction to engineering management with emphasis on development of skills for professional advancement. Repeatable one time.

ENGR 493 Field Experience (1) Supervised internship in engineering practice under professional and faculty direction. Repeatable one time. CR/NC only. Pre: junior standing in engineering and consent.

English (ENG)

College of Language, Linguistics and Literature

ENG 100 Composition I (3) Introduction to the rhetorical, conceptual and stylistic demands of writing at the university level; instruction in composing processes, searching strategies, and writing from sources. Students may not earn credit for both ENG 100 and 190. Pre: placement. Freshmen only. FW

ENG 190 Composition for Transfer Students to UH Mānoa (3) Introduction to the rhetorical, conceptual and stylistic demands of writing at the university level; instruction in composing processes, searching strategies, and writing from sources. Restricted to students with more than 24 credits. Students may not earn credit for both ENG 100 and 190. A-F only. Pre placement. FW
ENG 336 American Literature to Mid-19th Century (3) Basic concepts and representative texts for the study of prose, poetry, and drama in American literature through the 19th century. Pre: one ENG DL course or consent. DL
ENG 333 19th Century Literature in English (Except American) (3) Basic concepts and representative texts for the 19th century in English, poetry, and drama. Pre: one ENG DL course or consent. 
ENG 332 Restoration/18th Century Literature in English (Except American) (3) Basic concepts and representative texts for the study of poetry, prose, and drama in English from 1660 to 1780. Pre: one ENG DL course or consent. 
ENG 331 Renaissance Literature in English (Except American) (3) Basic concepts and representative texts for the study of poetry, prose, and drama in English from 1500 to 1660. Pre: one ENG DL course or consent. 
ENG 330 Medieval Literature (3) Basic concepts and representative texts for the study of the Middle Ages and the Renaissance. Pre: one ENG DL course or consent. 
ENG 329 Literatures of Hawai'i (3) Basic concepts and representative texts for the study of Hawaiian and/or Pacific texts in cultural and historical contexts. Restricted to ENG majors and Secondary Education-English majors only. Prerequisite to 400-level work for ENG majors. Pre: one ENG DL course or consent. DL
ENG 328 Native Hawaiian Literature (3) Basic concepts and representative texts for the study of Native Hawaiian literature, ancient to contemporary, in translation and in English, that demonstrate the depth and breadth of the Native Hawaiian literary tradition. Pre: one ENG DL course or consent. 
ENG 327 Race, Ethnicity, and Literature (3) Basic concepts and representative texts for the study of race and ethnicity as the basis for literary inquiry. Pre: one ENG DL course or consent. 
ENG 326 Shakespeare and Folklore in Translation (3) Philippine folk literature translated into English; epic, myths, legends, and other folklore. Classtics works of vernacular writers. Pre: one ENG DL course or consent. (Cross-listed as IP 363) 
ENG 325 William Shakespeare (3) Basic concepts and representative texts for the study of Shakespearean drama and poetry. Pre: one ENG DL course or consent. (Cross-listed as WS 375) 
ENG 324 Children's Literature (3) Basic concepts and representative texts for the study of popular literature genres, such as detective fiction, science fiction, the thriller, the romance, and westerns. Pre: one ENG DL course or consent. 
ENG 323 Povestnic (3) Basic concepts and representative texts for the study of Povestnic and other story-telling traditions. Pre: one ENG DL course or consent. 
ENG 322 Prose Fiction (3) Basic concepts and representative texts for the study of prose fiction genres such as short story and novel. Pre: one ENG DL course or consent. 
ENG 321 Introduction to Rhetoric I (3) Theory and practice of written argument; emphasis on the role of invention in argumentative discourse and on the nature of rhetorical proof. Pre: FW and either 200 or one ENG DL course or consent. 
ENG 320 Business Writing (3) Practice in informative, analytical, persuasive writing. Pre: FW. Students may not earn credit for both ENG 209 and BUS 209. 
ENG 319 Creative Writing (3) Practice in creative writing. Pre: FW and either 200 or one ENG DL course or consent. 
ENG 317 Introduction to Literature: Genre (3) Study of significant works of selected genres. A significant portion of class time is dedicated to writing instruction. Repeatable one time. Requires a minimum of 4,000 words of graded writing. Pre: FW. 
ENG 316 Introduction to Literature: Theory (3) Functions of invention in argumentative discourse and on the practice of written argument; emphasis on the role of invention in argumentative discourse and on the nature of rhetorical proof. Pre: FW and either 200 or one ENG DL course or consent. 
ENG 315 American Literature Since Mid-20th Century (3) Basic concepts and representative texts for the study of American literature from the middle of the 19th century to the middle of the 20th century. Pre: one ENG DL course or consent. 
ENG 314 Asian American Literature (3) Basic concepts and representative texts for the study of African American literature by writers from a variety of backgrounds. Pre: one ENG DL course or consent. (Cross-listed as ES 372) 
ENG 313 Literature of the Pacific (3) Basic concepts and representative texts for the study of the literature of the Pacific, including Pacific voyagers and contemporary writings in English by Pacific Islanders. Pre: one ENG DL course or consent. (Cross-listed as PACS 371) 
ENG 312 American Literature in English (Except American) (3) Basic concepts and representative texts for the study of American literature in translation and in English, that demonstrate the depth and breadth of the Native Hawaiian literary tradition. Pre: one ENG DL course or consent. 
ENG 311 Introduction to Rhetoric I (3) Theory and practice of written argument; emphasis on the role of invention in argumentative discourse and on the nature of rhetorical proof. Pre: FW and either 200 or one ENG DL course or consent. 
ENG 309 Technical Writing (3) Introduction to technical and computer-based writing and reading technologies. Study of principles of traditional and multimedia essays. Pre: one ENG DL course or consent. 
ENG 308 Technical Writing (3) Combined lecture/lab preparing students to write about technical subjects for specialists and laypersons. Introduces theory of technical communication and document design and teaches students to make use of relevant technology. A-F only. Pre: FW and either 200 or one ENG DL course or consent. 
ENG 306 Argumentative Writing I (3) Theory and practice of written argument; emphasis on the role of invention in argumentative discourse and on the nature of rhetorical proof. Pre: FW and either 200 or one ENG DL course or consent. 
ENG 305 Modern English Grammar (3) Introduction to the structure of present-day English for native speakers and advanced non-native speakers. Pre: one ENG DL course or consent. 
ENG 304 Argumentative Writing I (3) Theory and practice of written argument; emphasis on the role of invention in argumentative discourse and on the nature of rhetorical proof. Pre: FW and either 200 or one ENG DL course or consent. 
ENG 303 Modern English Grammar (3) Introduction to the structure of present-day English for native speakers and advanced non-native speakers. Pre: one ENG DL course or consent. 
ENG 302 History of the English Language (3) Basic concepts and methods for the study of the English language; general history of the language; grammar and usage; issues of language diversity and standardization; English as a world language. Pre: one ENG DL course or consent. 
ENG 301 Historical Linguistics (3) Historical development of the English language; etymology; cognates; sound changes; language change and contact; development of the English language; general history of the language; grammar and usage; issues of language diversity and standardization; English as a world language. Pre: one ENG DL course or consent. 
ENG 300 Historical Linguistics (3) Historical development of the English language; etymology; cognates; sound changes; language change and contact; development of the English language; general history of the language; grammar and usage; issues of language diversity and standardization; English as a world language. Pre: one ENG DL course or consent. 
ENG 279 Introduction to Literature: World Literature (3) Study of significant works of selected historical periods. A significant portion of class time is dedicated to writing instruction. Repeatable one time. Requires a minimum of 4,000 words of graded writing. Pre: FW. 
ENG 278 Introduction to Literature: World Literature (3) Study of significant works of selected historical periods. A significant portion of class time is dedicated to writing instruction. Repeatable one time. Requires a minimum of 4,000 words of graded writing. Pre: FW. 
ENG 277 Introduction to Literature: Creative Writing and Literature (3) Study of significant works through analytical and creative writing. Repeatable one time. Pre: FW. No waiver. 
ENG 276 Introduction to Literature: Creative Writing and Literature (3) Study of significant works through analytical and creative writing. Repeatable one time. Pre: FW. 
ENG 275 Introduction to Literature: Creative Writing and Literature (3) Study of significant works through analytical and creative writing. Repeatable one time. Pre: FW. 
ENG 273 Introduction to Literature: Critical Theory (3) Functions of invention in argumentative discourse and on the practice of written argument; emphasis on the role of invention in argumentative discourse and on the nature of rhetorical proof. Pre: FW and either 200 or one ENG DL course or consent. 
ENG 272 Introduction to Literature: Culture and Literature (3) Study of significant works of selected cultures and historical periods. A significant portion of class time is dedicated to writing instruction. Repeatable one time. Requires a minimum of 4,000 words of graded writing. Pre: FW. 
ENG 271 Introduction to Literature: Genre (3) Study of significant works of selected genres. A significant portion of class time is dedicated to writing instruction. Repeatable one time. Requires a minimum of 4,000 words of graded writing. Pre: FW.
ENG 385 Fairy Tales and Their Adaptations (3) Comparative analysis of selected tales of magic and their adaptations across history, cultures and media such as book illustration and film. Pre: one ENG DL course or consent. 

ENG 403 Studies in Old/Middle English Literature (3) Intensive study of selected problems, issues, writers, traditions, or movements in the field of Old/Middle English literature. Repeatable one time. Pre: 320 and one other 300-level ENG course or consent. DL

ENG 404 English in Hawai‘i (3) English language in Hawai‘i viewed historically and in a multicultural context, with attention to politics, religion, race, and education, from 1820 to present. Pre: two ENG DL courses or consent. Recommended: 306.

ENG 405 Teaching Composition (3) Theory, observation, and practice in teaching writing, especially the use of one-on-one and small group instruction. Repeatable three times. CR/NC only. Pre: 405 or consent.

ENG 406 Argumentative Writing II (3) Extended study of both the philosophical and practical dimensions of written reasoning. Emphasis on argument as a process of critical thinking. Pre: ENG 405 or consent. DA

ENG 407 Writing for Electronic Media (3) Combined lecture/lab on writing and rhetoric in computer-mediated communication. May include online technical writing, coursework development, hypertext fiction. Pre: two ENG DL courses or consent. 

ENG 408 Professional Editing (3) Discussion and practice in the professional editing of articles, reports, books, logic, clarity, coherence, consistency of tone and style, grammar, or persuasion. Pre: 303, 306, 311, 313, or 405; or consent.

ENG 409 Studies in Composition/Rhetoric/Language (3) Intensive study of selected topics, problems, themes, issues, and/or writers in composition, rhetoric, and/or English language. Repeatable one time. Pre: 320 and one other 300-level ENG course or consent. DL

ENG 410 Form and Theory of Poetry (3) Poetic theories and techniques for students interested in writing poetry or those writing poetry for general study. Pre: 306 or 313; or consent. DA

ENG 411 Form and Theory of Fiction (3) Narrative techniques for students interested in writing fiction. Pre: 313 or consent. DL

ENG 412 Nonfiction Writing (3) Workshop analysis of nonfiction as a literary form. Repeatable one time. Pre: 306 or 313; or consent. DA

ENG 413 Form and Theory of Fiction (3) Narrative techniques for students interested in writing fiction. Pre: 313 or consent. DL

ENG 414 Fiction Workshop (3) Writing, evaluating fiction. Repeatable one time. Pre: 410 or consent. DA

ENG 416 Studies in Creative Writing (3) Intensive study of selected topics, problems, themes, writers, or modes of creative writing in a workshop setting. Repeatable one time. Pre: 313 and 410, 412, or 413; or consent. DA

ENG 420 Studies in Literature and Culture (3) Intensive study of selected problems, issues, writers, traditions, or movements in the field of comparative literature. Repeatable one time. Pre: 320 and one other 300-level ENG course or consent. DL

ENG 421 Studies in Comparative Literature (3) Intensive study of selected problems, issues, writers, traditions, or movements in the field of comparative literature. Repeatable one time. Pre: 320 and one other 300-level ENG course or consent. DL

ENG 427 Studies in Literary Criticism and Theory (3) Intensive study of selected problems, issues, writers, traditions, or movements in the field of literary criticism and critical theory. Repeatable one time. Pre: 320 and one other 300-level ENG course or consent. DL

ENG 430 Studies in Medieval Literature (3) Intensive study of selected problems, issues, writers, traditions, or movements in Old/ Middle English literature after 500-1500, including works in modern translation. Repeatable one time. Pre: 320 and one other 300-level ENG course or consent. DL

ENG 431 Studies in 16th and 17th Century Literature (3) Intensive study of selected problems, issues, writers, traditions, or movements in texts written during the period 1560-1700. Repeatable one time. Pre: 320 and one other 300-level ENG course or consent. DL

ENG 432 Studies in 18th Century Literature (3) Intensive study of selected problems, issues, writers, traditions, or movements in texts written during the period 1660-1830, the “long” 18th century. Repeatable one time. Pre: 320 and one other 300-level ENG course or consent. DL

ENG 433 Studies in 19th Century Literature (3) Intensive study of selected problems, issues, writers, traditions, or movements in texts written during the 19th century. Repeatable one time. Pre: 320 and one other 300-level ENG course or consent. DL

ENG 434 Studies from 20th Century to Present (3) Intensive study of selected problems, issues, writers, traditions, or movements in texts written from the 20th century to the present. Repeatable one time. Pre: 320 and one other 300-level ENG course or consent. DL

ENG 440 Single Author (3) Intensive study of the works and literary milieu of a single author considered significant by most scholars in English Studies. The English Department maintains a list of versions focusing on specific authors. Repeatable one time for a different author, with consent. Pre: two ENG DL courses or consent. DL

ENG 442 Geoffrey Chaucer (3) Intensive study of the works and life of Geoffrey Chaucer. Pre: two ENG DL courses or consent. DL

ENG 445 William Shakespeare (3) Intensive study of the works and literary milieu of William Shakespeare. Repeatable one time. Pre: two ENG DL courses or consent. DL

ENG 447 John Milton (3) Intensive study of the works and literary milieu of John Milton. Pre: two ENG DL courses or consent. DL

ENG 455 U.S. Women’s Literature and Culture (3) Reading of selected works of U.S. women’s literature and cultural texts (such as art and film). Emphasis on historical and cultural context and diverse expressions of women’s gendered identities. (Cross-listed as AMST 455 and WS 445) DL

ENG 460 Studies in Fiction (3) Intensive study of selected problems, issues, writers, traditions, or movements in prose fiction. Repeatable one time. Pre: 320 and one other 300-level ENG course or consent. DL

ENG 461 Studies in Poetry (3) Intensive study of selected problems, issues, writers, traditions, or movements in poetry. Repeatable one time. Pre: 320 and one other 300-level ENG course or consent. DL

ENG 462 Studies in Drama (3) Intensive study of selected problems, issues, writers, traditions, or movements in drama. Repeatable one time. Pre: 320 and one other 300-level ENG course or consent. DL

ENG 463 Studies in Film (3) Intensive study of selected topics in film, e.g.: genres, major filmmakers, film theory/criticism, or film and literature. Repeatable one time. Pre: 320 and one other 300-level ENG course or consent. DL

ENG 464 Studies in Life Writing (3) Intensive study of forms and theories of life writing in forms such as biographies, autobiographies, oral histories, diaries, journals, letters, film, drama, and portraiture. Repeatable one time. Pre: 320 and one other 300-level ENG course or consent. DL

ENG 470 Studies in Asian American and Asian Diaspora Literatures (3) Intensive study of selected problems, issues, traditions, genres, or writers relating to Asia. Pre: 320 and one other 300-level ENG course or consent. DL

ENG 471 Studies in Postcolonial and Diasporic Literature (3) Intensive study of selected problems, issues, traditions, genres, or writers in postcolonial literatures and of the literary, cultural, and theoretical issues of diasporic experiences such as immigration, assimilation, nation, and transnationalism. Repeatable one time. Pre: 320 and one other 300-level ENG course or consent. DL

ENG 474 Studies in Pacific Literature (3) Intensive study of selected questions, issues, traditions, writers, movements, or genres in the field of Pacific Literature. Repeatable one time. Pre: 320 and one other 300-level ENG course. (Cross-listed as PACS 474) DL

ENG 479 Modern Pacific Women’s Poetry (3) Critical examination of modern indigenous women’s poetry from the Pacific Islands. Thematic concentration on land, family, sexual and national oppression. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 480 Studies in Literature and Folklore (3) Intensive study of selected problems, issues, traditions, or genres in folklore and oral traditions and their performance and transformations within specific social and cultural contexts. Repeatable one time. Pre: 320 and one other 300-level ENG course; or consent. DL

ENG 481 Studies in Literature and Popular Culture (3) Intensive study of selected problems, issues, traditions, writers, movements, or genres in the field of popular literature and/or popular culture. Repeatable one time. Pre: 320 and one other 300-level ENG course or consent. DL

ENG 482 Studies in Literature and Sexuality and Gender (3) Intensive study of selected problems and issues in the construction and representation of sexuality and gender in specific genres, social and cultural contexts, or thematic/literary contexts. Repeatable one time. Pre: 320 and one other 300-level ENG course; or consent. DL

ENG 490 Teaching Composition (3) Supervised participation in instruction or tutoring. A-F only. Pre: two ENG DL courses or consent. DL

ENG 492 Teaching Practicum (3) Supervised participation in instruction or tutoring. CR/NC only. Repeatable two times. Pre: graduate standing and consent. 

ENG 493 Internship (3) Faculty supervised participation in the operations of an organization. A-F only. Pre: two ENG DL courses, junior standing, or consent. 

ENG 499 Directed Reading (V) Repeatable up to six credits. A-F only. Pre: two ENG DL courses or consent. 

ENG 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent. 

ENG 550 Supervised Teaching Practicum (1) Supervised participation in instruction or tutoring. CR/NC only. Repeatable two times. Pre: graduate standing and consent. 

ENG 560 HWP Summer Writing Institute (V) Repeatable one time. 

ENG 561 HWP Summer Institute WAC (V) Practicum in the current best approaches to teaching writing across the curriculum. Participants write, read, and publish theory and research in composition and demonstrate effective writing lessons. Repeatable one time. Graduate standing or consent is required for all courses numbered 600 and above for which no specific prereq is listed. 

ENG 601 Old English (3) Structure of the language, relation to present English; reading of selected prose and poetry. 

Key to symbols & abbreviations: see the first page of this section.
ENG 605 Theory and Practice of Teaching Composition (3) Major contemporary theorists and classroom practices that evolve from their theories; observation and applications.

ENG 610 Elements of Creative Writing (3) Intensive study of the craft and technique of creative writing through readings in poetry, fiction, creative nonfiction, and creative writing pedagogy. A-F only. Pre: graduate standing or consent. (Fall only)

ENG 613 (Alpha) Graduate Writing Workshop (3) Advanced practice and critical evaluation of the writing of poetry, fiction, or creative nonfiction. (B) poetry; (D) fiction; (D) nonfiction. Repeatable one time in each English graduate degree. Pre: graduate standing plus 411 for (B); 414 for (C); 412 for (D); or consent.

ENG 625 (Alpha) Theories and Methods (3) Required course in the MA student’s area of concentration. (B) theories and methods of literary study; (C) introduction to composition and rhetoric; (D) foundations of critical-theoretical criticism; (E) essays in cultural studies. Repeatable in different alphas. Pre: graduate standing or consent. (Spring only)

ENG 627 (Alpha) Literary Theory and Criticism (3) (B) classical period through 18th century; (C) Romantic and post-Romanticist.

ENG 664 Biography (3) Study of one or more authors, English or American literature. Repeatable one time. A-F only. Pre: graduate standing or consent.

ENG 691 MA Final Project (V) Individual reading and research towards preparation of MA project. 3 credit hours required. CR/NC only. Repeatable one time. Pre: 625 and consent.

ENG 699 Directed Reading (V) Individual reading or research. Repeatable with consent of Graduate Director. Pre: graduate standing and consent.

ENG 700 Thesis Research (V) Repeatable unlimited times. Pre: graduate standing and consent.

ENG 705 Seminar in Composition Studies (3) Intensive study of selected issues in composition studies. Repeatable one time. Pre: 625C or consent.

ENG 709 Seminar in Rhetoric (3) Intensive study of selected topics in the history of rhetoric, rhetorical theory, and rhetorical criticism; topic to be announced. Repeatable one time. Pre: 625C or consent.

ENG 713 Seminar in Creative Writing (3) Advanced study in creative writing focused on thesis and dissertation. Repeatable one time in each English graduate degree. Pre: 613 or consent.

ENG 716 (Alpha) Seminar in Techniques in Contemporary Literature (3) The study, from the point of view of the creative writer, of works written within the last 50 years in fiction; (C) techniques in poetry; (D) techniques in creative nonfiction. Repeatable one time in each ENG graduate degree. Pre: 613 or consent.

ENG 727 Seminar in Literary Criticism (3) Intensive study of selected topics in literary theory and its practical application; topics to be announced. Repeatable two times. Pre: graduate standing or consent.

ENG 730 (Alpha) Seminar in Literature and Politics (3) Study of authors or a period. (B) American modernism; (C) race in American literature; (D) 19th century American literature; (E) American literature naturalism; (F) African American literature and theory; (G) American transcendentalism; (H) 19th century American novel; (I) contemporary American poetry; (M) poetry by 20th century American women; (N) women writers and multiculturalism; (Q) Asian American literature and theory; (R) relocating American literature; (S) early American literature; (T) H. Melville and T. Morrison. Repeatable one time for different alphas.

ENG 740 (Alpha) Seminar in Major Author (3) Study of one or more authors, English or American. (C) George Eliot; (D) Emily Dickinson; (M) Milton; (S) Chaucer and his backgrounds; (T) Austen; (U) Yeats and his circle; (V) F. O’Neill’s dramatic; (W) Virginia Woolf. Repeatable one time. A-F only. Pre: graduate standing or consent.

ENG 745 Seminar in Shakespeare (3) Intensive study of Shakespeare.

ENG 760 (Alpha) Seminar in Literary Genres (3) Study of selected more authors, English and American literature. (C) neoclassicism; (D) tragedy; (E) modern American short story; (F) sonnet and sonnet sequences; (G) Rest. 18th century dramatic genre; (H) 18th century literature and its role; (I) medieval drama; (J) sonnet sequence and criticism; (K) reinventing the author; (M) laughter and the comic arts; (N) nature of romance; (P) Victorian novel; (Q) Jacobean drama; (R) science fiction; (S) essay, nature, and present; (T) English in Western culture; (U) 18th century British novels; (V) English romanticism; (Z) English novel and criticism. Repeatable one time. A-F only. Pre: graduate standing or consent.

ENG 763 Seminar in Film Theory and Criticism (3) Classic theories of representation and aesthetics; modern and contemporary cultural, psychoanalytic, and aesthetic theories as they apply to film.

ENG 764 Seminar in Life Writing (3) Intensive study of critical and theoretical issues raised by various forms of life writing (biography, autobiography, oral history, diaries, etc.) and of their history and methodology. Repeatable one time.

ENG 770 Seminar in Cultural Studies in Asia/ Pacific (3) Intensive study of selected issues in cultural studies in Asia and the Pacific; topics to be announced. Repeatable one time.

ENG 771 Seminar in Pacific Literatures (3) Intensive study of selected issues in the literatures of the Pacific in English and translated into English. Topics to be announced. Repeatable one time. Pre: graduate standing or consent. (Spring only)

ENG 772 Seminar in Literatures of Hawai‘i (3) Introduction to comparative literature; relationship of Hawai’i to other literatures; sources and influences. Repeatable one time.

ENG 773 Seminar in Hawaiian Literature (3) Intensive study of selected issues, genres, and traditions in Hawaiian literature written in English or translated from Hawaiian into English. Repeatable one time. Pre: graduate standing or consent. (Fall only)

ENG 775 Seminar in Cultural Studies (3) Intensive study of selected issues in cultural studies and cultural and social theory; topics to be announced. Repeatable one time.

ENG 780 (Alpha) Seminar in Comparative Literature (3) Introduction to comparative literature; relationship of English to other literatures; sources and influences. (B) African literature; (C) folklore and literature; (G) theory/practice of poetry; (H) contemporary drama; (I) mythic method; (J) postmodern fiction; (M) modernism; (N) colonial/postcolonial; (P) postmodernism and postcolonialism; (W) medieval women writers. Repeatable one time for different alphas.

ENG 790 Seminar in Special Topics (3) Content to be announced. Repeatable five times.

ENG 800 Dissertation Research (V) Pre: graduate standing and consent. Repeatable nine times.

English as a Second Language (ESL) ESL College of Languages, Linguistics and Literature ESL 100 Composition I for Second Language Writers (3) Extensive practice in writing expository essays; linguistic devices that make an essay effective. (Fulfills composition requirement for nonnative speakers of English only.) FW

Key to symbols & abbreviations: see the first page of this section.

English Language Institute (ELI) College of Languages, Linguistics and Literature Initial placement in ELI courses is by examination only. A grade of CR (credit) is prerequisite to promotion or exemption. Normal course sequence is 70, 80, 72, 82, 73, 83 or ELI 100.

ELI 070 Intermediate Academic Listening and Speaking (0) Introduction to the academic English-language listening/speaking demands required at the university. Instruction and practice of effective note-taking skills, listening strategies, delivery of presentations, and participation in academic discussions. Designed as a bridge to ELI 080.

ELI 072 Intermediate Academic Reading (0) Instruction to the academic English-language reading demands required at the university. Instruction and practice of effective means to understand text patterns, increase reading efficiency and comprehension, and develop vocabulary. Designed as a bridge to ELI 082.

ELI 073 Intermediate Academic Writing (0) Extensive practice in expository writing. Analysis and use of rhetorical devices. Individual conferences and tutoring as required.

ELI 080 Advanced Academic Listening and Speaking (0) Further development of the academic English-language listening/speaking skills and strategies required at the university. Instruction and practice of effective note-taking skills, critical listening strategies, delivery of effective academic presentations and leading of academic discussions. Pre: 070 or placement by examination.

ELI 082 Advanced Academic Reading (0) Further development of skills and strategies for dealing with the high demands of academic reading by focusing on becoming efficient and autonomous readers. Instruction and practice of developing critical reading strategies and building field-specific vocabulary. Pre: 072 or placement by examination.

ELI 083 Advanced Academic Writing for Graduate Students (0) Introduction to academic writing conventions common at the graduate level. Students explore academic writing in their disciplines, develop clarity of written expression, and improve command over textual, rhetorical, and discursive conventions common in academic writing. Pre: 073 or placement by examination.

ELI 111 Practicum for International Teaching Assistants (3) Extensive practice for international teaching assistants in speaking in classroom situations with emphasis on oral skills, American cultural expectations and classroom management. CR/NC only. Pre: 080.

Ethnic Studies (ES) College of Social Sciences A grade of C or better in the prerequisite courses is required for all courses. (A-C is not acceptable.)

ES 101 Introduction to Ethnic Studies (3) Basic concepts and theories for analyzing dynamics of ethnic group experiences, particularly those represented in Hawai‘i, and their relation to colonization, immigration, problems of identity, racism, and social class.

ES 213 Race, Class, Gender in Popular Culture (3) Contemporary issues of race, class, and gender in popular culture (film, television, music, social media, sports, etc.). Introduction to critical media analysis and social science theories and methods.

ES 214 Introduction to Race and Ethnic Relations (3) Race and ethnic relations in world perspective: social, economic, and political problems associated with perception, existence, and accommodation of these groups within the wider society. (Cross-listed as SOC 214) DS

ES 221 Hawaiians (3) The unique culture, religion, history, language, land system, and governance of Native Hawaiians. Transformation of the Hawaiian social system by the capitalist economy. Current issues and Native Hawaiian quest for sovereign governance. DS

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ES 301 Ethnic Identity (3) Individual and group problems of identity, identity conflict, culture conflict, inter-ethnic relations. Critical review of available material on Hawai‘i. Pre: one DS or DH course. DS

ES 305 African American Experience I (3) Afrocentric perspective. Analysis of the black political/cultural diaspora, including ancient African kingdoms, the slavery experience, organized resistance, emancipation through the Civil War and Reconstruction. Pre: one DS or DH course. DS

ES 306 African American Experience II (3) Afrocentric sociopolitical analysis. The struggle for freedom: Reconstruction period, reign of terror, intellectual and cultural awakenings, civil rights movements, contemporary issues. Pre: one DS or DH course. DS

ES 310 Ethnicity and Community: Hawai‘i (3) Site visits to museums, social welfare units, etc., as well as guest lecturers from the community including police, health, education. Pre: one DS or DH course. (Summer only) DS

ES 318 Asian America (3) History of selected Asian immigrant groups from the 19th century to the present. Topics include: immigration and labor history, Asian American race relations, and cultural productions, community adaptations and identity formation. (Cross-listed as AMST 318) DH

ES 320 Hawai‘i and the Pacific (3) Hawai‘i as part of the Pacific community: selected historical and contemporary perspectives of Pacific areas; cultural and economic imperialism, land alienation, and the impact of development on Pacific peoples. Pre: one DS or DH course. DH

ES 330 Japanese in Hawai‘i (3) Iseki roots in Japan; the role of Japanese in labor, politics, and business; sansei and perspectives on local identity and culture. The Japanese in light of changing economic, social, and political conditions in Hawai‘i today. Pre: one DS or DH course. DH

ES 331 Chinese America: History, Politics, and Representation (3) Ethnohistorical and contemporary view of the experiences of the Chinese in Hawai‘i and the U.S. mainland: specific roles and contributions; immigration, social organization, and identity. Pre: one DS or DH course. DH

ES 333 Filipinos in Hawai‘i (3) Historical and contemporary experiences; immigration; traditional culture and values; plantation experience; labor organizing; development of Filipino community; racism; discrimination; and ethnic identity. Pre: one DS or DH course. DH

ES 338 American Indian Experience (3) Provides a comprehensive look at the indigenous foundation of life and society in the Americas and elaborates on historical and contemporary importance of American Indian rights issues. Pre: one DS or DH course. DH

ES 339 South Asian Migrants: Culture and Politics (3) Historical and contemporary experiences of South Asian migrants in North America, Pacific, Caribbean, and/or African diaspora; causes and patterns of migration, inter-ethnic relations policies; role of race, gender, culture in community, identity formation. A-F only. Pre: one DS or DH course. Pre: 100, 200, or 300 level consent. (On a year) (Cross-listed as WS 339) DS

ES 340 Land Tenure and Use in Hawai‘i (3) Dynamics of change: indigenous Hawaiian land tenure; Great Mahele and Kuleana Act; ethnic succession of land ownership of ownership today; effects of land development on ethnic communities. Pre: one DS or DH course. DH

ES 350 Economic Change and Hawai‘i’s People (3) Development of modern Hawaiian economy and impact on Hawai‘i’s people. Sugar, pineapple, and tourism industry; local and multinational corporations; scenarios for Hawai‘i’s future development. Pre: one DS or DH course. DS

ES 360 Immigration to Hawai‘i and U.S. (3) Historical overview; “push and pull factors”; effect of changing economy; experiences of various ethnic groups; problems of recent immigrants; immigration policies in the U.S. and Hawai‘i. Pre: one DS course. DH

ES 365 Pacific/Asian Women in Hawai‘i (3) Adaptive strategies of Hawaiian, Chinese, Japanese, Korean, Filipino, Samoan, and Southeast Asian women in Hawai‘i; feminist anthropological and historical analysis. Pre: SOC, or WS course. (Cross-listed as WS 360) DS

ES 370 Literatures of Hawai‘i (3) Writings of various ethnic groups in Hawai‘i, ancient to contemporary. Songs, stories, poetry, fiction, essays that illustrate the social history of Hawai‘i. Pre: one DS, DL course or consent. (Cross-listed as ENG 370) DL

ES 372 Asian American Literature (3) Basic concepts and representative texts for the study of Asian American literature by writers from a variety of backgrounds. Pre: one ENG DL course or consent. (Cross-listed as ESL 372) DL

ES 373 Filipino Americans: History, Culture, and Politics (3) An introduction to the study of Filipino Americans in the U.S. and the diaspora. The course pays special attention to labor migration, cultural production and community politics. Pre: sophomore standing. (Cross-listed as AMST 373) DS

ES 375 Issues of Diversity in Higher Education (3) Examines issues of diversity within higher education. Examines different dimensions of diversity including: age, gender, racial/ethnic origin, age, and sexual orientation. Will utilize national and local case studies. Junior, class standing or higher. Pre: one DS or DH course. (Spring only) DS

ES 380 Fieldwork in Ethnic Studies (V) Specialized training in the design and execution of projects in historical, oral history, or contemporary problems. Repeatable to total of 6 credit hours. Pre: consent.

ES 381 Social Movements in Hawai‘i (3) Role of various movements in the social change in Hawai‘i’s community, ethnic, labor, student, etc. Theories of social movements and social change. Pre: one DS or DH course. DS

ES 390 Gender and Race in U.S. Society (3) Historical and sociological study of gender and gender in U.S. society; grassroots feminist and racial/ethnic activism on the continent and in Hawai‘i. A-F only. Pre: 101 or WS 151 or junior standing. (Cross-listed as WS 390) DS

ES 392 Change in the Pacific—Polynesia (3) Impact of cultural and physical change and their interrelationship. Pre: one DS or DH course. DS

ES 399 Directed Reading/Research (V) Repeatable up to 6 credits. Pre: consent only.

ES 410 Race, Class, and the Law (3) Historical context and implications of landmark court decisions and legal issues affecting social change in ethnic communities in Hawai‘i and the continental U.S. Pre: one 300-level course in ES, POLS, or SOC. DS

ES 418 Women and Work (3) Gender and racial division of labor nationally and internationally; racial and gender differentials in wages, training, working conditions and unemployment; historical trends and future directions. Pre: one 300-level ES or WS course, or SOC 300; or consent. (Cross-listed as SOC 418 and WS 418) DS

ES 420 American Ethnic and Race Relations (3) Surveys ethnic and race relations in the U.S. Focus on historical conflicts and critical issues such as racism, immigration, affirmative action, changing economic structures, and roles of government. Pre: one DS or DH course. DS

ES 440 Contemporary Diasporas in Comparative Perspective (3) Compares the circumstances under which contemporary Asian, Pacific Islander, or African migrants form diasporas across the globe and examines the role of government, foreign policy, and racial/ethnic relations in the formation of a particular ethnic group to examine its site-specific experiences. DS

ES 443 Filipino Americans: Research Topics (3) A research seminar on the study of Filipino Americans. Special themes include the role of ethnicity, ethnicity in the performing arts, or literature may be offered. Pre: junior standing or consent. (Cross-listed as AMST 401) DS

ES 455 (Alpha) Topics in Comparative Ethnic Conflict (3) Causes and dynamics of ethnic conflicts with attention to problem resolution; (B) Middle Eastern (C) Hawaiian sovereignty in Pacific context. Pre: 320 or 392, or consent for (C). DS

ES 456 Racism and Ethnicity in Hawai‘i (3) Historical and contemporary social processes involved in inter-ethnic relations in Hawai‘i. Pre: SOC 300 or one 300 level course, or consent. (Cross-listed as SOC 456) DS

ES 460 Global Ethnic Conflict (3) Ethnic conflicts cause most wars on our globe today. Theory and case studies will examine the causes and consequences of ethnic conflicts and how to prevent them. Junior standing or higher. Pre: one DS or DH course or consent. (Fall only) DS

ES 480 Qualitative Research Methods (3) Introduction to qualitative data collection methods; explore methods of analyzing data including grounded theory method, discourse analysis, and narrative analysis and those used in ethnic, gender, and community studies. A-F only. Pre: one upper division ES or SOCS course or consent.

ES 486 Peoples of Hawai‘i (3) Critically examines the historical and contemporary experiences of various people of Hawai‘i and utilizes anthropological and ethnic studies approaches to study identity, race, ethnicity, culture, language, sex, class, land, and power in Hawai‘i. Pre: one DS or DH course. DS

ES 492 Politics of Multiculturalism (3) The development of ethnic relations and political approaches to multiculturalism in two multiethnic nations: Canada and the U.S. A-F only. Pre: one DS or one 300 level ES course, or consent. (Cross-listed as SOC 492) DS

ES 493 Oral History; Theory and Practice (3) Literature and methodology; project design. Students develop and execute an oral history project. Junior standing or consent. (Cross-listed as ANTH 493) DH

ES 495 Hawaiian Labor History (3) Conditions of work under varying political, social, and economic transformations in Hawai‘i’s anthropological, sociological, and historic data. Pre: HIST 151 and HIST 152. DH

ES 496 Special Topics in Ethnic Studies (3) Selected themes in ethnic studies exploring current issues and new topics; taught by regular and visiting faculty. Repeatable two times. Pre: one 300-level social science course.

Exceptional Students and Elementary Education (ESEE)

College of Education

ESEE 310 Learner in the Environment I: Social and Cultural Contexts for Teaching (3) Knowledge and skills related to the context of teaching. Teacher candidates will examine the impact of culture, family, school, classroom, and individual characteristics on learning. A-F only.

ESEE 311 Learner in the Environment II: Classroom and Behavior Management (3) Teacher candidates will gain the ability to establish, maintain, and (when necessary) restore the classroom as an effective environment for teaching and learning. A-F only.

ESEE 312 Learner in the Environment III: Behavior Project Implementation (3) Teacher candidates demonstrate the ability to establish, maintain, and (when necessary) restore the classroom as an effective environment for teaching and learning. Candidates demonstrate ability to identify maladaptive student behaviors and implement effective, research-based interventions. A-F only.

ESEE 320 Assessment I: Foundations of Assessment (3) Introduction to foundational aspects of assessment and emphasizes the importance of linking assessment with planning and instruction. Candidates develop knowledge, skills, and dispositions important for designing, implementing, and analyzing effective assessments for diverse learners. A-F only.

ESEE 321 Assessment II: Formal Assessment (3) Understand techniques in the assessment, planning, and instructional process appropriate for students.
with mild/moderate disabilities. Individualized program development facilitates inclusion of students with disabilities in the general education environment is stressed. A-F only.

ESEE 330 Planning and Instruction: Introduction to Inclusive Setting (3) Teacher candidates learn to differentiate instruction based on learner needs, planning to facilitate inclusion of students with disabilities in the general education environment through evidence-based practice. A-F only.

ESEE 331 Planning and Instruction: Integrating Science and Technology (4) Examination of content, processes, strategies, and issues related to the teaching and learning of science and technology, including assistive technology, in inclusive elementary school settings. A-F only.

ESEE 332 Planning and Instruction: Mathematics in Inclusive Settings (3) Preparing elementary school teachers of mathematics, K-6. Candidates learn to differentiate instruction based on learner needs, planning to facilitate inclusion of students with disabilities in the general education environment through evidence-based practices. A-F only.

ESEE 333 Planning and Instruction: STEM (3) Examination of content, processes, strategies, and issues related to teaching and learning of Science, Technology, Engineering, and Mathematics (STEM) content for inclusive elementary classrooms, K-6. Teachers candidates focus on planning, teaching, and assessing STEM. A-F only.

ESEE 334 Planning and Instruction: Integrating Social Studies and the Performing Arts (4) Integrates Social Studies and Performing Arts content in K-6 classrooms. Teacher candidates challenge students in inclusive settings to engage with social issues through active, collaborative, expressive, aesthetic, creative, and critical pedagogy. A-F only.

ESEE 340 Planning and Instruction, Literacy I: Teaching in Inclusive Settings, K-3 (3) Overview of principles and practices for teaching reading (phonemic awareness, phonics, fluency, vocabulary, and comprehension) to diverse elementary students, grades K-3; including planning, instruction, and assessing elementary students in grades K-6, inclusive settings. A-F only.

ESEE 341 Planning and Instruction, Literacy II: Teaching Children to Read in Inclusive Settings, Grades 4-6 (3) Teacher candidates demonstrate essential reading comprehension strategies, engaging students in content area text, planning, instruction, and assessing elementary students in grades 4-6, inclusive settings. A-F only.

ESE 342 Planning and Instruction, Literacy III: Writing and Visual Arts in Inclusive Settings, K-6 (4) Methods, strategies for planning, teaching, and assessing writing for elementary students in inclusive settings, grades K-6. Visual arts methods are integrated to develop visual literacy. A-F only.

ESE 350 Field Experience I: Response to Intervention in Reading (4) Teacher candidates in this field-based course will use an evidence-based practice in reading within a response to intervention (RtI) framework. Supervision provided by participating site personnel and college supervisor. A-F only.

ESE 351 Field Rounds (2) Field-based course engages teacher candidates in a variety of purposeful observation and reflection activities aligned with course work. Field settings are appropriate to concurrent classes; supervision provided by participating site personnel and college supervisor. A-F only.

ESE 352 Field Experience II: Elementary and Special Education Classroom Settings (6) Teacher candidates are immersed in a general education, inclusion, or self-contained special education setting. A mentor teacher and a field supervisor from the university provide support and oversight. A-F only.

ESE 353 Field Experience III: Elementary and Special Education Classroom Settings (6) Teacher candidates are immersed in a general education, inclusion, or a self-contained special education field setting. A mentor teacher and a field supervisor from the university provide support and oversight. A-F only.

ESEE 354 Student Teaching in Elementary and Special Education Classrooms (10) Full-time student teaching in grades K-6 in an elementary school inclusion classroom, or a combination of general education and special education settings. The experience is directed by a qualified mentor teacher and has university-supervised supervision. A-F only.

ESEE 355 Seminar for Student Teaching (2) Seminar to support student teaching. Prior to completing their student teaching, and prepare teacher candidates to transition into a full time teacher, examine ethical issues in the field, prepare for employment, and demonstrate ability to meet professional standards. A-F only.

Family Medicine and Community Health (FMCH)

School of Medicine

FMCH 531 7-Week Family Medicine Clerkship (10) Ambulatory-based clerkship in Hawai‘i. Students learn history taking, physical exam skills, and management of family medicine patients. Focus on behavioral care, caring for the underserved, sports medicine, preventive care, common acute/chronic ambulatory clerkship. Pre: 3rd year standing.

FMCH 532 Family Medicine and Community Health Longitudinal Clerkship (10) 5-month ambulatory clerkship. Students learn history taking, physical exam skills, and management of family medicine patients. Focus on behavioral care, caring for the underserved, sports medicine, preventive care, and common acute/chronic ambulatory problems. Repeatable one time. Co-requisite: third-year standing and concurrent registration in 532 courses.

FMCH 545 (Alpha) Electives in Family Medicine and Community Health (V) Fourth-year elective in which medical students may do study of selected topics within the field of family medicine and community health. Pre: primary care preceptorship; (C) topics in community health; (D) sub-internship in family medicine; (E) extramural elective in family medicine and community health-miscellaneous; (F) sports medicine preceptorship; (G) longitudinal underserved caretaker preceptorship. A-F only only for (G). CR/NC only. Pre: 531 or 532. (Spring only for (G)).

FMCH 599 Directed Reading/Research (V) Repeatable unlimited times. Pre: consent.

Family Resources (FAMR)

College of Tropical Agriculture and Human Resources

FAMR 230 Human Development (3) Concepts, issues, theories of human growth and development from conception to death; systems approaches to inquiry into factors affecting growth and development. A-F only.

FAMR 333 Infancy and Early Childhood (3) Growth and development from prenatal period to age 5. Historical and current issues and research based on ecological, cross-cultural perspective. Focus on optimal development. Pre: 230 or consent. DS

FAMR 332 Childhood (3) Intensive investigation into developmental aspects of 6–12 year old children. Historical and current issues, research, and examination of the role of schools and other community resources. Focus on optimal development. Pre: 230 or consent. DS

FAMR 333 Adolescence and Early Adulthood (3) Problems, concepts, and research related to development from puberty through early adulthood. Examination of biological, cognitive, social, and cultural factors affecting the individual. Pre: 230 or consent. DS

FAMR 334 Middle Age and Aging (3) Change and continuity in midlife and late life from theoretical and applied perspectives. Coverage of physical and psychological changes in women and men, stress, attitudes, values, and programs regarding aging. Pre: 230. DS

FAMR 340 Intimacy, Marriages and Families (3) Study of intimate relationships, marriages and families, their dynamics, strengths, growth and development, challenges, choices and opportunities, in the context of social change and cultural diversity. Pre: 230 or PSY 100 or SOC 100; or consent. DS

FAMR 341 Parenting (3) Parenting theories, methods, skills, issues, and children’s development in various cultural contexts. Pre: 340 or consent. DS

FAMR 350 Leadership and Group Process (3) Exploration of leadership research and theories and their application to leadership development; designed to enhance personal and interactive leadership. Pre: 230 or FDM 200, or consent. DS

FAMR 352 Community Needs and Resources (3) Theory and practice in determining community needs and resources; community resources development based on needs identification. Pre: 230 or consent. DS

FAMR 360 Family Resource Management (3) Concepts, principles, and practices in managing family and household resources. Pre: 230 or consent. DS

FAMR 361 Family Financial Planning (3) Analytical approach to family financial planning from the perspective of changing family demands over the life cycle. Pre: 360 or an ECON course, or consent. DS

FAMR 363 Consumer Economics (3) Consumer rights, responsibilities, and decision-making; factors affecting consumer functioning within economy. Pre: 360 or an ECON course, or consent.

FAMR 380 Research Methodology (3) Fundamentals of scientific methodology and techniques in design and data collection; introduction to statistics for decision-making and program evaluations in agriculture and human resources. Pre: 230 or FDM 200, or consent. Co-requisite: 380L. DS

FAMR 380L Research Methodology Lab (1) (1 hr Lab) Test design, computer use, data analysis. Co-requisite: 380L. DS

FAMR 425 Partnerships with Families and Professionals (4) Lecture, discussion and hands-on course, prepares students for direct, educational work with parents and children and for continued graduate work in child and family studies, counseling, psychology, social work and/or family life education. A-F only. Pre: 341 or consent. DS

FAMR 442 Marriage Development (5) Marital interaction and development: divorce and remarriage; resources and techniques for marital adjustment, enrichment, and growth. Pre: 340. DS

FAMR 444 Contemporary Family Issues (3) Investigation of current issues with impact upon family quality of life, with emphasis on the interdependent nature of families and their environments. Pre: 340 or consent. DS

FAMR 445 Family Life Education Methodology (4) Lecture, discussion and hands-on course, with service learning on Family Life Education Methodology. Repeatable one time. Pre: 442 or 444, or consent.

FAMR 452 Community Program Development (3) Concepts and theories of community program development; principles and procedures in administration and supervision of volunteer services surveyed and analyzed. Pre: 352. DS

FAMR 454 Family Public Policy (3) Cross-national survey of family public policy; analysis, revision, and development of family public policy; impacts of policy on consumers and families. Pre: 352. DS

FAMR 455 Consumer Communications (3) Development, production, analysis, and evaluation of consumer materials for print media. Use of desktop publishing computer programs. Pre: 360 or an ECON course, or consent.

FAMR 468 Family Economics (3) Study of personal family resources and its interaction with the economy. Focuses on contemporary economic problems that affect the welfare of families. Pre: 360 or an ECON course, or consent.

FAMR 491 Topics in Family Resources (V) Study and discussion of significant topics, problems.
Offered by visiting faculty and/or for extension programs. Repeatable.

FAMR 492 Internship (4) Integration and application of academic knowledge and critical skills in supervised work at an approved internship site and through analytical writing assignments and class discussions. Instructor consent required. Repeatable one time. Pre: 230, 340, 360, 380 and 380L.

FAMR 495 Capstone Portfolio (3) Preparation of a senior portfolio to be used as assessment of competence relating to professional FCS standards. Includes extensive instruction on writing. FAMR majors only. Pre: 230, 340, 360, 380, 380L; 492 or consent.

FAMR 499 Directed Reading and Research (V) Independent reading and research on a topic, under supervision of faculty member having contract with student to read the student's work under close supervision. Consent one time. Pre: 221 or consent. Co-requisite: 231L. (Spring only)

FDM 330 Advanced Apparel Construction (3) Principles of advanced techniques for garment construction with emphasis on low and high end resources. Students plan, write and evaluate small retail business plans. Junior standing or higher. FDM majors only; open to non-majors with instructor's consent. Pre: 575 or consent.

FDM 460 Costume Collections Management (3) Investigation of skills and techniques needed for handling textile and apparel artifacts in museums and other collections. Active involvement in document, researching, interpreting, and exhibiting textiles and costumes. Repeatable one time. Pre: 210, 416, or 418.

FDM 471 International Apparel Trade Issues (3) Theories, concepts, problems of international trade of textile and apparel products. Issues of importing and exporting apparel products globally. Social, political and economic factors affecting textile and apparel trade.

FDM 491 Topics in Fashion (V) Study and discussion of special topics, problems. Offered by staff and visiting faculty. Repeatable one time. Pre: 224.

FDM 492 Internship (4) Examination of issues and opportunities associated with careers in fashion and related businesses and industries. Topics include interpersonal skills development, job search and interview strategies, and ethical issues in the workplace. FDM majors only. A-F only. Junior standing or higher. Pre: consent.

FDM 495 Capstone Portfolio (3) Preparation and application of academic knowledge and critical skills emphasizing professional development. Placement with an approved cooperating supervisor/employer. Pre: 492 and senior standing.

FDM 496 Field Study in the Fashion Industry (V) Study tours to various centers of the world to examine historical and modern apparel and textiles. Merchandising and design methods and operations examined. Repeatable up to 12 credits. Pre: consent.

FDM 499 Directed Reading and Research (V) Repeatable up to 15 credits. Pre: consent.

Filipino (FIL)

College of Languages, Linguistics and Literature

FIL 101 Beginning Filipino (4) Listening, speaking, reading, writing skills. Structured and conducted inductively. Meets four hours weekly, includes one hour out-of-class field experience (Co-curricular cultural activities) weekly. HSL

FIL 102 Beginning Filipino (4) Continuation of 101. Pre: 101 or consent. HSL

FIL 201 Intermediate Filipino (4) Continuation of 102. Meets four hours weekly, includes one hour out-of-class field experience (Co-curricular cultural activities) weekly. Pre: 102 or consent. HSL

FIL 202 Intermediate Filipino (4) Continuation of 201. Pre: 201 or consent. HSL

FIL 224 Filipino for Education (4) Continuation of 102. Lessons focus on various aspects of Philippine culture and specialized topics that cater to the needs of teachers intending to teach Filipino immigrant students on the teach Filipino as a second language. Meets five hours a week; daily lab work. Pre: 102. HSL

FIL 225 Filipino for Education (4) Continuation of 202 or 224. HSL

FIL 301 Third-Level Filipino I (3) Conversation, advanced reading and composition on traditional culture and indigenous life. Meets three hours weekly. Pre: 202 or 225, or consent.

FIL 302 Third-Level Filipino II (3) Conversation, advanced reading, and composition on contemporary issues. Meets three hours weekly. Pre: 202 or 225, or consent.

FIL 303 Accelerated Third-Level Filipino (6) FIL 315 Filipino Aural Comprehension (3) Training in comprehension of spoken authentic/simulated authentic materials presented in news broadcasts,
FUNCTIONAL GENOMICS, are included. Open to nonma-
jors. Prereq: graduate standing or consent. (Cross-listed as ANSC 650 and MBBE 650)

FSHN 652 Information Research Skills (1) Exposes students to journal and library research, including current issues in nutrition research. Provides experience utilizing and critically evalu-
ing a variety of print and electronic sources in nutrition and critical analysis of current research literature. Repeatable four times. Prereq. consent.

FSHN 685 Nutritional Epidemiology (3) Dietary, biocohort, and clinical studies methods used for evaluating nutrition and diet in the etiology and epidemiology of disease. Prereq: 685 and PH 665, or consent. (Cross-listed as PH 689)

FSHN 689 Plan B Master’s Project (3) Independent study for students working on a Plan B Master’s project. A grade of Satisfactory (S) is assigned when the project is satisfactorily completed. A-F only. Prereq: graduate standing or consent. 

FSHN 690 dissertation Research (V) Doctoral dissertation in nutrition. Repeatable unlimited times. Graduate standing only. Satisfactory only. Prereq candidate for PhD in Nutrition.

FSHN 785 Diet and Cancer Seminar (1) Presenta-
tion-discussion selected research topics in the field of diet-cancer relationships including nutritional epidemiology of cancer; diet and supplement inter-
terventions trials, and cellular/molecular effects of diet on cancer. Repeatable one time. Prereq: 685 and 689, or consent.

FSHN 800 Dissertation Research (V) Research for doctoral dissertation in nutrition. Repeatable unlimited times. Graduate standing only. Satisfactory only. Prereq: candidate for PhD in Nutrition.

FSHN 801 Advanced Food Science I (3) Advanced topics in nutrition assessment, diagnosis, and interventions of patients with specialized clinical conditions. Students will further their knowl-
edge in clinical research methods through case study presentations and evidence-based review. Repeatable one time. Prereq. 380 or 407, or instructor consent.

FSHN 802 Topics in Nutritional Sciences (1) Advanced topics in nutritional sciences; from basic to advanced research, including issues in nutrition and critical analysis of current research literature. Repeatable four times. Prereq. consent.

FSHN 803 Global Nutrition (2) Intensive course of full-time formal instruction on the second-year level in French language and culture in a French-speaking country. Prereq. 102 or 110 or consent. HSL

FSHN 805 Topics in Nutritional Biochemistry II (3) Advanced topics in nutritional biochemistry, from basic to advanced research, including issues in nutrition and critical analysis of current research literature. Repeatable four times. Prereq. consent.

FSHN 806 Advanced Child and Adolescent Nutri-
tion (3) Addresses nutrition, growth, and develop-
ment in children and adolescents and nutrition-related issues, obesity and chronic disease risk factors, with a focus on current research in the Pacific region. Prereq. 379 or consent. (Fall only) (Cross-listed as PH 686)

FSHN 807 Advanced Lab Techniques (3) (1 Lec., 2 3-hr Lab) Advanced laboratory techniques used in food science and human nutrition research. Prereq: graduate standing or consent. (Cross-listed as ANSC 687 and MBBE 687)

FSHN 810 Topics in Food Science (1) Advanced topics in food science and technology, from basic to applied research, including current issues in food sci-
ence and technology and critical analysis of current research literature. Repeatable one time. A-F only. Prereq: graduate standing or consent. 

FSHN 811 Advanced Topical Research (1) Teacher directed individual research project. Prereq: consent.

FSHN 812 Advanced Topics in Nutritional Biochemistry (3) Advanced topics in nutritional biochemistry from basic to advanced research, including issues in nutrition and critical analysis of current research literature. Repeatable five times. Prereq. consent.

FSHN 820 Topics in Nutritional Sciences (1) Cross-listed as ANSC 652, NREM 652, and TPSS 652) Student presentation of literature reviews and research. Repeatable five times. Prereq. consent.

FSHN 821 Information Research Skills (1) Cross-listed as ANSC 492) Discussion of literature, databases, and research techniques. Prereq. senior standing in FSHN. (Cross-listed as ANSC 492)
FR 358 Third-Level French Abroad (3) Intensive formal instruction at the third-year level in French language skills: reading, writing, grammar, or conversation in a French-speaking country. Pr: 202 or 210 or 259 or consent.

FR 359 Third-Level French Abroad (3) Continuation of 358.

FR 360 Intensive Third-Level French Abroad (V) Intensive formal instruction at the third-year level in French language skills: reading, writing, grammar, or conversation in a French-speaking country. Pr: 202 or 210 or 259 or consent.

FR 361 Contemporary French Civilization (3) Survey of culture and institutions of modern France. Pr: 202 or 210 or 259 or consent. DH

FR 364 Survey of French Civilization (3) A historical survey of the development of French culture. The course is interdisciplinary, focusing on the relations between politics, literature, science, and the arts. Pr: 202 or 210 or 259 or consent. DH

FR 391 (Alpha) Topics in French Literature (3) (B) French film; (C) the Fantastic; (D) Francophone literature. Repeatable two times with consent. Pr: 311 or 312, or consent. DL

FR 399 Directed Reading (V) Independent study of approved reading with faculty supervision. Repeatable two times. A-F only. Consent.

FR 405 Advanced Oral and Written Expression (3) Further development of listening, comprehension, speaking, and writing skills through viewing of French videos, reading French newspapers, frequent oral and written reports. Pr: 311 and 312, or 306, or 358, or 360, or consent.

FR 406 French-English Translation (3) Practice in techniques based on contrastive linguistics. Translation of texts from various fields from French into English and the reverse. Pr: 306 or 309, and 312; or consent.

FR 408 Masterpieces of Medieval Literature (3) Samplings from epic, novel, verse and prose, tale, lyric poetry, chronicle, theater, didactic literature. Elementary readings in original text in editions giving modern French translation. Pr: 331 or consent. DL

FR 409 Advanced Language Study: French (3) Advanced course in spoken and written French with intensive review of alternative grammatical structures and shades of meaning in the modern language. Graduates who have not taken prerequisites may request consent. Pr: 306 or 405 (or equivalent); or consent.

FR 410 Masterpieces of 16th-Century Literature (3) Samplings from all major writers of the period. Readings in original text in editions giving modern French equivalents for difficult works. Pr: 331 or consent. DL

FR 411 Masterpieces of 17th-Century Literature (3) Principal works of major dramatists: Corneille, Molière, Racine. Principal movements and major authors of non-dramatic prose and poetry. Pr: 331 or consent. DL

FR 413 Masterpieces of 18th-Century Literature (3) Pr: 332 or consent. DL


FR 421 20th-Century French Theater (3) Major French playwrights and their works: Claudel, Giraudoux, Anouilh, Sartre, Camus, etc. Pr: 332 or consent. DL

FR 423 20th Century French Prose and Poetry (3) Study of representative prose and poetry of the major trends of 20th century France: modernism, surrealism, existentialism, postmodernism and multi-culturalism. Pr: 332 or consent. DL

FR 458 Fourth-Level French Abroad (3) Intensive course of full-time formal instruction on the fourth-year level in French linguistics, civilization, culture, and literature in a French-speaking country. Pr: 359 or 360 or equivalent.

FR 459 Fourth-Level French Abroad (Continuation of 458.

FR 460 Intensive Fourth-Level French Abroad (V) Intensive course of formal instruction on the fourth-year level in French language and literature in a French-speaking country. For semester programs only. Pr: 360 or equivalent.

FR 491 (Alpha) Seminar in French Literature (3) (B) French literature by period; (C) Francophone literature; (D) French film; (E) topic in French literature. Repeat: 331 (or concurrent) and 332 (or concurrent). Consent. DL

FR 499 Directed Reading and Research (V) Independent study of approved readings and research with faculty supervision. Repeatable two times. A-F only. Consent.

FR 506 French for Reading Proficiency (3) Reading of scholarly and technical French for graduate students; open to undergraduates with consent of department chair. Not applicable to undergraduate language requirement. Repeatable two times with consent. CR/NC only.


FR 620 Masterpieces of the 17th Century (3) Dramatic or prose works of the classical period. Pr: 651. Philisocial Currents in 18th Century (3) Philosophic movements and their impact on the social, political, and literary life of the period and the modern era.

FR 661 Advanced French-English Translation: Practice and Theory (3) Advanced practice in translation into French and from French to English in various fields (literature, business, medicine, other), with reflection on choices. Readings in translation theory. Repeatable one time.


FR 672 Seminar in Medieval Literature (3) Genres and evolution of literary genres from the 12th to 15th centuries. Epic, romance, lyric poetry, prose, and drama. Repeatable two times with consent.

FR 681 Seminar: The Novel in France (3) Novels which have influenced movements or established traditions. Repeatable two times with consent.

FR 690 The Theater in France (3) Historical development; major dramatists who have influenced movements or established traditions. Pr: 6 credit hours at 400 level.

FR 699 Directed Research (V) Repeatable unlimited times. Pr: consent of department chair.

FR 735 Seminar in French Literature (3) Study of authors or a period. Repeatable two times with consent. Pr: consent of instructor and French graduate advisor.

Geography (GEOG)

College of Social Sciences

Sophomore standing or higher or consent is required for all 300-level courses noted. Junior standing or higher or consent is required for all 400-level courses except as noted.

GEOG 101 The Natural Environment (3) Introduction to physical geography including weather, climate, vegetation, soils, geology, and landforms. Environmental issues and natural hazards. DP

GEOG 101L The Natural Environment Lab (1) A survey of field and laboratory methods commonly used by physical geographers. Pr: 101 (or concurrent). DV

GEOG 102 World Regional Geography (3) World’s major cultural regions; geographic aspects of contemporary economic, social, political conditions. FGB


GEOG 151 Geography and Contemporary Society (3) Elements of economic geography and resource management, population and urban geography; application to current problems of developed and underdeveloped worlds.

GEOG 300 Introduction to Climatology (3) Elements and controls of climate. World patterns of insulation, temperature, evaporation, precipitation, atmospheric circulation. Climatic classifications. Pr: 101 or MET/ATMO 101 or MET/ATMO 200, or consent. DP

GEOG 302 Global Environmental Issues (3) Use and abuse of natural resources and humanity’s progress toward developing a sustainable relationship with its supporting environment. A-F only. (Once a year)

GEOG 303 General Geomorphology (3) Introduction to geomorphological concepts, process mechanics, and relationships between forms and processes. Emphasis on various subdisciplines of geomorphology: coastal hilltops, fluvial, etc. Pr: 101 and 101L, or GG 101 and GG 101L. DP

GEOG 305 Water and Society (3) Interaction of people with water at household, community, regional, national, and international scales, from cultural, political, economic, and biological perspectives. Pr: sophomore standing or higher, or consent. DS

GEOG 309 Introduction to Biogeography (3) Introduction to ecosystem concept; environmental adaptations for energy and nutrient transfer; characteristics, dynamics, productivity, and distribution of principal vegetation communities. Human dominance. Pr: sophomore standing or higher, or consent. DB

GEOG 310 Introduction to Planning (3) Perspectives on planning: planning principles, and specific Hawai’i planning–research problems from a multidisciplinary approach. Pr: junior standing or consent. (Cross-listed as PLAN 310) DS

GEOG 320 Economic Geography (3) Examines how factors of production like land, labor and capital; economic activities like consumption, trade, production, and investments; and institutions like state, markets, and corporations alter economic space. A-F only. Pr: 102 or 151. (Fall only) DS

GEOG 322 Globalization and Environment (3) Debates on globalization and development, population and resources; root causes of environmental degradation; impacts of globalization on environmentalism and environmental change; social approaches to managing environmental change. Pr: 102, or consent. (Once a year) DS

GEOG 324 Geography of Global Tourism (3) Tourist landscape in relation to resources, spatial patterns of supply and demand, impacts of tourism development, and models of tourist space. Flows between major world regions. Pr: sophomore standing or higher, or consent. (Cross-listed as TIM 324) DS

GEOG 325 World Resources and Economic Development (3) The pattern of world economic development. Agriculture and discoveries, Mineral resources, energy and metal industries. Manufacturing industries in development. The network of world trade, regional associations, and international economic aid. DS

GEOG 330 Culture and Environment (3) Introduction to cultural geography, the cultural landscape, and perceptions of the environment across different cultures. Pr: 102 or 151, or consent. DS

GEOG 335 Politics, Nations, and States (3) Examines the political organization of space in the sovereign state system. Contemporary and historical analyses of boundaries, geopolitics, homelands, nations, nationalism, and territory. Pr: sophomore standing or higher, or consent. DS

GEOG 340 Geography of North America (3) Overview of the physical and cultural geography. Regions and characters. Patterns of population, natural
resources, industry, agriculture, and transportation/communication networks. Pre: 101 or 102 or 151, or consent. DS
GEOG 352 Geography of Japan (3) Regional synthesis of physical and cultural features; economic, social, political geography; origins and development of cities. DS
GEOG 353 Geography of China (3) Topics: environmental parameters and resource base, ecological control and resource management, institutional and technological dynamics of agriculture, industrial potential and industrial location, settlement patterns and urban symbiosis. DS
GEOG 355 Geography of South Asia (3) Introduction to physical and human geography of India, Bangladesh, Pakistan, Afghanistan, and Himalayan kingdoms. Environmental, economic, social, cultural, and political factors in development. DS
GEOG 356 Geography of Southeast Asia (3) An investigation of the development context of Southeast Asia including socioeconomic, cultural, and environmental resources. Problems and prospects for change. (Cross-listed as ASAN 356) DS
GEOG 365 Geography of the Pacific (3) Physical character of the Pacific; cultural, political, economic geography of Melanesia, Micronesia, Polynesia (except Hawai’i). DS
GEOG 366 Geography of Honolulu (3) Development of Honolulu and O’ahu from 1778. Evolution of function, land use, and social patterns. Contemporaneous planning and environmental issues arising from urban growth. DS
GEOG 368 Geography of Hawai’i (3) Regional, physical, cultural geography. Detailed study of people and resources. DS
GEOG 370 Aerial Photo and Image Interpretation (3) (2 Lec, 1 3-hr Lab) Introduction to the measurement, interpretation, analysis and use of aerial photographs and digital imagery. Pre: 104, or consent.
GEOG 375 Introduction to Cartography and Aerial Photo (3) (2 Lec, 1 3-hr Lab) Principles of cartography; compilation and measurement from aerial photographs. (Cross-listed as ART 375) DS
GEOG 376 Map Design and Production (3) (3 2-hr Lab) Compilation, design and production of maps for presentations, research, and illustration using artists and mapping software. Pre: junior standing or higher, or consent.
GEOG 380 Statistical Methods in Geography (3) Quantitative statistical methods will be explored for describing and analyzing geographic/environmental phenomena. Topics will include data display, measurement, sampling, spatial statistics, dimension analysis, nonparametric and parametric models. Pre: 101 or 151 (or concurrent) or consent.
GEOG 385 Research Methods in Human Geography (3) Introduction to the methodologies and practice of research in human geography. Combines lectures, workshops, and assignments. Students will conduct and report upon their own research. Pre: 102 or 151, or consent. DS
GEOG 387 GIS Data Visualization (3) Display techniques for statistical and terrain data. Cartographic communication models, data models, algorithms and symbol conventions. Techniques for assessing map design. Pre: 300 or SOCS 225 or ECON 321, or consent. DS
GEOG 388 Introduction to GIS (3) Design, implementation, and use. Database construction and documentation. Techniques for spatial data manipulation and display. Exposure to the GIS curriculum. Student research projects. Pre: 104 or consent.
GEOG 399 Directed Reading (V) Limited to senior majors with a minimum cumulative GPA of 2.7 or a minimum GPA of 3.0 in geography.
GEOG 400 Vegetation and the Climate System (3) Role of vegetation in the climate system; links to hydrology and biogeochemical cycling; vegetation and climate history; evolution of terrestrial ecosystems; effects of global warming. Pre: 101 or 300 or 401 or 402 or MET/ATMO 101 or MET/ATMO 200 or MET/ATMO 302 or MET/ATMO 303 or MET/ATMO 310, or consent. DP
GEOG 401 Climate Change (3) Approaches to the study of past and future climate change. Pre: 101 or 400 or 402 or 405 or MET/ATMO 101 or MET/ATMO 200 or MET/ATMO 302 or MET/ATMO 303 or MET/ATMO 310, or consent. DP
GEOG 402 Agricultural Climatology (3) Analyzing climatic data; relation to photosynthesis, pheno- logical development, and the worth of agricultural models as guides to improved land-use planning and agronomic practices. Pre: 101 or 300 or 401 or 405 or MET/ATMO 101 or MET/ATMO 200 or MET/ATMO 302 or MET/ATMO 303 or MET/ATMO 310, or consent. DP
GEOG 403 Fluvial Geomorphology (3) Introduction to the single most important geomorphic agent shaping the terrestrial environment. Focus on fluvial process, fluvial dynamics, fluvial landforms, and sediment transport. Pre: 101/101L or 303 or 305 or 101/101L. DP
GEOG 404 Atmospheric Pollution (3) Examination of air quality problems from scientific and policy perspectives. Includes case studies that explore economic, political, legal, and political aspects of pollution control. Pre: junior standing or higher, or consent. DS
GEOG 405 Water in the Environment (3) Water flows in the environment. Occurrence and movement of water; precipitation, interception, infiltration, runoff, soil moisture, evapotranspiration, and groundwater recharge. Pre: 101 or 300 or 401 or 402 or 405 or MET/ATMO 101 or MET/ATMO 200 or MET/ATMO 302 or MET/ATMO 303 or MET/ATMO 310, or consent. DP
GEOG 406 Conservation and Evolutionary Biogeography (3) Theories and techniques for the analysis of spatial microevolutionary patterns, taught from an interdisciplinary perspective. Examples and readings emphasize Hawai’i and the Pacific region. Pre: either 309, BIOL 265 or ZOOL 485, or consent. (Alt. years)
GEOG 409 Cultural Biogeography (3) Coevolution of human societies and plants over the last 10,000 years. Foraging, farming and urban societies; spread and modification of selected plants; issues of preservation of genetic resources and traditional plants; form and function of gardens. A-F only. Pre: junior standing or higher, or consent. (Cross-listed as TPSS 409) DS
GEOG 410 Human Role in Environmental Change (3) Human impacts through time on vegetation, animal communities, and environment. Topics and exercises are drawn from an interdisciplinary perspective. Examples and readings emphasize Hawai’i and the Pacific region. Pre: one of 101, BIOL 123 and either 326 or BIOL 310; or consent. (Alt. years)
GEOG 411 Past Global Change and the Human Era (3) Study of past environments to understand present and future global change. Focus on terrestrial Quaternary environments and global processes. Pre: junior standing or higher, or consent. DP
GEOG 412 Environmental Impact Assessment (3) Introduction to analytical methods for identifying, measuring, and quantifying the impacts of changes or interventions in resource, human-environment, and other geographic systems. Pre: junior standing or higher, or consent. (Alt. years) (Cross-listed as BIOL 410) DB
GEOG 413 Resource Management (3) (2 Lec, 1 3-hr Lab) Human-environment models for applications to problems of water resource, coastal fisheries, agroforestry, and/or land management. Focus on problems facing Hawai’i and the Pacific. Pre: junior standing or higher. DS
GEOG 414 Building Community Resilience (3) Introduction to the concept of the natural forces behind the most common natural disasters, and the human actions that reduce or increase vulnerability to natural disasters. A-F only. Junior standing or higher. (Spring only) (Cross-listed as PLAN 414)
GEOG 415 Nature-Based Tourism Management (3) Principles of nature-based tourism, including a survey of impacts, objectives, planning, and management systems. Junior standing or higher, Pre: 324/ TIM 324 or TIM 101. (Cross-listed as TIM 415) DS
GEOG 421 Urban Geography (3) Origins, functions, and current future trends. Problems of urban settlement, growth, decay, adaptation, and planning in different cultural and historical settings. Dynamics of urban land use and role of policies and perceptions in shaping towns and cities. Pre: 102 or 121 or 330, or consent. (Cross-listed as PLAN 421) DS
GEOG 422 Agriculture, Food and Society (3) Examines historical and contemporary development of the global agro-food systems. The impacts of technological, political, and economic change affect food security, environment and development. Open to nonmajors. Pre: junior standing or higher, or consent. DS
GEOG 423 Marine Policy (3) Introduction to the law and policies concerning the marine environment, commerce and security. Role of science, law and politics in historical and current policies for maritime trades, navigation safety, marine resources, and marine exploration. Pre: junior standing or higher, or consent. DS
GEOG 424 Regional Analysis (3) Spatial dynamics and environmental implications of urban and rural development. Concepts of regions, process of regional development, patterns of spatial interaction, and theoretical bases for development strategies; emphasis on Hawai’i. Pre: junior standing or higher, or consent. DS
GEOG 425 The Geography of Film (3) Landscapes of film: how movies map a sense of space and a sense of place. Genres and landscapes. Pre: junior standing or higher, or consent. DH
GEOG 426 Environment, Resources and Society (3) Human interaction with the environment. How market, property institution, and technological change affect the environment. Epistemological basis of environmental policies. Debates on controversial environmental issues. Pre: 102, 151, or consent. DS
GEOG 435 Political Geography of Oceans (3) The oceans’ evolution and relation to problems of economic development, politics, trade, shipping, trade. Pre: junior standing or higher, or consent. DS
GEOG 436 Geography of Peace and War (3) Geographical factors underlying conflict in the world. Pre: sophomore standing, or higher, or consent. DS
GEOG 437 Geography of China’s Modernization (3) Applies geographic principles and approaches to explore the rapid transformation of the spatial structure of recent socioeconomic development in China. Emphasis given to resource management and environmental quality, which are important factors in sustainable development. Pre: 102 or 151, or consent. DS
GEOG 468 Topics in Geography (3) Selected topics in geography not offered in the regular geography curriculum. Pre: 101 or 102 or 151, or consent.
GEOG 470 Remote Sensing (3) (2 Lec, 1 3-hr Lab) Introduction to the principles of remote sensing and image processing skills. Topics include electromagnetic spectrum, sensors, aerial photo and satellite imagery interpretation, geometric and radiometric correction, digital image processing. Research project, lab. Pre: 570 or consent.
GEOG 472 Field Mapping (3) Techniques for field measurement and recording of cultural and physical data. Field sketching, Brunton surveying, plane table mapping, oblique photo compilation, topographic mapping, and representation of field data. Pre: junior standing or higher, or consent. DS
GEOG 476 Advanced Cartography (3) (3 2-hr Lab) Special topics: computer mapping, relief representation, map reproduction methods, use of color,
analytic map interpretation, experimental cartography. Pre: consent.

GEOG 489 Applied Geographical Information Systems (3) (2 Lec, 1-2 hr lab) Application of GIS technologies to various problems or issues in social, natural, and environmental sciences. Research project, lab. Pre: 388 or consent. (Once a year)

GEOG 490 Senior Thesis (3) Preparation of research paper under individual faculty supervision. Recommended for admission to graduate program. Pre: senior GEOG major and consent.

GEOG 492 Practicum in Geography (V) Internship in applied geography under professional and faculty supervision. Field placement integrated with academic study. Repeatable up to six credit hours maximum by consent.

GEOG 493 Capstone Undergraduate Seminar (3) Current and historical geographical literature provides a background for local and global issues. Through discussion, written reviews, and research reports, the geographic perspective in modern life will be explored. Pre: consent.

GEOG 600 Seminar in Climatology (3) Methods of determining energy budget and water balance; applications in agriculture, hydrology, climatic classifications. Theory of climatic change. Bibliography. Pre: 300 or 400 or 402 or 405 or MET/ATMO 303 or MET/ATMO 310 or MET/ATMO 320; or consent.

GEOG 618 Human Environment Systems (3) Role and potential of systems science in analysis of human environment, especially resource management. Framework and methodology for problem structuring; overview of techniques. Pre: graduate standing or advanced undergraduate standing with consent.

GEOG 620 Theories and Policies of Development (3) Will critically examine what constitutes progress, advancement, or betterment in this highly uneven world, where inter-regional, inter-class, inter-group, and inter-gender differentiations in development are expanding. Graduate standing only. A-F only. (Fall only)

GEOG 621 Human Geographies of the Ocean (3) Core course in the ocean studies specialization in human geography introduces graduate students to themes and methods of human geography and cognate fields as applied to the oceans. Repeatable one time with consent.

GEOG 622 Environmental Impact Assessment (3) Theory and practice of environmental impact assessment. Political and planning frameworks supporting environmental assessment in the U.S. and abroad. Cumulative environmental effects and strategic environmental assessment. Pre: graduate standing. (Cross-listed as PLAN 630)

GEOG 628 (Alpha) Resource Systems (3) Resource development and use in a time perspective. Ecological and socioeconomic impacts, concepts, definitions, and methodology. (B) renewable; (C) nonrenewable. Pre: consent.

GEOG 630 Urban and Regional Planning in Asia (3) Key issues and policies in urban planning, rural-urban relations, rural regional planning, and frontier settlement in Asia and the Pacific. Repeatable one time. Pre: PLAN 600 or consent. (Cross-listed as PLAN 630)

GEOG 637 Environment and Development (3) Theories and practice of development; how changing development paradigms shape different ideas concerning the environment and the management of natural resources; emerging debates in development and environment in post-modern era. (Cross-listed as PLAN 637)

GEOG 638 Asian Development and Urbanization (3) Theories of political economy and sustainability in development, impacts of globalization and sustainability on development planning and policy formation, selected case studies of Asia-Pacific development. Pre: (ASIAN 600 or PLAN 630) with a grade of B or above. (Cross-listed as ASIAN 638 and PLAN 638)

GEOG 639 Community-based Natural Resource Management (3) Concepts and theories of community-based natural resource management, resource access, and governance. Practical challenges to CBNRM in contemporary political economy. Pre: graduate standing. (Cross-listed as PLAN 639)

GEOG 652 Contemporary Japan Seminar (3) Selected physical and human features that represent economic, social, and political life of modern Japan. Repeatable with consent of instructor. Pre: consent. (Cross-listed as ASIAN 652)

GEOG 654 Seminar in Geography of Southeast Asia (3) Repeatable with consent of instructor. Pre: consent.

GEOG 665 Seminar in Geography of the Pacific (3) Investigation of geographic problems of Melanesia, Micronesia, Polynesia. Repeatable with consent of instructor. Pre: consent.

GEOG 680 Geospatial Analysis of Natural Resource Data (3) The application of geostatistics to estimate spatial dependence to improve soil and regional sampling; provide insight into underlying soil, geographic, and geologic process, and to provide quantitative scaling up of point measurements to fields, regions, and watersheds. State-space modeling also will be included. A-F only. Pre: 388 or ZOOL 631; or consent. (Cross-listed as TFSS 680)

GEOG 692 Faculty Seminar Series (1) Graduate seminars repeated of all MA students and recommended for PhD students. Single credit course in which faculty present ongoing research in their fields. Pre: consent. Co-requisite: 695.

GEOG 693 Technology and Natural Risks Methods of Analysis (3) Elements of risk assessment, survey of tools for evaluating risks to human health from technological and natural hazards. Historical and international context of methods. Pre: 455 or consent.


GEOG 696 Research Design/Methods in Geogra- phy (3) Elements of research design, practical field experience, exposure to research and methodologies, broad exposure to heritage and ethos of the discipline. Pre: 695.

GEOG 699 Directed Research (V) Repeatable unlimited times. CR/NC only. Pre: consent.

GEOG 700 Thesis Research (V) Repeatable unlimited times.


GEOG 710 (Alpha) Special Topics (V) Study and discussion of significant topics, problems. (B) regional and locational analysis; (C) geography, environment, and culture; (D) Multi-objective decision analysis. Repeatable two times. Pre: 455.

GEOG 720 Critical Resource Geography (3) Graduate seminar to provide geography students a roadmap through the important literature and research on political economy, theories of population, natural, and critical resources. Graduate standing only. A-F only. (Fall only)

GEOG 728 Seminar: Resource Management in Asia-Pacific (3) Examination of resource management problems in Asia and the Pacific. Problems of resource use—agriculture, energy, minerals, ocean, air quality. Pre: graduate status.

GEOG 735 Seminar: Political Geography (3) Topics vary: may include borders, boundaries, geopolitics, homeland, identity politics, nation and nationalism, social capital, the sovereign state system, territoriality. Repeatable one time. Pre: graduate standing or consent. (Once a year)

GEOG 750 Research Seminar: Biogeography (3)

GEOG 752 Research Seminar: Resource Management (3)

GEOG 757 Research Seminar: Cultural Geography (3)

Key to symbols & abbreviations: see the first page of this section.

GEOG 758 Research Seminar: Conservation (3)

GEOG 761 Research Seminar: Cartography (3)

GEOG 762 Research Seminar: Remote Sensing (3)

GEOG 763 Research Seminar: Agricultural Geography (3)

GEOG 764 Research Seminar: Social Geography (3)

GEOG 766 Society and Space (3) Advanced seminar on social production of space. Topics include spatial metaphor in social theory; western spatiality from the Renaissance through the enlightenment, modernity and post-modernity; and geography of the body, home, landscape, and nation. Pre: graduate standing or consent.

GEOG 800 Dissertation Research (V) Repeatable unlimited times.

Geography and Geophysics (GG)

School of Ocean and Earth Science and Technology

GG 101 Dynamic Earth (3) The natural physical environment; the landscape; rocks and minerals, rivers and oceans; volcanism, earthquakes, and other processes inside the Earth; effects of human use of the Earth and its resources. Field trip. DP

GG 101L Dynamic Earth Laboratory (1) (1 3-hr lab) Hands-on study of minerals, rocks, and topographic maps. Examine volcanism, hydrology, coastal processes and hazards, geologic time and earthquakes. Field trips to investigate landslides, beaches and O’ahu geology. A-F only. DP

GG 102 Introduction to Global Change (3) Prepares students to be informed rational consumers, able to weigh media messages regarding our Earth, and to act appropriately. Topics include global change, fossil fuel, greenhouse gases, global ice, extinctions, human nutrition and industrial agriculture. A-F only. (Spring only) DP

GG 103 Geology of the Hawaiian Islands (3) Hawaiian geology and geologic processes: origin of Hawaiian islands, volcanism, rocks and minerals, landforms, stream and coastal processes, landslides, earthquakes and tsunamis, groundwater, geologic and environmental hazards. Field trip. DP

GG 104 Volcanoes in the Sea (3) Lecture with field trips covering the manner in which geological conditions, resources, and events have affected past and present circum-Pacific societies. Credit not given for both 103 and 104.

GG 105 Voyage through the Solar System (3) An illustrated voyage through the Solar System based on recent scientific results. The class highlights the origin, evolution, and current knowledge of the eight planets, their moons, asteroids, comets, and one star, the Sun. Field trip. (Cross-listed as ASTR 150) DP

GG 106 Humans and the Environment (3) Prepares students to make decisions as to where to build/buy a house, sustainable use of natural resources, and what environmental actions relevant to society and Earth’s ecosystem are appropriate on a local and global scale. A-F only. DP

GG 130 Geological Hazards (1) Introductory course covering the causes of, and effects from, earthquakes, tsunamis, volcanic eruptions, landslides, rockfalls, and other natural geologic phenomena. Open to non-majors. Field trips. (Alt. years) DP

GG 170 Physical Geology (4) (3 Lec, 1-3 hr Lab) Structure, composition and evolution of Earth; processes responsible for formation, deformation and transformation of rocks; plate tectonics. Emphasis on quantitative methods, problem solving and critical thinking to geology. Laboratory and field trips required. DP DY

GG 199 Introduction to Directed Research (V) Lower division reading and research in any area of GE under the direction of a faculty member. Repeatable four times or up to six credit hours. CR/NC only.

GG 200 Geological Inquiry (4) (3 Lec, 1-3 hr Lab) Structure, composition and evolution of Earth; processes responsible for formation, deformation and transformation of rocks; plate tectonics and records of biological evolution and past environments. Pre: 170, or 101
and 101L, or 103 and 101L; or consent. 101L may be taken concurrently. Consent required for all non-majors. DP DY

GG 250 Scientific Programming (3) (2 Lec, 1 3-hr Lab) Introduction to solving scientific problems by computer programming. Overview of the MATLAB programming language and environment. Emphasis placed on good style, logical reasoning and applied mathematics. Pre: MATH 241 (or concurrent) or departmental approval.

GG 300 Volcanology (3) Volcanic eruptions and their consequences. Includes models for volcanic eruptions including explosive eruptions and lava flows, monitoring of active volcanoes, evaluation and impacts of volcanic hazards, and mitigation of volcanic risk. Field trips to active volcanoes in the Hawaiian Islands are a normal part of the course. GG major or consent. Pre: 200 or consent. DP

GG 301 Mineralogy (4) (3 Lec, 1 3-hr Lab) Crystalllography, crystal chemistry, phase equilibria, and crystal structures. Also covers mineral optics and identification and includes an introduction to modern methods of mineralogy and crystallography. Pre: 200 and (CHEM 162/162L or CHEM 171/171L) or consent. DP

GG 302 Igneous and Metamorphic Petrology (3) (2 Lec, 1 3-hr Lab) Survey of composition, classification, and occurrence of igneous and metamorphic rocks. Hand-specimen identification and optical petrography of igneous and metamorphic rocks. Development of critical thinking and writing skills. Pre: 301 or consent. DP

GG 303 Structural Geology (3) (2 Lec, 1 3-hr Lab) Introduction to (a) the geometry, kinematics, and mechanics of crustal deformation, and (b) continuum mechanics in geology. Develops skills in three-dimensional thinking through geologic maps, cross sections, various projections, experiments, and vector analyses. Pre: 200, 250, MATH 241 or MATH 251A, and PHYS 151 or PHYS 170; or consent. DP

GG 304 Physics of Earth and Planets (4) (3 Lec, 1 3-hr Lab) Essentials of geophysics: formation of Solar System and Earth, gravity, seismology, weather, magnetism, isotopes, plate tectonics. Coursework involves application of basic physics to understanding Earth structure. Labs include field surveys and computer analyses. Pre: 250, 303, MATH 241, MATH 242, and PHYS 272; or consent. DP

GG 305 Geological Field Methods (3) Methods used in geological investigations in the field. Eight hours on Saturday in the field. Eight hours on Saturday in the field. Pre: 302, 303, and 309. DP

GG 309 Sedimentology and Stratigraphy (4) (3 Lec, 1 3-hr Lab) Principles of sedimentology, sedimentary petrology, crystal chemistry and stratigraphy. Description and discussion of modern and past processes and environments that form sedimentary rocks, properties of sedimentary rocks and interpretation of these properties and stratigraphic relations in terms of Earth history. Repeatable one time. Pre: 200 and 301, or consent. (Spring only) DP DY

GG 312 Geomathematics (3) Mathematical methods of geologic and geophysical science. Emphasis on application to earth-science problems using linear algebra, vector calculus, ordinary differential equations, and numerical solutions. Pre: MATH 242 or consent. (Cross-listed as OCN 312)

GG 325 Geochemistry (3) Theory and applications of chemical principles and chemical analysis to Earth, ocean and environmental sciences; chemistry of hydrophase-gas-phase biophase system, origin and differentiation of Earth/Solar system, volcanic processes, natural radioactivity, organic/inorganic chemistry. Pre: 200, 250, MATH 241 or MATH 251A, CHEM 162 (or concurrent); or consent. (Fall only) DP

GG 395 Undergraduate Internship (V) Experiential approach to earth science; students serve as interns. Field responsibilities include supervised field work. Open to undergraduate SOEST majors. Repeatable one time. CR/NC only. Pre: junior/senior standing and consent.

GG 399 Directed Reading (V) Individual reading in geology and geophysics. Pre: consent.

GG 402 Hawaiian Geology (3) Consists of lectures, discussions, and field trips about the geology of the Hawaiian islands. Focus on geological processes and the geologic history of the islands will be covered. Pre: 302 and 303; or consent. DP

GG 406 Natural Disasters: Geothetics and the Layman (3) Evaluates ethical practice of geoscience as it relates to studies of natural disasters that result from geological and meteorological phenomena. Also means that earth scientists interact with the laymen. Pre: 101, 103, or 147. (Once a year)

GG 407 Energy and Mineral Resources (3) Lecture and discussion on the origin, distribution, and exploitation of energy and mineral resources and ore deposits. Coverage and detail will depend partly on student interest and background. Pre: consent. DP

GG 410 Undergraduate Seminar (2) Gain professional training, practical experience, and evaluate presentations in scientific presentations emphasizing topics in geology, geophysics, and planetary science. 60% of the grade is based on the equivalent of three oral communication assignments. Pre: 170 (or 101 and 101L or 200).

GG 413 Introduction to Statistics and Data Analysis (3) Exploratory data analysis, error propagation, probability theory and statistics, curve fitting, regression, sequence and spectral analysis, multivariate analysis, and data. Pre: 250 and MATH 242 (or concurrent) or consent.

GG 420 Beaches, Reefs, and Climate Change (3) Global and local aspects of climate change and paleoclimate; beach and reef processes and response to climate change; management of coastal environments; field study local sites. Repeatable one time. Pre: 309 or consent. DP

GG 421 Geologic Record of Climate Change (3) Explores the climatic responses of Earth’s major systems (atmosphere, ice, oceans, vegetation, land) and traces their interactions through geologic history. Open to non-majors. A-F only. Pre: 200 or MET/ATMO 310, OCN 310, OEST 310; or consent. DP

GG 423 Marine Geology (3) Sediments, structure, geophysics, rock physics, history of coastal environments; field study local sites. Repeatable one time. Pre: 309 or consent. DP

GG 444 Plate Tectonics (3) (2 Lec, 1 3-hr Lab) Quantitative geometrical analysis techniques of plate tectonics theory; instantaneous and finite rotation poles; triple-junction analysis; plate boundary stresses. Pre: 200 or consent. (Alt. years) (Cross-listed as OCN 444)

GG 450 Geophysical Methods (4) Combined lecture/lab covering basic geophysical theories, exploration, and interpretation. Seismic reflection and refraction, gravity, and electromagnetics. Constraints on models of Earth’s internal structure and composition. Pre: 250, 303, MATH 241, MATH 242, and PHYS 272; or consent. DP

GG 451 Earthquakes (3) Earthquake seismology. Elastic properties of rocks, earthquake waves, causes, detection, location, and prediction of earthquakes; tsunami generation and other effects of earthquakes. Pre: 304 or consent. (Alt. years) DP

GG 454 Engineering Geology (3) Solutions of geotechnical problems by geologists and engineers through recognition, evaluation, and assessment of geologic processes that impact people, engineering structures, and engineering operations. Group format. GG and CEE majors only. Junior standing and higher. Pre: consent. (Spring only)

GG 455 Hydrogeology (4) (3 Lec, 1 3-hr Lab) Occurrence, characteristics, movement, quality, development, and contamination of water in the Earth’s crust. DP

GG 460 Geological Remote Sensing (4) (3 Lec, 1 3-hr Lab) Combined lecture/lab on the concepts behind, geologic uses for, and techniques of satellite and airborne remote sensing. Lab work will consist of computer image processing. Field trips. Open to non-majors. Pre: 200 or consent. DP

GG 461 Geospatial Information (3) Combined lecture/lab covering the collection, analysis and use of geospatially registered field data. Pre: 200 (or equivalent). (Alt. years)

GG 466 Planetary Geology (3) Comparative geology of terrestrial planets and the Moon, Mercury, Venus, and Earth; impact cratering, volcanism, tectonism, geomorphology, weathering; manned and unmanned space exploration. Pre: any 100-level GG course. DP

GG 470 Undergraduate Thesis (3) Directed research in which the student carries out a scientific project of small to moderate scope with one or more chosen advisors. The student must complete a document in the style of a scientific journal article. Pre: consent.

GG 500 Master’s Plan B/C Studies (1) (Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.

GG 593 Earth and Planetary Sciences Workshops (V) Designed for in-service school professionals to learn new approaches and concepts in the fields of earth and planetary sciences. Repeatable for credit. Credits earned in these courses cannot be applied for graduate degrees.

GG 600 Equations of Geophysics (3) Least-square approximation of functions by orthogonal series; potential, wave heat flow equations; boundary value problems; Besel Hankel functions, spherical harmonics, potential theory, plane waves, spherical waves, emphasis on wave understanding and exploration. Pre: MATH 244 or MATH 253A, PHYS 400, or consent.

GG 601 Explosive Volcanism (3) Explosive volcanic eruptions: causes from consequences. Review of current physical volcanology including ascent and fragmentation of magma, transport and deposition processes in pyroclastic eruptions, volcanic crisis management and volcanic eruption scenarios. Seven-day field trip. A-F only. Pre: 300 or consent.

GG 602 Theoretical Petrology (3) Derivation of phase diagrams from basic thermodynamics principles. Equilibria of natural silicate systems. Crystal chemistry, kinetics, diffusion, etc., Applied to igneous and metamorphic petrology. Pre: 302, 325, and CHEM 351 (or concurrent) or consent. (Alt years)

GG 603 Petrology of Ocean Lithosphere (3) (2 Lec, 1 3-hr Lab) Petrogenesis of the oceanic lithosphere, including mantle processes and rocks from mid-ocean ridges, seamounts, oceanic hotspots, back-arc basins, and intra-oceanic arcs. Pre: 302 or consent. (Alt. years)

GG 604 Disaster Management: Understanding the Nature of Hazards (3) Combined lecture/discussion in disaster management focusing on the scientific understanding of the forces and processes underlying natural hazards; and human attempts to respond to these through mitigation and planning activities. Pre: PLAN 670 or consent. (Once a year) (Cross-listed as PLAN 670)

GG 605 Lava Flow Rheology and Morphology (3) Effusion eruptions: from eruption to final flow form. Includes: rheology, effusion rate, heat loss, and field measurements, followed by infiltration, flow forms, lava lake domes, flow hazard and modeling. Field trips to Kilauea and Makapuu. A-F only. Pre: 300 or consent. (Alt. years)

GG 606 Current Events in Volcanology (1) Discussion of active areas of volcanism and new publications on volcanology. Repeatable four times. Pre: 300 (or concurrent) or consent.

GG 607 Submarine Volcanoes (3) Seminar exploring different aspects of submarine effusive
and explosive volcanism, hydrothermal activity, and volcano-hosted ecosystems. Repeatable one time. A-F only. Pre: 300 or consent. (Alt. years: fall)

GG 608 Isotopes and Trace Elements (3) Principles of radiogenic and stable isotope, and trace element geology applied to igneous petrology, mantle dynamics, plate tectonics, and terrestrial evolution. Pre: 302 and 325. (Alt. years)

GG 609 Graduate Teaching Geology (V) For GG graduate students who lead, under faculty supervision, a scheduled course in Geology and Geophysics. The instructor will define the student’s responsibilities when offering GG 609, and these responsibilities must be met for a passing grade. As the consent to take the class must also be granted by the department chair, the chair reserves the responsibilities required by the instructor. GG graduate students only. CR/NC only. Pre: consent of instructor and department chair.

GG 610 Graduate Seminar (1) Seminar in which students present a 15–20 minute talk on their research or a related topic. Meets once a week with two to three talks per meeting. Graduate students are required to register for this course once per year. Repeatable eight times.

GG 611 Accelerated Introduction to Geology I (3) Lecture presenting a rapid-paced survey of geology and geophysics for graduate students. Includes origin of the Solar System, tectonics, volcanology, whole-earth composition, plate-tectonic reconstructions, petrology (igneous, metamorphic, and sedimentary), historical geology, and hydrology. Saturday field trips. (Fall only)

GG 612 Accelerated Introduction to Geology II (3) Lecture presenting a rapid-paced survey of geology and geophysics for graduate students. Includes Earth structure, rheology, seismology, dynamics, origin of continents, global change, energy sources, environmental geology, and natural hazards. Saturday field trips. (Fall only)

GG 614 Advanced Field Study (V) Shipboard and land-based projects. Repeatable eight times. Pre: consent.

GG 616 How to Write a Scientific Paper (3) Designed for students who have collected data and want to know how to publish their work in a scientific journal. Covers the essential parts of paper preparation and submission. GG students only. A-F only. Pre: consent. (Alt. years: fall)

GG 621 Electron Microprobe Analysis (2) Combined lecture-lab on the principles of chemical analysis by electron microprobe and X-ray fluorescence. Hands-on experience with the electron microprobe. Required to operate the UH electron microprobe. Pre: consent. (Fall only)

GG 625 Seminar in Marine Geology and Geophysics (V) Current research topics. Repeatable eight times. Pre: 423 or OCN 622, or consent.

GG 630 Numerical Modeling of Physical Systems (3) Finite difference, finite element, and other modeling techniques applied to geophysical and geophysical problems. Physical modeling of heat flow, molecular diffusion, sedimentation and melting, deformation, fluid flow, wave propagation, and other phenomena. Repeatable one time. A-F only. (Once a year)

GG 631 Geophysics—Solid, Fluid, and Wave Mechanics (3) Continuum mechanics in geophysics, as applied to the deformation of Earth materials (elastic, viscous, viscoelastic, and plastic deformations) and seismic wave propagation (body waves, surface waves, anisotropy, and attenuation). Pre: (with a minimum grade of B-) for PHYS 170, PHYS 272, and MATH 307 or GG 312 (or equivalent). Pre: consent. (Fall only)

GG 632 Geophysics—Gravity, Magnetics, and Heat Transfer (3) Fundamental theory and practical applications of the use of gravity, magnetics, and heat conduction to probing the structure of the Earth; heat transfer via mantle convection is a major control on Earth’s internal structure. Pre: (with a minimum grade of B-) for PHYS 170, PHYS 272, and MATH 307 or GG 312 (or equivalent). (Spring only)

GG 638 Earth System Science and Global Change (3) Global view of the planet and how it functions as an integrated unit. Biogeochemical processes, dynamics, and cycles, and analysis of natural and human-induced environmental change. Chemical history of ocean-atmospheric-terrestrial system and co-evolution of the biota. Repeatable one time. Pre: BS in environmentally related science or one year of chemistry, physics, and calculus; or consent. (Cross-listed as OCN 638)

GG 639 Stable Isotope Biogeochemistry (3) Stable isotope geology applied to questions of biogeochemical cycling in the oceans, sediment diagenesis, paleoceanography, environmental geology and ecology. Pre: 325 or GG 312. (Alt. years)

GG 640 Coastal Geochemistry (3) Geochemistry at the land-ocean interface: coastal hydrology, subterranean estuaries and coastal mixing and their importance in governing the distribution of selected radionuclides, metals and nutrients. Combined lecture-lab with field trips and group projects. Pre: CHEM 162, and MATH 241 or MATH 251A; or consent. (Alt. years)

GG 641 Origin of Sedimentary Rocks (3) (2 Lec, 1-3 Lab) Environment of deposition and subsequent diagenesis of modern and ancient sediments. Petrogenesis of siliciclastic, carbonate and bioherms. Sedimentology, sedimentary petrography and pebbles one time. Pre: consent. (Alt. years) (Cross-listed as OCN 641)

GG 642 Elemental Composition Changes (2) Changes in the chemical composition of meteorites, bulk Earth, Earth’s mantle and crust, sedimentary rocks, hydrosphere and biosphere, and underlying principles. Pre: consent. (Alt. years) (Cross-listed as OCN 642)

GG 644 Sedimentary Geochemistry (3) Geochronometric and isotopic methods and their use in interpreting the origin of sediments, sedimentary rocks, and volcanics over a range of geologic time scales and temperature conditions. Pre: CHEM 171, or CHEM 161 and CHEM 162; PHYS 152; and MATH 242 or MATH 252A; and consent. (Alt. years) (Cross-listed as OCN 644)

GG 650 Seismology (3) Elastodynamics, wave equations, body waves, surface waves, free oscillations, seismometry, seismogram interpretation, tectonics, inversion, source theory, and waveform modeling. Pre: 600 or consent.

GG 651 Geomagnetism and Cosmic Magnetism (3) Magnetic fields of Earth, planets, stars, and galaxies; dynamo theories; paleomagnetism; terrestrial and lunar rock magnetism; planetary, regional, and local geomagnetic sounding. Pre: consent. (Alt. years)

GG 652 Gravity, Magnetics, Heat Flow (3) Uses of selected potential field and electromagnetic methods in tectonics or in exploration. Processing and interpretation of magnetic and gravity data; modeling and inversion Pre: consent. (Alt. years)

GG 655 Groundwater Modeling (3) Introduction to the finite-difference method; steady-state and transient groundwater flow in saturated and unsaturated systems. Numerical methods and applied heat flow; groundwater recharge and aquifer evaluation. A-F only. Pre: CEE 627 or consent. (Fall only) (Cross-listed as CEE 623)

GG 657 Astrochemistry—A Molecular Approach (3) Formation of astrobiologically important molecules and their precursors in the interstellar medium and in our solar system; first principles and latest trends. Pre: consent. (Fall only) (Cross-listed as ASTR 657 and CHEM 657)

GG 660 Introduction to the Solar System and Planetary Protection (3) The geology of solar system bodies (terrestrial planets, satellites, asteroids, comets) and the processes that make and modified them (nuclear chemistry, planetary accretion, impact cratering, volcanism, tectonism, geomorphology, weathering). Pre: graduate students only. (Alt. years)

GG 666 Planetary Surfaces (3) Comparative geology of terrestrial planets (moon, Mars, Mercury, Venus, and Earth); impact cratering, volcanism, geomorphology; remote sensing; manned and unmanned space exploration. Pre: 601, ASTR 630; or consent. (Alt. years)

GG 669 Cosmochemistry (3) Formation and evolution of planets and astrophysical objects, geologic bodies, and abodes of life; current understanding from studies of the Solar System, star formation, meteorites, exoplanets; theory of formation and dynamics; atmospheres, oceans, habitability, biosignatures. Pre: 325 or CHEM 351 (or equivalent); or consent. (Alt. years)

GG 670 (Alpha) Geochemistry of Planetary Bodies (3) Composition and geologic evolution of the planets and their moons; impact cratering; volcanism; tectonics; remote sensing; managed exploration and future missions. (B) the moon; (C) Mars. Pre: 666 or consent.

GG 671 (Alpha) Remote Sensing (3) Spectroscopic, radar, thermal, and other methods for remote sensing applied to geologic problems; instrumental design and data analysis. (B) planets; (C) volcanoes. Pre: 666 or consent.

GG 672 Seminar in Tectonics (3) Evolution of ocean basins, margins, foldbelts, and platforms, from plate tectonics and regional syntheses of structure, geophysics, petrology, and stratigraphy. Repeatable eight times. (Alt. years)

GG 673 (Alpha) Extraterrestrial Material (3) Mineralogical and compositional characteristics of extraterrestrial material and the implications for the origin and history of the solar system. The subject is treated in two full-semester courses: (B) meteorites; (C) petrology of the Moon and Mars. Pre: consent.

GG 674 Paleogeography (3) Study of the paleogeography and paleoclimatic evolution of the Earth’s oceans, atmosphere and biosphere. Repeatable one time. Pre: consent. (Alt. years) (Cross-listed as OCN 674)


GG 681 Continuum Mechanics (3) Continuum mechanics in geophysics, planetary physics, and structural geology. Tensors; stress, strain, flow; conservation of mass, momentum, and energy; rheology; geophysical fluid dynamics. Pre: PHYS 400, MATH 402, or consent.

GG 691 Data Exploration and Processing (3) Time- and frequency analysis, filtering, factor and cluster analysis, interpolation, quantitative map analysis, and introduction to wavelets and fractals. Pre: 413 or consent.

GG 695 Bayesian Data Analysis (3) Linear and nonlinear techniques for model selection, parameter estimation, simulation and forecasting, from Bayesian principles with particular attention to large data sets and sparse noisy data. Pre: 600 or 691. (Alt. years)

GG 699 Directed Research (V) Repeatable unlimited times. CR/NC only. Pre: consent.

GG 700 Thesis Research (V) Repeatable unlimited times.

GG 701 Physics of the Earth’s Interior (3) Interpretation of geophysical and laboratory data to understand elastic and anelastic properties, composition, phase relationships, temperature distribution in the Earth. Pre: consent. (Alt. years)

GG 703 Fractures and Faults (3) Lecture on elasticity theory, fracture mechanics and boundary element modeling, with application to faults and fractures in the Earth. Pre: consent.

GG 710 Selected Topics in Geology and Geophysics (2) Content to be announced. Repeatable eight times. Pre: consent.

GG 711 Special Topics in Geology and Geophysics (3) Content to be announced. Repeatable eight times. Pre: consent.

Key to symbols & abbreviations: see the first page of this section.
GG 740 MGeo Seminar (1) Seminar to improve student awareness of trends and practices in geosci- ence professions, and develop ability to prepare, deliver, and evaluate a professional scientific presen- tation. Targets: alumni, employers, oral presentation, and technical criticism. Repeatable two times. A-F only. (Spring only)

GG 750 MGeo Professional Project (V) Practical hands-on professional experience, typically with a local college or involving a final written report and an oral presentation. A grade of credit is assigned when the internship presentations are satisfactorily completed. Repeatable up to six credits. MGEQ majors only. CR/NC only.

GG 800 Dissertation Research (V) Repeatable unlimited times.

Geriatric Medicine (GERI)

School of Medicine

GERI 541 Geriatric and Palliative Care (V) This four-week rotation provides medical students with an overview of geriatric and palliative medicine in outpatient, inpatient, home care and nursing home set- tings. Students will receive one half-day per week of geriatric medicine didactic seminars and one half-day per week of palliative medicine didactic sessions. The clinical experience is provided at several teaching sites including Kuakini Medical Center, Queen’s Medical Center, the VA, several nursing homes on O’ahu, Kaiser Permanente, Hospice Hawai‘i, St. Francis Hospice, Kapiolani Hospital, Straus Hospi- tal, and the Pali & Symptom Management Program at Queen’s Medical Center. CR/NC only.

GERI 542 Geriatric Medicine Research (V) Medi- cal students will have the opportunity to complete a research project in the field of epidemiology of aging, and present an abstract at a local meeting. Basic principles of epidemiology and statistics will be taught. Repeatable one time. CR/NC only. Pre: departmental approval.

GERI 545 Geriatric and Palliative Medicine Elective (V) Four-week elective provides medical students with an overview of geriatric and palliative medicine in outpatient, inpatient, home care and nursing home settings. Students receive one half-day per week of geriatric medicine didactic seminars and one half-day per week of palliative medicine didactic sessions. CR/NC only.

GERI 595 Medical Student Training in Aging Program (2) Introduces medical students to clinical, research, and educational experiences in geriatrics, un- der the mentorship of faculty members. MD majors only. CR/NC only. Pre: MDEDS 554 or consent. (Fall only)

German (GER)

College of Languages, Linguistics and Literature

All courses are conducted in German. A grade of C- or better in the prerequisite courses is required for continua-
tion.

GER 101 Elementary German (3) Conversation, grammer and reading. HSL

GER 102 Elementary German (3) Conversation, grammar and reading. Pre: 101. HSL

GER 110 Intensive Elementary German (6) Combined content of 101 and 102 covered in one intensive course. (Summer only) HSL

GER 201 Intermediate German (3) Conversation, grammar, reading and writing. Pre: 102. HSL

GER 202 Intermediate German (3) Conversation, grammer, reading and writing. Pre: 201. HSL

GER 260 Intensive Intermediate German Abroad (V) Intensive course of formal instruction on the second-year level in German language and culture in Germany. Pre: 102. HSL


GER 303 Reading and Writing (3) Further development of reading and writing skills through the study of modern short stories by major German language authors. Pre: 202. DL

GER 304 Business German (3) Advanced German conversation, reading, and writing with a special emphasis on the vocabulary and cultural context of the German business world. Pre: 202 or consent.

GER 305 Contemporary Topics in Media (3) Development of listening and speaking, reading and writing skills through analysis and discussion of media: newspaper articles, radio, and television programs and online stories. Pre: 202 or consent.

GER 306 Conversation and Composition (3) Intensive practice in listening, speaking, reading, and writing with selected grammar review. Pre: 202 or consent.

GER 307 German for Reading I (3) Development of reading skills through the study of short, scholarly, technical, and literary texts. Pre: 202 or consent.

GER 308 German for Reading II (3) Further development of reading skills through the study of short scholarly, technical, and literary texts. Pre: 202 or consent.

GER 312 Introduction to German Literature 1750-1914: (3) Reading and discussion of repre- sentative works of German literature from 1750 to 1914. Pre: 303 or consent. DL

GER 313 Introduction to German Literature 1914-Present (3) Reading and discussion of repre- sentative works of German literature from 1914 to present. Pre: 303 or consent. DL

GER 320 German Cinema (3) Study of German film history, film analysis, film theory, and film study. Lectured and discussion. Repeatable one time. Pre: take LLEA 320 one time, for different topics. 6 cr. limit on GER/LLEA 320 courses. Pre: 303 or 306. DH

GER 360 Intensive Third-Level German Abroad (V) Intensive course of formal instruction on the third-year level in German language and culture in Germany. Pre: 202 or 260.

GER 361 Germanic Civilization to World War II (3) German cultural heritage and history in Ger- many, Austria, and Switzerland until World War II. Pre: 202 or consent. DH

GER 362 Modern German Culture (3) Modern culture in post-World War II Germany, Austria, and Switzerland. Pre: 202 or consent. DH

GER 371 Practical German for use in Hawai‘i (3) Use of German in practical situations in Hawai‘i, e.g., in travel industry. Pre: 202.

GER 409 Enlightenment—Sturm und Drang (3) Lessing and his contemporaries; early dramas of Goethe and Schiller; Goethe’s early lyrics. Pre: 306 or consent. DL

GER 410 Classicism (3) Classical writings of Goethe and Schiller; some reference to other writers. Pre: 306 or consent. DL

GER 411 Romanticism (3) Novalis, Tieck, E. T. A. Hoffmann, Eichendorff, etc. Pre: 306 or consent. DL

GER 412 Poetic Realism (3) Masterworks by Buchner, Raabe, Storm, Keller, Meyer, Hebbel, and others. Pre: 306 or consent. DL

GER 415 Culture of Two Germanies: 1945-1989 (3) Literature, culture, and film on of East and West Germany. Pre: 199. Pre: 202 or consent. DH

GER 416 German Literature, Culture and Film: 1989 to Present (3) Study of German literature, culture and film, 1989 to present. Credit cannot be earned for both 416 and LLEA 416. Pre: 303 or 306 or consent.

GER 428 Survey of German Lyric Poetry (3) Individual interpretation of German lyric poetry. Pre: 306 or consent. DL

GER 460 Intensive Fourth-Level German Abroad (V) Intensive course of formal instruction on the fourth-year level in German language and culture in a German-speaking country. Pre: 360 or equivalent.

Global Health Protection and Secu- rity (GHPS)

Interdisciplinary Programs


GHPS 301 Populations of Hawai‘i (3) Demographic characteristics of Hawai‘i’s populations: origins, distribution, growth, and behaviors. Open to nonmajors. A-F only. Pre: an introductory social science course (ECON 120, 130, 131; GEOG 150; POLS 110; or SOC 100) or consent. DS

GHPS 302 Population in the Pacific Islands (3) Survey of the characteristics of human populations of the Pacific Islands region. Working of population forces from early settlement to the demographic transitions of the present day. Pre: consent. DS

GHPS 401 Forced Migration (3) Global view of refugee and other forced migration; emphasis on humanitarian assistance. Pre: junior standing and consent. DS

GHPS 412 Analysis in Population and Society (3) Global and U.S. patterns of population growth; composition and distribution, elementary demo- graphic techniques; development issues and popula- tion policy. Pre: SOC 300 or consent. (Cross-listed as SOC 412) DS

GHPS 432 Economics of Population (3) Determinants and consequences of growth and structure of human populations. Relationships between eco- nomic factors and fertility, population growth and economic growth. Pre: ECON 301 (or concurrent). (Cross-listed as ECON 432) DS

GHPS 651 Introduction to Human Population (3) Comparative analysis of quantitative and qualita- tive aspects of population; factors affecting size, distribution, and composition; impact of population size and composition on society. (Cross-listed as PH 651 and SOC 651)

GHPS 652 Interdisciplinary Seminar (1) Topics such as contemporary issues in global health and population studies, international health programs, demographic methods, global economy and health, human right and humanitarian assistance, social justice, global environmental changes and health. Pre: consent. (Cross-listed as PH 652)

GHPS 659 Methods of Demographic Analysis (3) Basic mathematical techniques of population data; data sources; population growth; composition; standardization of rates; mortality and the life table; nuptiality and fertility; distribution, migration, urb- anization; projections and stable population theory. (Cross-listed as PH 659 and SOC 659)

GHPS 677 Managing Global Health Service De- livery (3) Provides knowledge, skills, attitudes and resources that health managers require to manage and maintain the quality of partnerships, facilities, programs, community services, people, drugs, and information in limited resources settings. PH majors only. A-F only. (Cross-listed as PH 677)

GHPS 690 Global Health Challenges (3) Ad- dresses critical, contemporary, and transnational issues best addressed by cooperative international action. Health issues are examined in the context of intersecting effects of limited resources, socioeco- nomics, politics, and environmental change. A-F only. (Cross-listed as PH 690)

GHPS 699 Directed Reading and Research (V) Repeatable unlimited times. Pre: consent of program director or instructor.

GHPS 719 Comparative Family and Gender (3) Discusses the major perspectives on family and gender relations and related empirical re- search. Emphasis is on the cross-cultural comparisons across the U.S. and Asia in the context of global- izing economies and cultures. A-F only. (Alt. years) (Cross-listed as SOC 719)

Key to symbols & abbreviations: see the first page of this section.
Greek (GRK)

College of Languages, Linguistics and Literature

A grade of C- or better in the prerequisite course is required for continuation.

GRK 101 Elementary Greek (3) Grammar and vocabulary, with reading of simple Greek. HL

GRK 102 Elementary Greek (3) Continuation of 101. Pre: 101. HL

GRK 201 Intermediate Greek (3) Development of reading and translation skills. Emphasis on prose. Pre: 102 or equivalent. HL

GRK 202 Intermediate Greek (3) Continuation of 201; emphasis on poetry. Pre: 201. HL

GRK 303 Greek Historians (3) Selections from Herodotus, Xenophon, and others. Pre: 201 and 202, or consent. DL

GRK 304 Greek Epic (3) Selections from Homer, Hesiod, and others. Pre: 201 and 202, or consent. DL

GRK 325 Greek Philosophy (3) Selections from Plato, Aristotle, and others. Pre: 201 and 202, or consent. DL

GRK 332 Greek Drama (3) Selections from Aeschylus, Sophocles, and Euripides. Pre: 201 and 202, or consent. DL

GRK 333 Greek Lyric (3) Selections from Sappho, Alcaeus, and others. Pre: 201 and 202, or consent. DL

GRK 490 Seminar in Greek Studies (3) Study of an author or phase in Greek studies. Repeatable unlimited times with consent. Pre: any two 300-level GRK courses, or consent.

Hawaiian (HAW)

School of Hawaiian Knowledge

A grade of C- or better in the prerequisite course is required for continuation. Requirement is different for HAW majors, so please see Kawaihuelani's Academic Programs section for details.

HAW 100 Language in Hawai‘i: A Microcosm of Global Language Issues (3) Survival kit for life in Hawai‘i: Introduction to Hawaiian and language related issues enhancing communicative experience in Hawai‘i. Examination of social, cultural, political, and linguistic cross-cultural interaction locally and globally. Taught in English/Hawaiian and Creole English. FG

HAW 101 Elementary Hawaiian (4) Listening, speaking, reading, writing. Meets five hours weekly; daily lab work. HSL

HAW 102 Elementary Hawaiian (4) Continuation of 101. Pre: 101 or exam or consent. HL

HAW 105 Intensive Elementary Hawaiian (8) Content of 101 and 102 covered in one semester. Meets two hours daily, Monday–Friday, plus lab work. HSL

HAW 200 I Ka ʻOlelo Nā Ke Ola (4) Accelerated lecture/lab to bridge fluent speakers mainly from Kula Kaiapuni into Kāwahiu-hanālani’s system of Hawaiian that reflects a Hawaiian worldview, including HAW 101-201 content, grammar, writing, and spelling conventions. Students matriculate into HAW 202. Pre: instructor consent required. (Spring only) HSL

HAW 201 Intermediate Hawaiian (4) Continuation of 102. Meets five hours weekly; reading of traditional texts; daily lab work. Pre: 102 or exam or consent. HSL

HAW 202 Intermediate Hawaiian (4) Continuation of 201. Pre: 201 or exam, or consent. HSL

HAW 206 Intensive Intermediate Hawaiian (8) Content of 201 and 202 covered in one semester. Meets two hours daily, plus lab work. Pre: 102 or 105, or exam. HSL

HAW 261 Hawaiian Literature in Translation (3) Survey of Hawaiian literature, including prose narrative and poetry with reference to Polynesian and Western themes and forms. DL

HAW 284 Papa Mele I (Mele in the Hawaiian Language Classroom) (3) The incorporation of mele and the performance thereof for the enhancement of second language acquisition in Hawaiian. Pre: 102.

HAW 301 Third-Level Hawaiian (3) Continuation of 202. Conducted in Hawaiian. Advanced conversation and reading. Pre: 202 or exam, or consent.

HAW 302 Third-Level Hawaiian (3) Continuation of 301. Pre: 301 or exam, or consent.

HAW 321 Hawaiian Conversation (3) Systematic practice on various topics for control of spoken Hawaiian. Repeatable up to six credit hours. Pre: 202 or consent.


HAW 332 Listening Comprehension and Transcription (3) Development of listening comprehension through transcription and discussion of tape recordings. Pre: 202.

HAW 345 Ulu ka Hoi (3) Lecture offering focused study and creation of Hawaiian language newspapers with a concentration on the characteristics of writing in this genre. Students will produce a monthly newsletter in Hawaiian. Repeatable one time. Pre: 302 (or concurrent) or consent. DH

HAW 375 Ka Moʻomeheu Hawai‘i (3) A survey course on the study of traditional Hawaiian culture including origins, the socioeconomic system, land tenure, religion, values, and the arts. The course will be taught in Hawaiian. Pre: 302 or consent. DH

HAW 383 Hanaʻo e Pono Hawaiʻi Radio Broadcasting (3) Combined lecture/lab involving students in the planning and production of a weekly Hawaiian language radio broadcast. Includes research, writing, and voicing of mele and their stories on live radio. Repeatable one time. Pre: 302 or 384 (or concurrent with consent), or consent. DH

HAW 384 Ka Haku Mele (3) Composers and Their Compositions. Provides a venue which will allow students to analyze, dissect and discuss mele (song, poetry and chant), paying close attention to the style of composition by identifying recurring nuances found in mele composed by the same as well as various authors. Pre: completion of 202 or consent. (Once a year)

HAW 401 Fourth-Level Hawaiian (3) Advanced reading, writing, and discussion in Hawaiian. Transcribing and translating Hawaiian language tapes, Translating English into Hawaiian, and Hawaiian into English. Pre: 302 or exam, or consent.

HAW 402 Fourth-Level Hawaiian (3) Continuation of 401. Pre: 401 or exam, or consent.

HAW 425 Moʻolelo Hawai‘i (3) Survey of the major works by Hawaiian scholars writing about Hawaiian language and culture. Pre: 302 or consent. DH

HAW 426 Kaʻao Hawaiʻi (3) A survey of the core material written by Hawaiian scholars, including both historical and mythological epics and folk tales. Pre: 302. DH

HAW 427 I Leʻa a Ka Hula I Ka Hoʻopala (3) The incorporation of mele and hula performance with moʻolelo and ʻauana. Pre: 302 or consent.

HAW 428 Ka Manaʻo Hawai‘i–Political Thought in Hawaiian (3) Intensive study of Hawaiian political thought in writing and speech. Pre: 302 (or concurrent) or consent. (Cross-listed as POLS 302C) DH

HAW 443 ʻAe ʻOea (3) Study and translation of traditional Hawaiian language haole and popular music. Pre: 302 (or concurrent) or consent.

HAW 454 History of the Hawaiian Language (3) Development from proto-Polynesian, Phonology, morphology, grammar, and history of research. Pre: 302 (or concurrent) or 452 and 452C, or consent. DH

HAW 462 (Alpha) Haʻuki: Sports Education Through the Medium of Hawaiian (2) Provide Hawaiian language students with linguistic tools necessary to provide sports education to Hawaiian immersion schools and for basic intergenerational use of Hawaiian in the linguistic domain of sports. (B) basketball; (D) volleyball; (F) football; (E) baseball. Repeatable for other topics.

HAW 463 Language for the Classroom (3) Examination of language needs in various classroom settings and introduction to new vocabulary in school content areas. Pre: 302, 452, and consent.

HAW 466 Kuleana Kula Kaiapuni (3) Examination of the political struggles of the Kula Kaiapuni (Hawaiian Immersion Program)–past and present. Special attention given to federal and state governments, Department of Education, and internal political struggles. Pre: 401 (or concurrent with consent).

HAW 470 Hoʻomōhula Haʻawina Kaiapuni Curriculum Development (3) Examination of curricular issues of indigenous language programs; weekly participation in an immersion classroom; development of materials. Repeatable one time. Pre: 302 or consent.

HAW 483 Papa Mele Wahī Pana (3) Will provide students with the opportunity to learn mele, mainly poetry and song, composed specifically for a certain area of Hawai‘i. Pre: 302 or consent.

HAW 484 Hawaiian Poetry (3) Historical survey and analysis of poetry found in traditional chants, folk songs, modern poetry written in Hawaiian. Interpreting and composing Hawaiian poetry. Pre: 302 and consent, or 401. DL

HAW 485 Haku Hanakea–Hawaiian Language Playwriting (3) The creation and authoring of Hawaiian language play scripts based on traditional motifs. Repeatable one time. Pre: 402 (or concurrent) or consent. DA

HAW 486 Kahua Hanakea (Hawaiian Medium Stage Production) (3) From design to performance, students mount an original production based on traditional motifs. Repeatable one time. Pre: 402 or consent. DH

HAW 488 ʻOlelo Noʻeau (3) Survey and analysis of traditional proverbs and their kaona or symbolic meanings. A–F only. Pre: 402 or consent. DH

HAW 490 Ka Makau ʻOlelo A’a Kula Kaiapuni Hawai‘i (1) Assess the linguistic competence of prospective Hawaiian language immersion teachers to assure that all teachers entering the state DOE Hawaiian Immersion Program meet the requirements of the program with respect to Hawaiian language proficiency. CR/NC only. Pre: 402 (or concurrent), and 463 (or concurrent), or consent.

Key to symbols & abbreviations: see the first page of this section.
HAW 499 Directed Studies (V) Study of Hawaiian language through vernacular readings in various academic fields. Repeatable up to 6 credits. Prereq: 302 and consent.

HAW 601 Kakao Mo‘olelo (3) Analyzes various genres of written Hawaiian literature. HAW majors only. Prereq: graduate standing and 402, or consent.

HAW 602 Kakoa‘olelo Oratory (3) A survey of oral performance styles to build increased oral skills. Prereq: graduate standing and 601, or consent.

HAW 604 Haku Palapana Nai Laoe o’Writing a Hawaiian Master’s Proposal (3) Seminar to select and develop students’ research topic, proposal, and organizational plan for Plan A or B completion. Majors are encouraged not to take this course in their first semester of the program. A-F only. (Once a year)

HAW 605 Ka Hana Nui i (Research Methods) (3) Research methodology course utilizing active research in the major repositories of Hawaiian language materials and Hawaiian-related knowledge. A-F only. Prereq: 604 or consent. (Once a year)

HAW 612 Na Mana o‘Politika Hawai‘i (Hawaiian Political Thought) (3) Study of Hawaiian political thought in writing from ca. 1825 to the present, with emphasis on theory and research methods. Prereq: 402, 412, and POLS 303, or consent. (Cross-listed as POLS 612)

HAW 615 Kuana‘ike (3) The examination of Hawaiian ways of speaking, as contrasted with English focusing on those features that are uniquely Hawaiian and can be said to constitute a Hawaiian worldview. Section 1 taught in Hawaiian; Section 2 taught in English. Prereq: 402 or consent for Section 1.

HAW 625 Mo‘olelo Hawai‘i (3) Intensive study, research, and analysis of Hawaiian history. Repeatable two times with consent of advisor. Prereq: 402 or consent.

HAW 638 (Alpha) Na Mea Kakau/Na Haku Mo‘olelo (3) Intensive study of an individual author, his/her works and nuances of his/her works. (E.) H. Kaneo‘pilo. (F.) S. Kamakau. Prereq: 601 or consent. (Once a year)

HAW 643 Ke A'o ‘Olelo Hou ‘Ana (Teaching Hawaiian As a Second Language) (3) Survey of existing texts and teaching resources; analysis of student clientele and needs; review of pedagogical approaches for heritage and non-heritage learners; syllabus and materials development; practicum. Prereq: 401 and 452 or consent.

HAW 652 Pilina ‘Olelo (3) In-depth examination and research into the grammar of Hawaiian including discussion of theories of language and incorporation of meta-language. Prereq: 452 or consent. (Once a year)

HAW 654 ‘Olelo Ni‘ihau (3) Intensive, advanced study and analysis of traditional Hawaiian Ni‘ihau dialect through face-to-face conversations with Ni‘ihau native speakers, listening to audio recordings and watching video recordings of Ni‘ihau native speakers. Prereq: 402 (with a minimum grade of B-) or consent.

HAW 684 Nui‘i Mele (3) Intensive study focusing on original compositions of Hawaiian poetry and song. Prereq: 402 and 484, or consent.

HAW 695 Papahana Lao'o (V) Research for Plan B project/non-thesis. May include but not limited to internship with cultural practitioner. Repeatable up to six credits. CR/NC only. Prereq: consent of graduate advisor.

HAW 699 Directed Research (V) Repeatable unlimited times. A-F only. Prereq: consent of instructor and graduate advisor.


Hawaiian Studies (HWST)

HWST 107 Hawai‘i: Center of the Pacific (3) An introduction to the unique aspects of the native point of view in Hawai‘i and in the larger Pacific

Key to symbols & abbreviations: see the first page of this section.

HWST 207 Hawaiian Perspectives in Ahupua‘a (3) Examination of the ahupua‘a system: its mythologies, place names, history, poetry and early documentation of it as it was conceptualized by the ancient Hawaiians and exploration of its relevance in modern society. A-F only. Prereq: 107.

HWST 220 Introduction to Hawaiian Visual Culture Studio (3) Introduction to a variety of material, fiber, bone, wood, and stone skills in the media used in the Hawaiian culture. Research and explore basic techniques within the media with emphasis on cultivation, preparation, use, and conservation. Repeatable one time. A-F only. Prereq: 107(C) or consent. HFWST 222 Hawaiian Fiber Arts Studio-Hano Ne’au Ma‘awe (4) (2 cr. Lect, 2 cr. Lab) Introduction to a variety of fibers used in the Hawaiian culture. Emphasis on cultivation, preparation, use, and conservation of the fibers. Areas explored are kapa, plaiting, netting and twining. A-F only. Prereq: 107 or 107C, or consent. (Once a year)

HWST 224 Introduction to Hawaiian Painting and Drawing Studio (3) Research and express personal relationships to specific Hawaiian paradigms through Hawaiian visual culture. Introduction to painting and drawing media and exploration of various materials and techniques as applied to individual student styles. A-F only. Prereq: 107 or 107C, or consent. (Once a year)

HWST 225 Introduction to Hawaiian Printmaking Studio (4) (2 cr. Lect, 2 cr. Lab) Introduction to Native Hawaiian perspective and world view in images used in print and the basic material, technical, and conceptual aspects of hand printed imagery. Prereq: 107 or HAW 102. (Fall only)

HWST 270 Hawaiian Mythology (3) Survey of gods, ‘umakua, kupua, mythical heroes, heroines, and their kinolau as the basis of traditional Hawaiian metaphor. Prereq: 107 or HAW 102. (Fall only)

HWST 281 Ho‘okele I: Hawaiian Astronomy (3) Introduction to Hawaiian views of astronomy and the stars used by Polynesian Voyaging Society navigators. Introduction to various Pacific island non-instrument navigation systems and star names. Restricted to majors.

HWST 281L Ho‘okele I Laboratory (1) (1 3-hr Lab) Stargazing laboratory to accompany 281. Prereq: 281 (or concurrent).

HWST 282 Ho‘okele II: Hawaiian Navigation (3) Hawaiian and other Oceanic canoe design, navigation, Pacific weather, sailing dynamics for canoes, and sail planning strategies used by Polynesian Voyaging Society navigators for long voyages.

HWST 282L Ho‘okele II Laboratory (1) (1 3-hr Lab) Hands on experience on voyaging skills and sailing canoes to accompany 282. Prereq: 282 (or concurrent).


HWST 301 Perspectives in Hawaiian Studies (3) Interdisciplinary lectures and discussions examining traditional and contemporary experiences in Hawaiian society and setting; resources, methods, and techniques. Repeatable one time. Prereq: HAW 202 or consent.

HWST 307 Mālama ‘Āina Resource Management Visual Technologies (3) Requires a broad set of knowledge systems. Will introduce students to a variety of visual technologies for use in resource management and the ethical application of these technologies. Prereq: 107 and 207, or consent.

HWST 310 Native Hawaiian Traditions in Literature (3) Discusses theoretical frameworks, main features, and cultural contexts of Hawaiian literature. Prereq: 107, 270, and HAW 202; or consent.

HWST 314 Hawai‘i Historical Archaeology (3) Survey of major Hawaiian chiefly lineages from the four main islands: Hawai‘i, Māui, O‘ahu and Kaua‘i. Political history from the Kumulipo to Western contact. Prereq: HAW 202.

HWST 321 Chief’s Post-Contact Hawai‘i (3) Survey of Hawaiian chiefs from 1778 to the present, including genealogy, political function, and historical impact. Prereq: 107, 341, or HAW 201.

HWST 325 Hawai‘i Mythology (3) Thematic exploration of some common myths of Hawaiian history, including ‘aumakua, ‘aumua, Hawaiian spirituality, and the material, technical, and conceptual aspects of hand printed imagery. Prereq: 107 or HAW 102. (Fall only)

HWST 351 Mahi‘ai Kalo I: Taro Cultivation (3) Historical, cultural and philosophical foundations of the cultivation and uses of taro. A-F only. Prereq: 107. (Fall only)

HWST 352 Mahi‘ai Kalo II: Advanced Taro (3) In-depth study of taro cultivation techniques and systems. A-F only. Prereq: 351

HWST 353 Malama Loko Pa‘a (4) Study of traditional Hawaiian fishpond management with hands-on experience at He‘eia fishpond near Kane‘ohe, merging traditional Native Hawaiian knowledge and ways of seeing with Western science. A-F only. Prereq: 107 or HAW 101 or BOT 105, or consent. (Once a year)

HWST 362 Pana O‘ahu: Famous Place Names (3) A survey of the famous place names in each ahupua‘a of O‘ahu, including acn images of mythical heroes, heiau, fishponds, wind, rain names, and their metaphoric value in Hawaiian literature. Prereq: 107, 270, or GEOG 101; and HAW 202.

HWST 365 Pana Ka‘ū: Historical and Contemporary Sites on the Northwestern Hawaiian Islands (3) Will look at the use of the Northwestern Hawaiian Islands during pre-contact times, the historical period of the Kingdom of Hawai‘i, after the islands were ceded to the U.S., and the contemporary politics that surround the region today. A-F only. Prereq: 107 or consent.

HWST 372 Oli Makawalu: Makawalology in Hawaiian Protocol Chants (3) Introduces
the use of Makawalu Methodology to analyze kaona in Hawaiian protocol chants, which influences the oral production of such chants. A-F only. Pre: 270 (or concurrent) and HAW 201 (or concurrent), or consent.

HWST 390 Issues in Modern Hawai‘i (3) Cultural and political changes affecting current Hawaiian movement; historical colonization; conflicts over tourism, the military, and agriculture; forms of native self-determination. Pre: junior standing or consent. DH

HWST 396 Native Hawaiian Rights and Practices (3) Students will critically analyze, interpret, and legal foundations by: (1) reviewing Hawai‘i’s historical traditions and customs, (2) learning legal analysis techniques, and (3) applying those techniques to issues that govern native Hawaiian “rights” today. Sophomore or higher standing. Pre: 107, 270, and 341 (or concurrent) and HAW 102. (Fall only) DH

HWST 421 Visiting Artist Seminar (4) (2 cr. Lec., 2 cr. Lab) Explore indigenous concepts through the media of a visiting indigenous master artist by looking at traditional and contemporary arts and cultures, and the possibilities for contemporary expression in other media. Repeatable one time. HWST majors only. A-F only. Pre: 107/107C, one course in 220 level (222, 224, 225), one course in 320 level (322, 324, 325); or consent. (Once a year)

HWST 440 Māhele Land Awards (3) Practical on-site lectures. Topics include traditional Hawaiian, scientific and legal traditions of O‘ahu, from traditional Hawaiian, scientific and legal traditions of O‘ahu, from traditional Hawaiian, scientific and legal traditions of O‘ahu, from traditional Hawaiian, scientific and legal traditions of O‘ahu, from traditional Hawaiian, scientific and legal traditions of O‘ahu, from traditional Hawaiian, scientific and legal traditions of O‘ahu, from traditional Hawaiian, scientific and legal traditions of O‘ahu, from traditional Hawaiian, scientific and legal traditions of O‘ahu, from traditional Hawaiian, scientific and legal traditions of O‘ahu, from traditional Hawaiian, scientific and legal traditions of O‘ahu, from traditional Hawaiian, scientific and legal traditions of O‘ahu, from traditional Hawaiian, scientific and legal traditions of O‘ahu, from traditional Hawaiian, scientific and legal traditions of O‘ahu, from traditional Hawaiian, scientific and legal traditions of O‘ahu, from traditional Hawaiian, scientific and legal traditions of O‘ahu, from traditional Hawaiian, scientific and legal traditions of O‘ahu, from

**Key to symbols & abbreviations:** see the first page of this section.

**Stand the significance of secondary sources in Hawaiian subjects. This makes up part of the Hawaiian Studies graduate core. A-F only. Pre: 107, 270, 341 (or concurrent), 342 (or concurrent), and one of the following: 343 (or concurrent) or 390 (or concurrent) or 490 (or concurrent); or consent.**

**HWST 604 Writing a Hawaiian Thesis (3)** Seminar to help fashion student’s research and thesis proposal. To be taken by all HWST MA students as they begin designing their capstone project. Course will be team-taught by HWST faculty. Repeatable one time. A-F only.

**HWST 620 ‘Ike Pono-Visual/Interpretations (3)** Graduate seminar and visual studio that examines (from a Kanaka Maoli viewpoint) colonial images and historical and present day conflict; resistance and re-righting. A-F only. Pre: 107/C, and one course from 220-225, and one course from 320-325; or consent. (Fall only)

**HWST 621 ‘Ike Maka-Visual/Cultural Knowl- edge (3)** Graduate seminar and visual studio that examine Hawaiians carefully examines and develops critical consciousness—from a Kanaka Maoli viewpoint—visual hege- mony, rhetorical tropes; and representation—imag(in)ing and re-imag(in)-ing. HWST majors only. A-F only. Pre: 620 or consent. (Spring only)

**HWST 640 Mo’olelo ʻŌiwi: Historical Perspec- tives (3)** Research seminar for developing interpreta- tions of the past from Native Hawaiian and foreign views with particular emphasis on understand- ing the meaning of culturally-based knowledge systems. A-F only.

**HWST 650 Hawaiian Geography and Resource Management (3)** Seminar in geography of Hawai‘i from a Native Hawaiian perspective. This seminar will enable the researcher to define and develop resource management methods consistent with Native Hawaiian understandings and traditions. A-F only. Pre: 107, 270, 341 (or concurrent), 342 (or concurrent), and one of the following: 343 (or concurrent) or 490 (or concurrent) or 490 (or concurrent). (Once a year)

**HWST 670 Kumu Kahiki: Comparative Hawai- ian and Tahitian Cosmogonies (3)** Seminar comparing Gods/myths from Ancient Tahiti by Teutira Henry (600 pages) with the six volumes of Hawaiian historians Kamakau and Malo. A-F only. Pre: 341 or consent. (Alt. years)

**HWST 671 Kumu Kahiki: Pacific Life Narra- tives in Mixed Media and Literature (3)** Research seminar in relevant literature, histories of interaction, colonization, and literary politics in the Pacific region through the examination of life narratives in mixed media and literature. A-F only. HWST majors only. Pre: 603 (or concurrent) or consent. (Once a year)

**HWST 675 Huakia’i Huli Heian Hawai‘i’iuia‘ike: Study Abroad on Polynesian Temples (6)** Comparative study of Hawaiian/Polynesian temple design taught over a 3-week period in Hawai‘i and Poly- nesia. Travel costs to be paid by student. Pre: 670 (with a minimum grade of B) and HAW 302 (with a minimum grade of B) or consent. (Summer only)

**HWST 690 Kikulu Aupuni: Envisioning the Nation (3)** A research seminar aimed to provide an overview of community activism and Native Hawaiian empowerment in Hawai‘i in contexts that range from local to international, and to provide a foundation for further study and professional growth. A-F only. Pre: 107, 270, 341 (or concurrent), 342 (or concurrent), and one of the following: 343 (or concurrent) or 390 (or concurrent) or 490 (or concurrent) or 490 (or concurrent); or consent. A-F only. Pre: consent.
**Health Sciences and Social Welfare (HSSW)**

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<tr>
<td>HSSW 477</td>
<td>Southeast Asian Cultures in Health/ Social Welfare</td>
<td>3</td>
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<tr>
<td>HSSW 478</td>
<td>Pacific Cultures in Health/Social Welfare</td>
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The study of cultures and their implications in the health and social welfare context for a number of countries in Southeast and South Asian region.

**Hindi (HNDI)**

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<td>HNDI 201</td>
<td>Intermediate Hindi</td>
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<tr>
<td>HNDI 301</td>
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Students choosing Hindi for the language requirement should realize it may not be offered if demand is limited.

**History (HIST)**

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<tr>
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<tr>
<td>HIST 162A</td>
<td>World Cultures in Perspective</td>
<td>3</td>
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<td>HIST 230</td>
<td>Early European Civilization</td>
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<td>HIST 231</td>
<td>European Civilization 1500-1800</td>
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<td>HIST 232</td>
<td>Modern European Civilization 1800-2000</td>
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<td>Civilizations of Asia</td>
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<td>HIST 242</td>
<td>Civilizations of Asia (3)</td>
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<td>HIST 281</td>
<td>Atlantic History: Colonies to Revolutions</td>
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<td>HIST 284</td>
<td>History of the Hawaiian Islands</td>
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<td>HIST 288</td>
<td>Survey of Pacific Islands History</td>
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<td>History of the Philippines</td>
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<td>History of Early India</td>
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<td>India and South Asia since 1700s</td>
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<td>Way of Tea in Japanese History and Culture</td>
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<td>The Samurai of Japan</td>
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<td>Ancient Rome: The Republic (3)</td>
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<td>HIST 334</td>
<td>Ancient Rome: The Empire (3)</td>
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<td>HIST 335</td>
<td>Early Middle Ages 300–900 (3)</td>
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<td>HIST 336</td>
<td>High Middle Ages 900–1300 (3)</td>
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<td>HIST 337</td>
<td>The History of Economic Thought (3)</td>
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<td>HIST 338</td>
<td>European Intellectual History (3)</td>
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<td>HIST 339</td>
<td>Renaissance and Reformation (3)</td>
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<td>HIST 342</td>
<td>The History of Economic Thought (3)</td>
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<td>HIST 343</td>
<td>Reacting to the Past (3)</td>
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<td>HIST 344</td>
<td>Modern Germany (3)</td>
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Key to symbols & abbreviations: see the first page of this section.
HIST 345 France in the Old Regime (3) Major social, political, and intellectual developments: Renaissance, Reformation, religious wars, Richelieu, Louis XIV, Enlightenment, and Revolution. DH
HIST 346 Modern France (3) Political, social, economic, and intellectual developments from Revolution and Napoleon to the present. DH
HIST 347 Tudor-Stuart Britain (3) Traces major developments in British politics, society, and culture between the late Medieval and Modern Eras. DH
HIST 348 Modern England (3) Interaction of 17th-, 18th-, and 19th-century intellectual, political, economic, and social changes, which together produced the British Empire and modern Britain. DH
HIST 349 British Empire (3) Origins and expansion of the British empire between the twentieth and twenty-first centuries includes imperial policies affecting Britain, Australia, India, Ireland, and Southern Africa. Open to nonmajors. DH
HIST 350 Iberia in Asia and the Pacific (3) Comparative exploration of the Iberian empires—Spain and Portugal—and their political, economic, and cultural interactions with indigenous societies in Asia and the Pacific. A-F only. Pre: sophomore standing or consent.

DH 351 East European Empires (3) Comparison of Austrian, Russian, and Roman-Catholic empires by examining political ideologies, religious lifestyles, and ethno-linguistic identities. Pre: sophomore standing or consent. (Alt. years) DH
HIST 352 France and Empire (3) Lecture/discussion exploring the history of France’s relationship with imperialism from the Renaissance to the present. Pre: upper division standing or consent. (Once a year) DH
HIST 354 Introduction to Islamic History (3) Muhammad, the Arab conquests, the Caliphate; fundamentals of Islam; classical Islamic civilization; development of Islam into modern times with emphasis on the Middle Eastern heartland. DH
HIST 355 The Making of the Modern Middle East (3) Survey of developments that created the system of nation-states in the Middle East. History of the Ottoman Empire and the Republic of Turkey; Egypt; the Arab world; Israel and Iran. Recommended: 354. DH
HIST 356 Survey of African History (3) The history of Africa from earliest times to the present: the rise of indigenous civilizations, European and Muslim impact, colonialism and nationalism, and current issues. DH
HIST 358 The World of Mekong (3) Historical survey, from BC to the present, of the peoples of the Mekong region, an area covering southwestern China, Thailand, Cambodia, Laos, and southern Vietnam. Open to nonmajors. Pre: upper division standing or consent. DH
HIST 361 U.S. Women’s History (3) History of U.S. women and gender relations. Topics include women’s work in and outside the household, women’s involvement in social movements, changes in sexual norms about gender and sexuality, and shared and divergent experiences of men and women. (Cross-listed as AMST 316 and WS 311) DH
HIST 362 Gender and Sexuality in the Classical World (3) Critical examination of the construction of gender identity and sexuality in ancient Greece and Rome; Junior standing or higher. (Once a year) DH
HIST 371 U.S. Foreign Relations to 1898 (3) Survey of U.S. foreign relations from initial encounters between Europeans and Native Americans through the 1890s. DH
HIST 372 U.S. Foreign Relations From 1898 (3) Survey of U.S. foreign relations from the wars of 1898 to the present. DH
HIST 373 American Thought and Culture (3) Politics, family, philosophy, technology, etc., their interrelationships, sociocultural society. Pre: Cono- nal to end of the 19th century. Pre: 151 or HIST 152 or AMST 150 or AMST 201 or AMST 202 or AMST 211 or AMST 212; or consent. (Cross-listed as AMST 343) DH
HIST 374 American Thought and Culture (3) Continuation of 373: the 20th century. Pre: 151 or 152 or AMST 150 or AMST 201 or AMST 202 or AMST 211 or AMST 212 or consent. (Cross-listed as AMST 344) DH
HIST 378 History of American Business (3) The evolution of business enterprise from colonial times to the present. Emphasis on entrepreneurship, technological change, labor-management relations, government-business relations, and economic thought. Case studies of industrial development. (Cross-listed as MGT 348) DH
HIST 379 American Empire (3) Examines the interplay between an “American culture of empire” and the rise of the U.S. as a superpower. Topics: imperialism and political culture, social movements and international affairs, race, gender and class relations. (Cross-listed as AMST 365) DH
HIST 386 Caribbean History (3) Survey of the history of the Caribbean region from 1500 to the present. A-F only. Pre: sophomore standing or higher, or consent. DH
HIST 391 History of Warfare to 1850 (3) Classical and guerrilla warfare, revolution, and military systems in the era of the Napoleonic wars. DH
HIST 392 History of Warfare Since 1850 (3) Continuation of 391, from 1850 to present. DH
HIST 393 U.S. Military History (3) Survey of development of American military forces from War of Independence to war in Vietnam. DH
HIST 394 History of Science to 1700 (3) Evolution of scientific thought and its cultural context. Antiquity to 1700. DH
HIST 395 History of Science Since 1700 (3) Continuation of 394; science, technology, and society since 1700. DH
HIST 396 (Alpha) Introduction to the Study of History (3) Introduction to the discipline: current trends in Asian, European, American, and Pacific historiography; preparation for senior thesis (406). (B) historiography; (C) education. Pre: Any 300-level HIST course.
HIST 400 Digital History in the Global Village (3) History of the digital age in global perspective connecting people, media, and technology. Faculty and students will use digital media to introduce innovative approaches. Fall only.) DH
HIST 401 History of the Indian Ocean World (3) Explores the transnational history of the Indian Ocean world, especially the region connected by the western monsoon. Topics include trade, trade, religion, colonialism, diaspora, and globalization, including actors like slaves, sailors, women, and merchants. A-F only. Pre: junior or senior standing or consent. (Alt. years) DH
HIST 402 Researching WWII in Southeast Asia (3) Introduces students to the practice of conducting archival research by using materials about World War II in Southeast Asia that have been digitized by various institutions around the world and available on the internet. Junior standing or higher. (Spring only) DH
HIST 403 Vietnam: History and Memory (3) Survey of Vietnamese history with particular attention to the multiple ways that the Vietnamese past has been remembered and represented by different peoples. Open to all students. DH
HIST 406 Modern Philippines (3) Survey of major developments from pre-colonial through Spanish and American colonial periods, the revolution, Japanese occupation, and post-war republic. (Cross-listed as ASIAN 406) DH
HIST 407 Modern Malaysia (3) History of Malay peninsula and northern Borneo, emphasizing developments since 18th century: trade, commerce, foreign migrations, pluralism, nationalism, and Islam. DH
HIST 408 Modern Indonesia (3) Indonesia from 14th century to present. Emphasis on period from late 18th-century Western colonial impact to struggle for independence and problems of nationhood. DH
HIST 409 History of Islamic Southeast Asia (3) History of the coming of Islam to Southeast Asia, the spread of its ideas, and its role in the lives of Muslim communities living in the region. Junior standing or higher. GPA of 2.0 or higher. Pre: any HIST course. (Spring only) DH
HIST 410 Twentieth-Century China (3) An examination of the political, intellectual, economic, cultural, and social transformations of China in the twentieth century. This lecture studies critical events in the making of modern China and explores important issues in the modernization of Chinese life in the twentieth century. DH
HIST 411 Local History of Late Imperial China (3) Chinese government and Chinese society from local and regional perspectives; modes of control and disorder during the 19th century. DH
HIST 412 Local History of 20th-Century China (3) Sociopolitical change and continuity at local and regional levels since 1900, stressing provincial reform, Sino and sub-Hisien politics, warlordism, Kuomintang tutelage, and the Chinese Communist movement and rule. DH
HIST 416 Chinese Intellectual History (3) An interpretive survey of Chinese thought and ideas values in their cultural, social and political settings from classical age to 1600. Pre: upper division standing or consent. DH
HIST 417 Chinese Intellectual History (3) Interpretive survey of Chinese thought from 1600 to the contemporary period, with special emphasis on the themes of cultural collision and change. DH
HIST 418 China’s Foreign Relations (3) Systematic review from traditional times, with emphasis on modern and contemporary history, analyses of foreign policy formulation, objectives, and implementation. Recommended: 312. DH
HIST 419 The Chinese Revolution (3) Origins, development, and meaning of modern revolution in China, 19th century to People’s Republic. Recommended: 311 and 312. DH
HIST 420 People’s Republic of China (3) Salient developments from 1949 to the present. Social revolution and modernization, critically relevant foreign relations. Recommended: 312 or 419. DH
HIST 421 China in World History (3) Interpretative survey of China’s changing position, significance, and function in the evolution of world history as a way to provide a better understanding of its past and present. Junior standing or higher. DH
HIST 422 Tokugawa Japan (3) Japanese history and culture, 1600–1867. Recommended: 321. DH
HIST 423 Okinawa (3) Survey of social, cultural, economic, and political history from earliest times to present. DH
HIST 424 20th-Century Japan (3) Problems of Japan’s political, economic, and social development since institutional consolidation of Meiji state (c.1890). Pre: upper division standing or consent. DH
HIST 425 Women in East Asian History (3) Survey of the changing political, economic, and cultural positions of women in China, Japan, and Korea from ancient times to the present. Pre: one course in Japanese history or consent. DH
HIST 432 Crisis and Conflict in the Middle East (3) In depth study and analysis of major crises and conflicts in the Middle East since World War II: the Arab–Israel Wars, revolutions in the Arab countries, the Turkish experiment with secularism, the Iranian/ Islamic revolution, Afghanistan, and the Gulf War. Recommended: 354 or 355. DH
HIST 433 Medieval Cultures (3) Topical study of cultural and cross-cultural issues in the medi-
History (3) contemporary international law and national legal war ad hoc international criminal tribunals, and international justice in the modern world. Topics include research and reading not bounded by region, time, engagement with a particular historical approach via theory (3) seminar covering one specific approach. Repeatable one time. Pre: graduate standing or consent. (Once a year)

HIST 607 Advanced Topics in Environmental History (3) Introduction to leading themes, methodologies, and topics in world environmental history. Drawing on new and influential scholarship, readings explore the diverse forces that shape humans’ adaptation to and impact on the natural world. Repeatable one time. (Alt. years)

HIST 609 Seminar in World History (3) Analysis, research, and discussion of themes and issues in study of history of humanity for one term. Pre: graduate standing or consent.

HIST 610 Topics in World History (3) Selected themes—feudalism, economic and industrial development, etc.—important in global history. Topics pre-announced. Repeatable one time. Pre: 609.

HIST 611 (Alpha) Advanced Readings in European History (3) Selected topics for advanced reading; (B) ancient; (C) medieval; (D) early modern; (E) modern; (G) intellectual. Repeatable one time. Pre: graduate standing or consent. (Alt. years: spring for (D)); (Alt. fall for (E))

HIST 612 Ethnographic History (3) Critical inquiry into historical representations of the “other” and ways in which modern historians have used culture and other anthropological concepts to write and think about the past.

HIST 613 Introduction to Cultural Studies (3) Graduate seminar designed to introduce history students to the multidisciplinary theories that are appropriate to cultural studies. A-F only. Repeatable one time. Pre: history major or consent.

HIST 614 (Alpha) Research in European History (3) Selected topics for advanced research. (B) ancient; (C) medieval; (D) early modern; (E) modern; (G) intellectual. Repeatable one time. Pre: graduate standing or consent. (Once a year)

HIST 615 (Alpha) Topics in European Colonialism (3) Selected topics for comparative advanced reading and research. (D) early modern; (E) modern. Repeatable one time. Pre: graduate standing or consent. (Alt. years)

HIST 616 Topics in Historical Methods and Theory (3) Seminar covering one specific approach to historical methods or theory. The goal is a deep engagement with a particular historical approach via research and reading not bounded by region, time, or specialty. Repeatable one time. Graduate standing only.

HIST 617 Atrocity Crimes: Law and History (3) Seminar on history of mass atrocity and international justice in the modern world. Topics include post-World War II Allied war crimes prosecution, post-cold war ad hoc international criminal tribunals, and contemporary international law and national legal systems. Repeatable one time. Pre: 350 and graduate standing, or consent.

HIST 621 (Alpha) Russia in East Asia and the Pacific (3) (B) advanced readings; (C) advanced research on Siberia, Russian activities in the Pacific basin, evolving relations with Asian and Pacific powers. Repeatable one time per alpha. Pre: 457 and either 454 or 456; or consent.

HIST 632 (Alpha) Advanced Readings in American History (3) Interpretations and literature of important themes and problems. (B) early America; (C) the Republic to 1877; (D) industrial America; (E) recent America. Repeatable one time per alpha. Pre: appropriate 400-level U.S. history course or consent for (D) and (E); graduate standing or consent for (B) and (C). (Alt. years for (B)) (B) Cross-listed as AMST 610.

HIST 634 (Alpha) Research in American History (3) (B) early America; (C) the Republic to 1877; (D) industrial America; (E) recent America; (F) foreign relations. Repeatable one time. Pre: appropriate 400-level course or consent.

HIST 639 (Alpha) Advanced Topics in American History (3) Seminar in advanced research and readings; (B) social and intellectual; (C) foreign relations; (F) the West; (K) business, labor, and technology. Repeatable one time. Pre: graduate standing and consent. (B) Cross-listed as AMST 640; (F) Cross-listed as AMST 614; (K) Cross-listed as AMST 647.

HIST 650 Seminar: Comparative Asia (3) This reading seminar in history of modern Asia will introduce graduate students to themes, particularly in social, cultural, and intellectual history, which lend themselves to comparison across the region. Repeatable one time. Pre: graduate standing or consent. (Alt. years)

HIST 656 Topics in Southeast Asia (3) Reading and research seminar on themes about the past and present of Southeast Asia in a comparative framework. Pre: graduate standing or consent.

HIST 657 Historiography of Southeast Asia (3) Examination of contested boundaries of Southeast Asia, the various historiographic traditions, the colonial legacy, and the current issues emerging from a dialogue of historians from the “region” and the outside world. Repeatable one time.

HIST 658 Seminar in Modern Southeast Asian History (3) Graduate level reading seminar in modern Southeast Asian history. Repeatable one time. Pre: graduate standing or consent.

HIST 659 The Seas in Southeast Asian History (3) Seminar on the seas in Southeast Asian history. Pre: graduate standing or consent. (Alt. years)

HIST 660 Seminar: Vietnamese History (3) Reading and research seminar on Vietnamese history. Repeatable one time. Pre: graduate standing or consent. (Alt. years)

HIST 661 (Alpha) Seminar in Chinese History (3) Problems and readings in political, social, and cultural history. (B) early; (C) middle; (D) modern. Repeatable one time.

HIST 662 Seminar: Islam and Islamic Civilization (3) Readings on the rise, spread, and development of Islamic cultures and civilizations throughout the world down to modern times. Repeatable one time. Pre: graduate standing or consent. Recommended: 354.

HIST 663 Seminar in South Asian History (3) Graduate-level reading and research seminar on topics in Indian and South Asian history. Repeatable one time.

HIST 665 (Alpha) Seminar in Japanese History (3) Readings on the rise, spread, and development of Islamic cultures and civilizations throughout the world down to modern times. Repeatable one time. Pre: graduate standing or consent. Recommended: 354.

HIST 666 (Alpha) Seminar in Korean History (3) Reading major interpretive works, and research in selected topics. (B) reading; (C) research. Repeatable one time per alpha. Pre: graduate standing or consent.

HIST 675 (Alpha) Seminar in Pacific History (3) Reading and research on major themes and issues. Repeatable one time per alpha. Pre: graduate standing or consent.

HIST 677 Seminar in History of Hawai‘i (3) Reading seminar with short papers required. Covers Kingdom of Hawai‘i and 20th-century Hawai‘i in alternate years. Repeatable one time. (Alt. years: fall)

HIST 678 Hawaiian Historical Research: Documents and Methods (3) Research and writings emphasizing the interpretation of Hawaiian and English language primary sources. Development of source materials, approaches, and methods in Hawaiian history. A-F only. Graduate standing only. Pre: HAW 301 with a B or better, or instructor consent.

HIST 699 Directed Research (V) Individual research topics. (1) Advanced research; (3) Advanced research; (4) European; (5) English; (6) Chinese; (7) Russian; (8) Hawaiian; (9) South Asian; (10) Southeast Asian; (11) Korean. Repeatable one time. Pre: consent.

HIST 700 Thesis Research (V) Repeatable unlimited times.

HIST 702 Institutional History of Korea (3) Major political, economic, and social institutions. Repeatable one time. Pre: graduate standing or consent. (Alt. years: spring)


HIST 790 Teaching History (1) HIST 151-152 faculty supervisors mentor their Teaching Assistants who teach the discussion labs. Course addresses issues of teaching strategy, grading and historical content. Enrollment limited to current Teaching Assistants in the World History Program. Repeatable seven times. A-F only. Pre: History Teaching Assistants assigned to 151-152.

HIST 800 Dissertation Research (V) Repeatable unlimited times. Pre: consent.

Honors (HON)
Honors Programs
These courses are limited to students in the Honors Programs.

HON 101 Introduction to Research and Creative Work at Manoa (3) Combines lectures by instructors and faculty guests with workshops and hands-on experience in small group projects, including bibliographic searches, laboratory science, social surveys and interviews. A significant portion is dedicated to writing instruction. Honors Program students only. A-F only.

HON 120 Mathematical Modes of Thinking (3) Mathematics as both a language and a thought process expressed in that language. Historical and contemporary relations to culture.

HON 190 Honors Tutorial (1) Supplements a 100 or 200 lecture course or standard lab time with discussion section, instructor-intensive lab time or directed research. Limited enrollment. Repeatable three times.

HON 291 (Alpha) Sophomore Seminar (3) Special inquiry-based study of multi-disciplinary topics in particular historical, cultural, geographical, environmental, or other contexts. Emphasis on primary sources and/or fieldwork. (B) biological science; (H) humanities; (P) physical science; (R) arts; (S) social science; (T) literature. Repeatable one time. A-F only. Pre: 101 or departmental approval. DB for (B); DH for (H); DP for (P); DA for (R); DS for (S); DL for (T)

HON 301 Public Policy-Making (3) Students develop understanding of theory, practice, and ethical issues of public policy-making. Combines lecture/discussion and fieldtrips. Students develop policy analysis and strategic plans that identify issues, interests, and methods of influence. Repeatable one time. A-F only. Pre: 101 or 291, or departmental approval. (Cross-listed as POLS 386)
HON 303 Civic Engagement, Volunteerism & Community Service (3) Seminar on history and theory and practice of volunteerism in the U.S. Involves comparative study of volunteerism, individual research projects on volunteerism, and conduct of field service activities together with written reports. Repeatable one time. A-F only. Pre: 101 or 251, or departmental approval.

HON 380 Peer Mentoring (3) Students develop understanding of dynamics of leadership skills within the contexts of paired to large groups. Significant portion is dedicated to writing instruction. Multi-disciplinary topics vary each semester. Honors Program students only. Repeatable one time. A-F only. Pre: 101 or departmental approval.

HON 399 Internship (V) Field placement integrated with academic study of institutions and/or organizations. Repeatable 3 times or up to 12 credits. Pre: departmental approval.

HON 491 Junior Seminar (3) Project-based experiential learning involving community-based research or creative work. Focus on project design, practical skills, and teamwork. Significant portion is dedicated to writing instruction. Multi-disciplinary topics vary each semester. Honors Program students only. Repeatable one time. A-F only.

HON 492 Honors Colloquium (3) Weekly meetings for discussion of enduring issues and problems of an interdisciplinary nature. Limited to candidates for Honors degree. CR/NC only.

HON 495 Introduction to Research (3) Library research skills; scholarship of research and creative work; methodological and ethical issues; development of individual proposal or prospectus for Senior Honors Project. Limited to candidates for the Honors degree. Repeatable one time. CR/NC only.

HON 496 Senior Honors Project (3) Original research, creative work, performance or other form of scholarly project appropriate to a major and supervised by a faculty member. Limited to candidates for Honors degree. Repeatable one time for each major. A-F only. Pre: 495 or consent.

HON 499 Directed Reading/Research (V) Directed reading and/or research. Repeatable 3 times or up to 12 credits.

Selected Studies students also have the option of taking A-section courses from the following list when they are offered by departments:

- ACC 201A Introduction to Financial Accounting
- AMST 150A America and the World FGB
- AMST 202A Diversity in American Life DH
- AMST 220A Introduction to Indigenous Studies DH
- ANTH 151A Emerging Humanity FGA
- ANTH 152A Culture and Humanity FGB
- ART 101A Introduction to Visual Arts DA
- ART 175A Survey of Global Art I FGA
- ASAN 312A Contemporary Asian Civilizations DS
- ASTR 110A Survey of Astronomy DP
- ASTR 120A Astronomical Origins DP
- BOT 101A General Botany DB
- BOT 105A Ethnobotany FGC
- CHEM 181A Honors General Chemistry DP
- COMG 151A Personal and Public Speech DA
- COMG 251A Principles of Effective Public Speaking DA
- ECON 130A Principles of Microeconomics DS
- ECON 131A Principles of Macroeconomics DS
- ECON 300A Intermediate Economics: Macroeconomics Analysis DS
- ECON 301A Intermediate Economics: Price Theory DS
- ECON 317A The Japanese Economy DS
- ECON 362A Trade Policy and Globalization DS
- ENG 100A Composition I FW
- ENG 270A Introduction to Literature: Literary History DL
- ENG 271A Introduction to Literature: Genre DL
- ENG 272A Introduction to Literature: Culture and Literature DL
- ENG 273A Introduction to Literature: Creative Writing and Literature DL
- GG 101A Introduction to Geology DP
- HWST 107A Hawai‘i: Center of the Pacific DH
- HIST 161A World Cultures in Perspective FGA
- HIST 162A World Cultures in Perspective FGB
- ICS 101A Tools for the Info Age
- ICS 111A Introduction to Computer Science
- ICS 211A Introduction to Computer Science II
- MATH 251A Accelerated Calculus I FS
- MATH 252A Accelerated Calculus II
- MATH 253A Accelerated Calculus III
- MICR 140A Microbiology Laboratory DY
- MUS 107A Music in World Cultures FGC
- PHIL 100A Introduction to Philosophy: Survey of Problems DH
- PHIL 101A Introduction to Philosophy: Morals and Society DH
- PHIL 102A Introduction to Philosophy: Asian Traditions DH
- PHIL 110A Introduction to Deductive Logic FS
- PHYS 170A General Physics I DP
- PHYS 272A General Physics II DP
- POLS 110A Introduction to Political Science DS
- POLS 355A Political Philosophy and Theory DS
- PSY 371A Abnormal Psychology DS
- REL 151A Religion and the Meaning of Existence DH
- REL 210A Understanding Christianity DH
- SOC 100A Introduction to Sociology DS
- SOC 150A Street Science: Evaluating and Applying Evidence in Daily Life
- SOC 300A Principles of Sociology Inquiry DS
- SPAN 201A Intermediate Spanish HSL
- SPAN 202A Intermediate Spanish HSL
- TIM 102A Food and World Cultures FGB

**Human Resources Management (HRM)**

**Shidler College of Business**

HRM 200 Career Development (1)

HRM 351 Human Resource Management (3)

Survey of the field covering recruitment, selection, training, appraisals, grievances handling, communications, discipline, safety, compensation, and benefits.

HRM 353 Leadership and Group Dynamics (3)

Develop understanding of theory and research on managerial, entrepreneurial leadership and creativity in organizations. Topics include leadership, decision making, motivation, personality, and rewards within group settings.

HRM 354 Organizational Change and Effectiveness (3) Identify and evaluate methods to promote an effective change transition through efficient integration of corporate goals with the organizational culture.

HRM 361 Labor Problems (3) Problems and economics of labor; history, structure, government, activities of trade unions. DS

HRM 399 Directed Reading and Research (V) Reading and research in a special area within the major field under direction of faculty member(s).

Project must include statement of objectives, outline of activities planned, results expected, and how they are to be reported and evaluated. Must be approved in advance by the department chair and faculty advisor.

HRM 453 Personnel Compensation (3) Selected topics. Emphasis on trends, recent issues, job evaluation, incentive systems, salary administration, executive compensation, profit-sharing, benefit programs, retirement plans. Pre: 351.

HRM 455 The Staffing Process (3) Contemporary practices and trends in personnel planning for a competent workforce; legal constraints, recruitment and selection, differential placement, training, career programming. Pre: 351.

HRM 463 Negotiation and Workplace Dispute Resolution (3) Theory and practice in negotiating; design and operation of different kinds of workplace dispute resolution (such as mediation, arbitration, and various alternatives); features exercises on bargaining and negotiation and advocacy and decision skills. (Spring only).


HRM 467 Labor Management Relations (3) Review and analysis of basic factors that distinguish employment relations; examination of the development of recent legislation and programs at federal, state, and municipal levels. Specific consideration given to current problems on the mainland and Hawai‘i. Pre: consent.

HRM 468 Training and Development (3) Analysis of the current concepts and practices in the design, delivery, and assessment of training. A-F only.

HRM 469 Seminar in HRM (3) In-depth analysis of selected current practices and trends in HRM. May be repeated in a different topic. Pre: consent.

HRM 671 Human Resource Management (3) Analysis and critical evaluation of basic issues, policies, and trends in personnel administration. HRM majors only. Graduate students only. A-F only.

HRM 672 Training and Development (3) Covers issues in design, delivery, and assessment of training, theoretical background of training and development process, types of training process, cross cultural and other types of diversity training and development of training modules. HRM majors only. Graduate students only. A-F only.

HRM 673 Advanced Organizational Behavior (3) Organizational development (OD) and major concepts in organizational behavior. MHRM majors only. A-F only.

HRM 674 Finance for Human Resource Management (3) Intends to give HR professionals a basic overview of the vocabulary and concepts of financial decision-making. Topics include: understanding financial information, budgeting, the finance of retirement and employee benefit and business valuation. MHRM majors only. A-F only.

HRM 675 Compensation (3) Survey of compensation methods and procedures including job evaluation, incentive systems, salary administration, fringe benefits, appropriate legislation, policies and strategy
issues of compensation systems. HRM majors only. Graduate students only. A-F only.

HRM 676 The Staffing Process (3) Recruiting and selection to optimize organizations including job design, job analysis, recruitment and selection methods, such as types of interviews and assessment centers, within legislative environment. HRM majors only. Graduate students only. A-F only.

HRM 677 Negotiations and Labor Relations (3) Theory and practice of negotiation. Exploration of appropriate strategies, tactics, and communication techniques. Study of dyadic multi-party, cross-cultural, and assisted negotiations. MHRM majors only. A-F only.

HRM 678 International Human Resource (3) Exploring global trends in human resources with focus on the Asia Pacific region. HRM majors only. Graduate students only. A-F only.

HRM 679 Human Resource Management-Topics (3) In-depth analysis of selected current practices and trends in human resources. Repeatable four times with change in topics. MHRM majors only. A-F only.

HRM 680 Human Resource Management Capstone (3) The final course in the MHRM curriculum. It provides students opportunity to integrate and apply previous course content to their professional organization offering a value-added opportunity to enhance organizational performance. MHRM majors only. A-F only.

HRM 688 Human Resources Leadership in Healthcare Organizations (3) Build on previous leadership and management courses, focus on development of individual leadership skills emphasizing ethical and critical decision making, effective working relationships, and a systems-perspective relevant to healthcare organizations. A-F only. Pre: BUS 626. (Alt. years)

Ilokano (ILO) College of Languages, Linguistics and Literature

ILO 101 Beginning Ilokano (4) Listening, speaking, reading, writing, Structural points introduced inductively. Meets four hours weekly. HSL

ILO 102 Beginning Ilokano (4) Continuation of 101. Pre: 101 or consent. HSL

ILO 107 Ilokano for Health Sciences (3) Development of listening, speaking, reading, writing and other communication skills designed specifically for Nursing, Dentistry, Dental Hygiene, Public Health and Social Work students. Culture integrated with language study.

ILO 201 Intermediate Ilokano (4) Continuation of 102. Meets four hours weekly; three of four hours devoted to drill and practice. Pre: 102 or consent. HSL

ILO 202 Intermediate Ilokano (4) Continuation of 201. Pre: 201 or consent. HSL


ILO 302 Third-Level Ilokano (3) Continuation of 301. Pre: 301 or exam, or consent.

ILO 315 Ilokano Aural Comprehension (3) Training in listening comprehension of different authentic and simulated materials presented in documentary, soap opera, radio and television news and other broadcasts, formal lectures, plays, natural conversations, song, and student-created sitcoms and dramas. Pre: 202 or consent.

ILO 331 Contemporary Ilokano Literature (3) Conducted in Ilokano, this course explores the literary landscape of Ilokano literature from the perspective of Ilokano writers based in the Philippines as well as those outside of the country. Pre: 301 or consent.


ILO 402 Fourth-Level Ilokano (3) Continuation of 401. Pre: 401 or exam, or consent.

ILO 424 Introduction to Ilokano for Interpreters (3) Techniques for interpreting Ilokano into English and vice versa. A-F only. Pre: 302 or consent.

ILO 425 Ilokano Interpretation Field Practicum (3) Provide extensive training in consecutive, simultaneous, sight and telephonic interpreting. It requires observation and study of interpretation strategies and techniques in relevant situations. Pre: 301 or consent. DH

ILO 451 Structure of Ilokano (3) Introduction to phonology, morphology, and syntax. Pre: 202 or consent. DH

ILO 486 Ilokano for the Mass Media (3) Ilokano as the medium for print journalism, for radio show programming, and for television production. Pre: 302 or consent. (Fall only)

Indo-Pacific Languages (IP) College of Languages, Linguistics and Literature

ILO 402 Fourth-Level Ilokano (3) Continuation of 401. Pre: 401 or exam, or consent.

ILO 424 Introduction to Ilokano for Interpreters (3) Techniques for interpreting Ilokano into English and vice versa. A-F only. Pre: 302 or consent.

ILO 425 Ilokano Interpretation Field Practicum (3) Provide extensive training in consecutive, simultaneous, sight and telephonic interpreting. It requires observation and study of interpretation strategies and techniques in relevant situations. Pre: 301 or consent. DH

ILO 451 Structure of Ilokano (3) Introduction to phonology, morphology, and syntax. Pre: 202 or consent. DH

ILO 486 Ilokano for the Mass Media (3) Ilokano as the medium for print journalism, for radio show programming, and for television production. Pre: 302 or consent. (Fall only)

IPO 101 Directed Elementary Language Study (4) Directed study of a South Asian, Southeast Asian, or Pacific language not regularly listed by the department. Pre: consent.

IPO 102 Directed Elementary Language Study (4) Continuation of 101. Pre: consent.

IPO 202 Directed Intermediate Language Study (4) Continuation of 201. Pre: consent.

IPO 261 Topics in Indo-Pacific Language/Culture (3) Study of a literature or culture of the Indo-Pacific area through readings in various fields in English. Repeatable up to six credit hours. Pre: consent.

IPO 273 (Alpha) Introduction to Indo-Pacific Language and Culture (3) Introduction in English to language(s) and culture(s) of Indo-Pacific countries or region. (B) Indian; (C) Southeast Asian; (D) Poly- nesian; (E) Philippine. Pre: 101 and 102 courses in relevant language or culture. DH

IPO 299 Intermediate Language Study (V) Intermediate study of a South Asian, Southeast Asian, or Pacific culture. Contact hours and credits determined by student interests and faculty resources. Repeatable up to eight credit hours. Pre: consent.

IPO 302 Directed Third-Level Language Study (3) Continuation of 301. Pre: Consent.

IPO 302 Directed Third-Level Language Study (3) Continuation of 301. Pre: Consent.

IPO 360 Filipino Food, Music, and Rituals: Art and Culture Studies (3) Study and analysis of the art and culture of Filipino food, music, and ritualistic history, forms, development, social influence, and impact. Sophomore standing or consent. DS

IPO 361 Southeast Asian Literature in Translation (3) Survey in English of traditional and modern literatures of Southeast Asia. (Cross-listed as ASAN 361) DL

IPO 362 Philippine Drama: History, Art, Culture (3) Historical survey from precolonial to contemporary periods. Studies forms, conventions, and literature within the social, political, and cultural context of the times as reflected in the history of Philippine drama. Explores plays in the diaspora. A-F only. Pre: IPO 101 or consent. (Fall only) DL

IPO 363 Philippine Contemporary Literature in English (3) Critical survey of 20th-century Philippine literature written in English; cultural values. Pre: one ENG DL course or consent. (Cross-listed as ENG 375) DL

IPO 364 Philippine Popular Culture (3) Appreciation, re-examination, and analysis of Philippine popular culture produced in the Philippines and in the diaspora; an evaluation of such forms using critical hermeneutic frames. A-F only. Pre: sophomore standing or consent. DH

IPO 365 South Asian Literature in Translation (3) Survey of traditional and modern literatures of South Asia; literature written in English. DL

IPO 366 South Asian Literature in Translation (3) Survey of traditional and modern literatures of South Asia; a vernacular literature to be determined by faculty resources and student interest. DL

IPO 367 Persian Theater and Culture (3) Study of Persian and Iranian theater and culture with an overview of history from 2500 B.C. to the contemporary era. Pre: THEA 101 or consent.

IPO 368 Introduction to South/Southeast Asian Film, History, Theory and Appreciation (3) Study and analysis of South/Southeast Asian filmic forms, development, theoretical framework and relationship to cultural, social, philosophical and aesthetic context. (B) Filipino; (C) Iranian. A-F only. Pre: one of ENG 270-272, or consent. DH

IPO 369E Study Abroad: Vietnam (3) VC 373 Vedica Hindu Mythology (3) Study of major Hindu myths of the Vedic Sanskrit literature within the perspective of ancient Indian civilization. Literary sources will be tapped for understanding creation, cosmogony and celestial, atmospheric and terrestrial deities. A-F only. Pre: ANTH 200, ASAN 202, HIST 151, LEEA 122, or PHIL 102; or consent. (Fall only)

IPO 374 Classical Hindu Mythology (3) Study of major myths of Epic Sanskrit literature, primarily with focus of the Ramayana and Mahabharata. Literary sources will be tapped for appreciating myths and epics, especially with reference to dharma, karma, ways of life. Pre: ANTH 200, 202, HIST 151, LEEA 122, or PHIL 102; or consent. (Spring only)

IPO 376 Philippine Diasporic Literatures (3) Appreciation, reexamination, and analysis of Philippine literature of exile; a reevaluation of Philippine writing from the diaspora. Sophomore standing or higher or consent. DL

IPO 377 Critical Discourses in IPLL Studies: Philippines (3) Revaluation and analysis of critical discourses in Philippine languages and literatures and an examination of alternative perspectives to the prevailing studies on Philippine culture: an appreciation of emerging knowledge on the Philippines. Pre: Sophomore standing or higher or consent.

IPO 389 Theories in Ilokano Studies (3) Examines the various theories employed in the study of Ilokano society, language and culture from a variety of historial periods. A-F only. Junior standing or higher, or consent. (Alt. years: spring)

IPO 395 Polynesian Folklore in Translation (3) Traditional Polynesian genres (legends, myths, folktales, fables, proverbs, songs, riddles, jokes) examined in translation and culturally and structurally interpreted. Pre: one of ENG 270-272. DL

IPO 396 Philippine Literature and Folklore in Translation (3) Philippine folk literature translated into English; epics, fables, proverbs, songs, riddles, jokes examined in translation and culturally and structurally interpreted. Pre: one of ENG DL course or consent. (Cross-listed as ENG 376) DL

IPO 399 Third-Level Language Study (V) Third-level study of a South Asian, Southeast Asian, or Pacific language. Contact hours and credits determined by student interests and faculty resources. Repeatable up to six credits. Pre: at least 6 credits of intermediate study of the same language.
IP 401 Directed Fourth-Level Language Study (3) Continuation of 302. Pre: consent.

IP 402 Directed Fourth-Level Language Study (3) Continuation of 401.

IP 411 Ilokano Literature in Translation (3) Overview of Ilokano literature from the early writings to the major works of contemporary writers. A-F only. Pre: ILO 201 or consent. DL

IP 427 (Alpha) Topics in Samoan Literature (3) (B) Writings of Albert Wendt; (C) Samoan women writers. Pre: SAM 227 or one of ENG 270-272; or consent for (B). Pre: SAM 227 or one of ENG 270-273 or WS 245; or consent for (C). DL

IP 431 Rizal’s Literary Works in Translation (3) Interpretation and analyses of Rizal’s novels Noli and Fili as they relate to the social, political, and historical context of the Spanish regime in the Philippines. Pre: one DL course, or consent. DL

IP 432 The Writings of Carlos Bulosan (3) Intensive study of the major writings of Carlos Bulosan; his literary and cultural milieu with thematic concentration on aesthetics and the issues of diasporic experiences (e.g., immigration, assimilation, nation, etc.) and transnationalism. Pre: 361 or 363 or 396 or 431 or any ENG DL. DL

IP 465 (Alpha) Hawaiian and Indo-Pacific Teaching Practicum (3) An experienced-based introduction open to students who have taken 301. Pre: 402-level of the language practicum or consent; (B) CAM 402 or IND 402 or THAI 402 (or concurrent) and consent of instructor or equivalent language skills.

IP 470 Folklore (3) Theory and method of comparative and analytical folklore study, with special applications to Pacific traditions. Pre: ANTH 200.

IP 499 Directed Studies (V) Study of a Pacific, South Asian, or Southeast Asian language through vernacular readings in various academic fields. Repeatable. Pre: third-level language and consent.

IP 699 Directed Research (V) Repeatable unlimited times. Pre: consent.

IND 302 Third-Level Indonesian (3) Continuation of 301. Pre: 301.

IND 305 Third Level Indonesian (3) Online course consists of modular, thematic, proficiency-based units exploring the language of the contemporary Indonesian media with an emphasis on reading, writing, and listening comprehension. Not open to students who have taken IND 301. Pre: 202 or 304, or consent.

IND 306 Third Level Indonesian (2) Online course consists of modular, thematic, proficiency-based units exploring colloquial and formal Indonesian with a strong emphasis on listening and writing comprehension. Not open to students who have taken IND 301. Pre: 301 or 305 (or equivalent), or consent. (Spring only)

IND 307 Third Level Indonesian Conversation (2) Topic-based course aimed to enhance student’s listening and speaking skills in the Indonesian language. Not open to students who have taken 301. Pre: 202 or 204, or consent. Co-requisite: 305. (Fall only)

IND 308 Third Level Indonesian Conversation (2) Topic-based course aimed at enhancing students’ listening and speaking skills in the Indonesian language. Not open to students who have taken 301. Pre: 301 or 307, or consent. Co-requisite: 306. (Spring only)

IND 401 Fourth-Level Indonesian (3) Continuation of 302. Conducted in Indonesian. Meets three hours a week. Longer periods of oral and written practice in various settings. Pre: 302 or 308, or consent.

IND 402 Fourth-Level Indonesian (3) Continuation of 401. Pre: 401 or 405.

IND 405 Fourth Level Indonesian (2) Online course consists of modular, thematic, proficiency-based units exploring the language of the contemporary Indonesian media with an emphasis on reading, writing, and listening comprehension. Pre: 302, 306, or consent. (Fall only)

IND 407 Fourth Level Indonesian Conversation (1) Topic-based course aimed to enhance students’ listening and speaking skills in the Indonesian language. Pre: 302, 306, or consent. Co-requisite: 405. (Fall only)

IND 452 Structure of Indonesian (3) Introduction to grammar; some sociolinguistic background. Pre: 302 or equivalent, or consent. DH

IND 454 History of Indonesian (3) Social and linguistic development of Indonesian from roots in earlier Malay to contemporary form and function. Pre: 202 and 407 or consent.

IND 461 Modern Indonesian Literature (3) Selected readings, 1900 to present. Discussion and composition. Pre: 402 or consent. DL

ICS 101 (Alpha) Tools for the Information Age (4) Fundamentals of computer technology, application software for problem solving, computer technology trends and impact on individuals and society. (B) general; (T) education. (T) intended for students interested in careers in education.

ICS 110 (Alpha) Introduction to Computer Programming (3) Basic concepts needed to write computer programs. Simple program design and implementation using a specific programming language: (C) C; (P) Pascal; (P) Python. Each alpha repeatable unlimited times, but credit earned one time only.

ICS 111 Introduction to Computer Science I (4) Overview of computer science, writing programs. Pre: Recommended: computer experience.

ICS 141 Discrete Mathematics for Computer Science I (3) Logic, sets, functions, matrices, algorithmic concepts, mathematical reasoning, recursion, counting techniques, probability theory. FS

ICS 210 Information Systems in Society (3) Lecture/discussion critically explores sociopolitical dimensions of Information and Communication Technology (ICT), and the information professions. A-F only. Pre: departmental approval. (Once a year)

ICS 211 Introduction to Computer Science II (4) (3 Lex, 1 3-hr. Lab) Algorithms and their complexity, introduction to software engineering, data structures, searching and sorting algorithms, numerical errors, pre and grade of “B” or higher in 111 or consent. All students wishing to enroll in ICS courses above 211 except ICS 241 must meet the prerequisite grade requirement of “B” or higher in ICS 111 and 211 prior to registering for the course.

ICS 212 Program Structure (3) Program organization paradigms, program instruments, implementation of a module from specifications, the C and C++ programming languages. Pre: 211 or consent.

ICS 215 Introduction to Scripting (3) Introduction to scripting languages, scripting in operating systems, web pages, server-side application integration, regular expressions, event handling, input validation, selection, repetition, parameter passing, Perl, Java’s script, and PHP. A-F only. Pre: 211 (or concurrent), or consent. (Once a year)

ICS 241 Discrete Mathematics for Computer Science II (3) Program correctness, recurrence relations and their solutions, divide and conquer relations, relations and their properties, trees and their applications, Boolean algebra, introduction to formal languages and automata theory. Pre: 141 or consent. FS

ICS 290 Computer Science Careers: An Exploration of the Specialties of Computer Science (1) Exploration of the specialties of computer science. Meets every two weeks for 2.5 hours to explore specific areas in computer science. CR/NC only. (Once a year)

ICS 311 Algorithms (4) (4 1-hr. Lec) Design and correctness of algorithms, including divide-and-conquer, greedy and dynamic programming methods. Complexity analyses using recurrence relations, probabilistic methods, and NP-completeness. Applications to order statistics, disjoint sets, B-trees and balanced trees, graphs, network flows, and string matching. Pre: 211 and 241, or consent.

ICS 312 Machine-Level and Systems Programming (3) Machine organization, machine instructions, addressing modes, assembler language, subroutine linkage, linking to higher-level languages, interface to operating systems, introduction to assemblers, loaders and compilers. Pre: 212 (or concurrent), or consent.

ICS 313 Programming Language Theory (3) Syntax, semantics, control structures, variable binding and scopes, data and control abstractions. Programming in functional (LISP) and logic (Prolog) programming styles. Pre: 212 and 241, or consent.

ICS 314 Software Engineering I (3) System specification, modeling and analysis, prototyping, hierarchal design, program design methods, cost estimation, project management, computer-aided software design. Team-based software-design project. Pre: 211 or consent.

ICS 315 Web Design and Management (3) Web design principles, XML and HTML, tables, forms, and frames, multimedia objects, security, scripting for web applications, web servers, commercial aspects, new technology, A-F only. Pre: 215 or consent. (Once a year)

ICS 321 Data Storage and Retrieval (3) Data storage devices, timing and capacity, programming for files, hashed and indexed files, introduction to relational database systems. Pre: 211 or consent.

ICS 331 Logic Design and Microprocessors (4) (1 3-hr. Lab) Basic machine architecture, microprocessors, bus organization, circuit elements, logic circuit analysis and design, microcomputer system design. Pre: 212 and 241, or consent.

ICS 332 Operating Systems (3) Operating system concepts and structure, processes and threads, CPU
scheduling, memory management, scheduling, file systems, inter-process communication, virtualization, popular operating systems. A-F only. Pre: 211.

ICS 351 Network Design and Management (3) Overview of the internet and its capabilities; introduction to HTTP, TCP/IP, ethernet, and wireless 802.11; routers, switches, and NAT; network and wireless security; practical experience in designing and implementing networks. Pre: 141 and 211, or consent. (Fall only)


ICS 361 Introduction to Artificial Intelligence Programming (3) Introduction to the theory of Artificial Intelligence and the practical application of AI techniques in Functional (Common LISP and/or Scheme) and Procedural (Common AI) languages. Includes courses on ethical issues and instructional techniques for students assisting a laboratory section of ICS 101. The class uses multiple significant writing and oral presentation activities to help students learn course content. Pre: 101(Alpha) and consent.

ICS 414 Software Engineering II (3) Continuation of 314. Project management, quality, and productivity control, testing and validation, team management, team-oriented software implementation projects. Pre: 314.

ICS 415 Introduction to Programming for the Web (3) Introduction to emerging technologies for construction of World Wide Web (WWW)-based software. Covers programming and scripting languages used for the creation of WWW sites and client-server programming. Students will complete a medium-sized software project that uses languages and concepts discussed in class. Pre: 311 or consent. (Fall only)

ICS 419 The Social Psychology and Philosophy of Systems Design (3) Scientific, psychological and philosophical bases of systems design, including a survey of human-factors and ergonomic standards; the nature of innovation and creativity as it relates to systems design; introduction to senior design topics. Pre: two ICS 300-level courses with grade of B or better, or consent. (Once a year)

ICS 421 Database Systems (3) Principles of database systems, data modeling, relational models, database design, query languages, query optimization, concurrency control data security. Pre: 311 and 321, or consent.

ICS 422 Data Processing (3) Role of data processing in organizations, programming practices, ethics, sequential and indexed file processing, report writing, online transaction processing. Pre: 321 or consent.

ICS 423 Computer Security (3) Legal, ethical and technology issues in computer access, confidentiality, authentication, and intellectual property. Pre: both 311 and 321, or consent.

ICS 424 Application Frameworks (3) Experience producing applications with at least two different application frameworks. A-F only. Pre: 212, 311, and 313; or consent.

ICS 425 Computer Security and Ethics (3) Theoretical results, security policy, encryption, key management, digital signatures, certificates, passwords. Ethics: privacy, computer crime, professional ethics. Ethics of the computer revolution on society. A-F only. Pre: at least two ICS 300-level courses or consent. (Once a year)

ICS 426 Computer Security System (3) Information flow, confinement, information assurance, malicious programs, vulnerability analysis, network security, writing secure programs. A-F only. Pre: 351 or 451, or consent. (Once a year)

ICS 431 Computer Architecture (3) Memory management, control flow, interrupt mechanisms, multiprocessor systems, special-purpose devices. Pre: 351 or EE 361/361L.

ICS 432 Concurrent and High-Performance Programming (3) Introduction to concurrent and high performance programming. Multi-threading in C and Java for shared-memory programming. Distributed memory programming with Java. Pre: Introduction to cluster computing. A-F only. Pre: 212 or consent. (Once a year)

ICS 435 Machine Learning Fundamentals (3) Introduction to machine learning concepts with a focus on relevant ideas from computational neuroscience. Information processing and learning in the nervous system, machine learning, unsupervised and supervised learning. Basics of statistical learning theory. Pre: 311 or consent. Recommended: MATH 307. (Once a year)

ICS 441 Theory of Computation (3) Grammars, sequential machines, equivalence, minimalization, analysis and synthesis, regular expressions, computational unsolvability, Gödel’s theorem, Turing machines. Pre: 311 or consent.

ICS 442 Analytical Models and Methods (3) Applications of analytical methods to computer science with emphasis on discrete mathematics, numerical computation, algebraic models, operations research. Pre: 311 or consent.

ICS 443 Parallel Algorithms (3) Introduction to parallel models of computation and analysis of parallel algorithms. Pre: 311. (Fall only)

ICS 451 Data Networks (3) Network analysis, architecture, digital signal analysis and design; circuit switching, packet switching, packet broadcasting; protocols and standards; local area networks; satellite networks; ALOHA channels; examples. Pre: 212 and 311, or consent.

ICS 452 Software Design for Robotics (3) Sensors, actuators, signal processing, paradigms of robotic software design, machine learning, introduction to computer vision, and robot-to-human interaction. A-F only. Pre: two ICS 300-level courses or consent. Recommended: 312 and 313. (Spring only)


ICS 461 Artificial Intelligence I (3) Survey of artificial intelligence, natural language processing, vision and robotics, expert systems. Emphasis on fundamental concepts: search, planning, and problem solving, logic, knowledge representation. Pre: 311 or consent.

ICS 462 Artificial Intelligence for Games (3) Techniques to stimulate intelligence in video games: movement, pathfinding with A* search, decision-making, action selection, collision resolution, pathfinding with A* search, decision-making, action selection, collision resolution. Pre: at least two ICS 300-level courses or consent. (Fall only)

ICS 465 Introduction to Hypermedia (3) Basic issues of interactive access to information in various formats on computers. Available hardware and software: editing, integration, programming, implementation of a sample interactive system. Pre: 311.

ICS 466 Design for Mobile Devices (3) Lecture introductions to design issues, programming languages, operating systems and mark-up languages for internet-enabled mobile devices, such as cell phones and PDAs, A-F or Audit. Pre: 314 or consent. (Spring only)

ICS 469 Cognitive Science (3) Introduces basic concepts, central problems, and methods from cognitive science. Identifies contributions from disciplines such as cognitive psychology, linguistics, artificial intelligence, philosophy, and neuroscience. Pre: two ICS 300-level courses or consent.

ICS 471 Probability, Statistics, and Queuing (3) A hands-on introduction to probability, statistical inference, regression, Markov chains, queuing theory. Use of an interactive statistical environment such as R. Pre: 241 and 311, or consent.

ICS 475 Introduction to Bioinformatics: Sequences and Genomes Analysis (3) Introduction to bioinformatics to computer science students focusing on how computer sciences techniques can be used for the storage and organization of biological sequences (DNA, RNA and proteins). Pre: 300-level course or consent. (Once a year)

ICS 476 Bioinformatics Algorithms and Tool Development (3) Study of commonly used bioinformatics algorithms, with an emphasis on string, tree, and graph algorithms. Presentation of probabilistic and clustering methods. Implementation of the studied algorithms and data mining applications. Pre: 311 or consent. (Once a year)

ICS 481 Introduction to Computer Graphics (3) Fundamentals of computer graphics including graphics hardware, representation, manipulation, and display of two- and three-dimensional objects, use of commercial software. Pre: 311 and either MATH 216, MATH 242, or MATH 252A; or consent.

ICS 483 Computer Vision (3) Introductory course in computer vision. Topics include image formation, image processing and filtering, edge detection, texture analysis and synthesis, binocular stereo, segmentation, tracking, object recognition and applications. A-F only. Pre: 212 and 311, or consent. (Spring only)

ICS 484 Data Visualization (3) Introduction to data visualization through practical techniques for turning data into images to produce insight. Topics include: information visualization, geospatial visualization, scientific visualization, social network visualization, and medical visualization. Junior standing or higher. Pre: two ICS 300-level courses. (Spring only)

ICS 485 Video Game Design and Development (3) Students will team design, build, and demonstrate video games or related applications in entertainment environments and applications. Topics will include emerging computer science techniques relevant to the development of these types of environments. Junior standing or higher. Pre: two ICS 300-level courses. (Spring only)

ICS 491 Special Topics (3) Reflects special interests of faculty. Oriented toward juniors and seniors. Repeatable one time for BS/CS students. Pre: at least two 300-level ICS classes or consent.

ICS 495 Special Topics in Security (3) Special topics in security oriented toward juniors and seniors. Repeatable unlimited times. Pre: at least two 300-level ICS courses or consent. (Alt. years: fall)

ICS 499 Computer Project (V) Individual or small-group projects in systems software, application under faculty supervision. Pre: consent.

ICS 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.

ICS 606 Intelligent Autonomous Agents (3) Theoreti- cal and practical implementation of autonomous agent systems, including common applications of both software and hardware (robotic) agents. In-depth practical experience with autonomous agents through laboratory assignments and projects. Pre: 313 or EE 467 or (equivalent), graduate standing or consent. (Once a year) (Cross-listed as EE 606)

ICS 611 Compiler Theory and Construction (3) Design and implementation of compilers, syntactic and semantic descriptions of programming lan- guages, algorithms for syntax analysis and object code generation. Pre: 312 or consent.
ICS 612 Theory of Operating Systems (3) Advanced study in operating systems theory and design with emphasis on case studies and distributed systems.

ICS 613 Advanced Software Engineering (3) Fundamental principles and engineering procedures, including planning, estimation, design, testing, process definition and improvement, and software quality assurance. Measurement techniques are used to support empirically-driven software process improvement throughout the course. Prereq: 414 or consent.

ICS 614 Medical Informatics I (3) Introduction to the field of medical informatics, which is found at the intersection of clinical science, public health, information science, computer technology and communication technology. Concentration on current issues. Prereq: consent.

ICS 616 Information Architecture and Web Design (3) User-centered design of websites; survey Information Architecture (IA) systems (organization, navigation, labeling, searching); gain experience in methodologies for creating IA, tools for IA, web standards and usability tests. ICS and LIS majors only. A-F only. Prerequisite standing in ICS or LIS or related field or consent. (Once a year)

ICS 621 Analysis of Algorithms (3) Analysis and design of algorithms: modeling, comparison, measures, applications. Prereq: 311.

ICS 622 Systems Modeling and Evaluation (3) Mathematical modeling, analysis, optimization, and simulation techniques for modeling and evaluating a broad class of computer systems. Prereq: 311 or consent.

ICS 623 Data Security (3) Symmetric encryption algorithms, secure hashing, algorithms, unicity distance, large number and finite field algebra and arithmetic, public key algorithms for encryption, digital signatures, and key exchange. Prereq: 311 or consent.

ICS 624 Advanced Data Management (3) Exploration of database design and object-relational tools and methods for the management of distributed multimedia database systems. Prereq: 321 or 421 or LIS 670/671 or consent.

ICS 632 Principles of High Performance Computing (3) Principles of high performance computing for single-processor and parallel architectures. Detailed coverage of parallel architectures and exposure to shared-memory, distributed-memory, and hybrid parallelization techniques with experience with message passing and multi-threaded programming. A-F only. Prerequisite: standing in computer science or closely related field, or consent. (Once a year)

ICS 635 Machine Learning (3) Introduction to key theoretical concepts of machine learning. Practical experience with decision-free methods, artificial neural networks. Bayesian belief networks and contemporary statistical methods including regression, clustering and classification. Prereq: consent. (Once a year)

ICS 636 Information Theory in Machine Learning (3) Basics of information processing and learning in the brain; neural networks; learning algorithms based on information maximization; applications in molecular and biological informatics. A-F only. Prerequisite: standing in computer science or mathematics background, or consent. (Once a year)

ICS 641 Advanced Theory of Computation (3) Advanced topics in formal languages, automata, computational complexity. Prereq: 441 or consent.

ICS 651 Computer Networks (3) Elementary principles of modern computer networking. Detailed coverage of overall architecture and the physical, data link, and network layers, with emphasis on the network layer. Prereq: 451.

ICS 655 Security and Trust III: Cyber Security and Commerce (3) Tools and methods for security managers. Tools and methods to secure and monetize sensitive information. Network as a computer and as a market. Problems of cyberwar, cybercrime, cyber bullying. Graduate students only. (Spring only)

ICS 661 Advanced Artificial Intelligence (3) Current issues in artificial intelligence, including expert systems, knowledge representation, logic programming, learning, natural language processing. Prereq: 461 or consent.

ICS 663 Pattern Recognition (3) Nature of the problem in pattern recognition and clustering: explanation of various algorithms. Prereq: MATH 371.

ICS 664 Human-Computer Interaction II (3) Studies of human performance in designing and using information systems. Emphasizes current concepts and methodologies from human factors, psychology, and software engineering relating to human performance. Prereq: 464 or consent.

ICS 665 User Interfaces and Hypermedia (3) Advanced concepts of user interfaces between computers and their users. Hypermedia information structures, guidelines, problems, and tradeoffs. Discussion of selected readings, implementation of prototypes. Prereq: 465.

ICS 667 HCl Design Methods (3) Advanced analytical and empirical methods for the design and evaluation of useful, usable, and robust human-computer interfaces. Students will apply selected methodologies to a major system design project. Prereq: 464 or 465, or consent.

ICS 668 Social Informatics (3) An advanced introduction to the design of human-computer systems and other technological artifacts for supporting human collaboration in learning, work and social contexts. Emphasizes theory and empirical studies of collaboration that inform such design. A-F only. Prereq: 464 or 465 or 664 or 665 or 667 or LIS 677; or consent.

ICS 669 Social Computing (3) Participative analysis of online communities, user-generated content collections. Theoretical and practical aspects of online interaction, identity, trust, and virtual social capital. A-F only. (Once a year)

ICS 674 Evolutionary Computation I: Survey of Methods (3) Computer simulation surveys in the field to prepare students for research. Topics include diverse engineering applications, theory, and concepts including search spaces, representation, objective functions, variation operators, selection, and population based search. Prereq: 211 (B or better) and 241 (C or better) and admitted to a graduate program or capable of graduate-level work in computer sciences, or consent. (Once a year: fall)

ICS 675 Bioinformatics: Sequences Analysis (3) To expose students to the biologically relevant analysis of DNA. RNA, proteins. Several bioinformatics methods and algorithms are introduced. Students are required to present one paper and to pull group project. A-F only. Prereq: 475 or MBBE 683, or consent. (Once a year)

ICS 676 Bioinformatics: Microarrays (3) Introduction to the basic principles of biology relevant for microarray gene expression data and to Bioinformatics. Collaborative open-source project to develop a modular general framework for the analysis of cDNA arrays and gene chips. A-F only. Prereq: 311 or background in biology, or consent. (Once a year)

ICS 681 Computer Graphics (3) Selected advanced topics in computer graphics. Substantial project required. Prereq: 481 or consent.

ICS 682 Numerical Computation (3) Selected topics in numerical analysis, mathematical software, and scientific computer examples include sparse matrix methods, finite element methods, mathematical programming. Prereq: consent.

ICS 683 Advanced Computer Vision (3) Fundamental problems and core concepts and techniques in computer vision, covering both theoretical and practical issues in the field. A-F only. Prereq: 485 or consent. (Once a year)

ICS 686 Digital Video Information (3) Principles and techniques of technical and context analysis of digital video information. Video capture and editing tools, compression and analysis algorithms, visual culture, narrative structure, juxtaposition of multimedia elements and their effects on information transmission. Prereq: standing or consent. (Alt. years)

ICS 690 Seminar in ICS (3) Series of talks on advanced research topics. Repeatable unlimited times. CR/NC only.

ICS 691 Topics in Software (3) Reflects special interests of faculty in theoretical computer science. Repeatable in different topics. Prereq: consent.

ICS 695 Advanced Special Topics in Security (3) Current topics and upcoming issues relevant to the field of information assurance and cyber security. Repeatable unlimited times. (Alt. years: spring)

ICS 699 Directed Reading/Research (V) Repeatable unlimited times. Prereq: graduate standing and consent.


ICS 800 Dissertation Research (V) Research for doctoral dissertation. Repeatable eight times. Prereq: candidacy for PhD in computer science.

Information Technology Management (ITM)

ITM 115 Using Computers and Applications (3) Using Windows computers and applications. Microsoft Office (or equivalent) and other applications. A-F only.

ITM 321 Project Management (3) Project management and techniques such as planning methods;PERT/CMP forecasting; risk analysis; applications in information technology projects and other areas. Prereq: BUS 310 and 311.

ITM 322 Supply Chain Processes (3) Improving organization productivity with an emphasis on analyzing supply chain processes and principles in terms of scheduling, inventory, quality control techniques, through most current practices. Prereq: BUS 310 and 311.

ITM 352 Programming Application Systems (3) Introduction to applications programming. Fundamentals, essential logic, file handling, report writing. Emphasis on systems development and disciplined programming. A-F only. Prereq: ICS 101 (Alpha) or equivalent, or consent.

ITM 353 Information Systems Analysis and Design (3) Analysis and design of systems in organizations. Includes role of general systems concepts, systems development life cycle, identifying systems requirements, logical and physical design. Prereq: 352 and BUS 311.

ITM 354 Database Systems (3) Introduction to database management and data structures, including database planning and design, normalization, relational and network data models, and physical organization and implementation. Prereq: 353.

ITM 360 Current Topics in ITM (3) Repeatable with permission of department chair. Prereq: varies with topic.

ITM 366 Information Systems in Organizations (3) Practice of information systems in organizations. Capstone course for MIS majors. A-F only. Prereq: 353 and 354 (or concurrent), and BUS 311.

ITM 385 Electronic Commerce (3) Survey of electronic commerce technologies and business strategies, with an emphasis on technology and application development. The development of web-based and multimedia applications; the impacts of EC on business strategy; legal and ethical issues. A-F only. Prereq: BUS 311 or consent.

ITM 387 (Alpha) Advanced Topics in Information Systems (3) Computerized management information systems, operations research, and business statistics; (B) software systems economics; (C) advanced topics in programming; (D) web-based application development; (E) advanced technology in MIS; (F) systems development; (G) database systems; (H) advanced business applications; (J) ethics of technology; (K) business intelligence. Repeatable with permission of department chair. Prereq: varies with topic.

Key to symbols & abbreviations: see the first page of this section.
ITM 399 Directed Reading and Research (V)
Reading and research in special area of major under direction of faculty member(s). Project must include statement of objectives, outline of activities planned, results expected, and how they are to be reported and evaluated. Must be approved in advance by the department chair and the faculty advisor.


ITM 433 Advanced Security (3) Designed around the plan-protect-respond cycle. Security threats, cryptography, network control, identification management, firewalls, intrusion detection systems, host hardening, and application security. Repeatable one time. Pr: 431 or consent. (Once a year)

ITM 660 Current Topics in Information Systems (3) Selection of current topics in information systems. Pr: 431 or consent. May be repeated with change in topic. Pre: BUS 630 and BUS 631, or consent.

ITM 680 Project Management, Information Technology and Change (3) Lectures and discussions to complement and enhance techniques of project management in organizational change, globalization and outsourcing, global teamwork, intercultural awareness, negotiation and leadership. Semester long group project. Open to all graduate students. (Once a year)

ITM 685 Electronic Commerce (3) Overview and discussion of the latest developments in e-commerce, hardware and software developments to support e-commerce, cases studies of successes and failures, and e-commerce applications with special emphasis on developing countries in Asia. A-F only. Pre: BUS 630 or consent. (Once a year)

ITM 688 Management of Health Information Technology and Population Health (3) Covers latest trends/innovations in HIT designed to reduce costs, improve quality/access, and reduce outcome disparity through population health management. Includes management of financial, operational, and professional aspects of effective HIT. A-F only. Graduate students only. Pre: BUS 630 and BUS 631. (Alt. years)

ITM 699 Directed Research (3) Reading and research in ITM under the direction of a faculty member.

ITM 704 Doctoral Seminar in Information Systems (3) Extensive and critical review of the IS research literature. Can be taken for credit. Repeatable three times. A-F only. Pre: CIS 703 (or concurrent). A-F only. Graduate students only. Pre: BUS 630 and BUS 631. (Alt. years)

ITM 706 International IT Organizational Research Methods (3) Overview of current survey methodology and analysis in global information systems research. A-F only. Pre: Ph.D student status in international management or concurrent with classes in the above.

ITM 799 Directed Reading and Research (3) Reading and research in an area of information technology management under the direction of the faculty member(s). A-F only. Pre: Ph.D student status in international management or consent.

**Institute for Teacher Education (ITE)**

ITE College of Education

ITE 312 (Alpha) Introduction to Teaching, Elementary (V) Standards-based planning, assessment, instruction, reflection; inclusive classroom management, multicultural environment; issues in education and curriculum. Developing knowledgeable, effective, caring professionals to support student’s academic, social, emotional, physical needs. Emphasis on writing instruction; (B) dual preparation in ECE and elementary education; (C) elementary education. A-F only.

ITE 313 (Alpha) Principles and Methods of Reading Instruction (V) First of two methods courses focusing on theories and research-based practices related to reading instruction in elementary classrooms. Emphasis on writing instruction; (B) dual preparation in ECE and elementary education; (C) elementary education. A-F only.

ITE 314 (Alpha) Principles and Methods of Writing Instruction (V) Second of two methods courses focusing on theories and research-based practices related to writing instruction in elementary classrooms. Emphasis on writing instruction; (B) dual preparation in ECE and elementary education; (C) elementary education. A-F only.

ITE 315 Field Training – Blended ECE (4) Students spend 15 hours per week in settings appropriate to concurrently enrolled classes; supervision provided by participating teacher and college supervised by UH Manoa field supervisor. Taken in conjunction with professional education courses; (B) dual preparation in ECE and elementary education; (C) elementary education. Repeatable two times or up to 9 credits A-F only.

ITE 319 Children’s Literature (2) Acquaintance with wide range of children’s books; criteria for evaluation of literature; using literature in the classroom. DL

ITE 321 Social Studies and Science in Early Childhood Education (3) Assessment, instructional methods, and materials for teaching social studies and science to children in preschool through grade 3. Emphasis on developmentally appropriate practices and lesson planning for teaching social studies and science, A-F only. Pre: 417, and 315 (or concurrent) or SPED 315 (or concurrent). (Alt. years: spring)

ITE 322 (Alpha) Social Studies, Elementary (V) Purposes, methods, curriculum, and assessment in teaching social studies. Emphasis on enriching children’s understanding of the communities of which they are a part through inquiry, investigation, collaboration, and expository skills. Emphasis on writing instruction; (B) dual preparation in ECE and elementary education; (C) elementary education. A-F only.

ITE 323 (Alpha) Science, Elementary (V) Science education in elementary school; methods and materials; laboratory activities selected from new science curricula; (B) dual preparation in ECE and elementary education. Each alpha repeatable one time, up to 3 credits. A-F only.

ITE 324 (Alpha) Mathematics, Elementary (V) Inquiry-based approach to concepts and algorithms of whole numbers and introduction to geometry/measurement. Laboratory experiences with appropriate manipulatives; (B) dual preparation in ECE and elementary education; (C) elementary education. A-F only. Pre: MATH 111 and MATH 112.

ITE 325 (Alpha) Mathematics, Elementary II (V) Inquiry-based approach to concepts and algorithms of fractions, decimals, graphing, and probability and statistics. Laboratory experiences with appropriate manipulatives; (B) dual preparation in ECE and elementary education; (C) elementary education. A-F only. Pre: 324B or consent for (B); 324C or consent for (C).

ITE 326 (Alpha) Visual Art, Elementary (V) Scope and organization of art in PK-6 school curriculum, creativity, use of art as a laboratory experience; (B) dual preparation in ECE and elementary education; (C) elementary education. A-F only.

ITE 329 (Alpha) Performing Arts Expression, K-6 (V) Standards-based teaching, with, in, through, and about music, dance, and drama. Developing verbal and non-verbal communication skills through creative expression with an emphasis on planning, teaching, and assessing preK-6 lessons that integrate the performing arts; (B) dual preparation in ECE and elementary education; (C) elementary education. A-F only.

ITE 343 (Alpha) Personal and Social K-6 Health Skills (V) Standards-based planning, teaching, assessment in health education. Developing interactive learning opportunities to teach personal and social responsibility for health through curriculum integration. Training, practice and evaluation of oral communication skills; (B) dual preparation in ECE and elementary education; (C) elementary education. A-F only.

ITE 346 Methods of Instruction, Industrial/Agricultural Education (3) Techniques of individual and group instruction in laboratory and related classes. Selection of various instructional techniques. A-F only.

ITE 347 Management of Industrial/Agricultural Facilities (3) Organization of instruction; handling supplies; maintaining equipment and tools; purchasing materials; keeping records; making inventories.


ITE 349 Teaching Marketing and Distribution (3) Theory and methods of teaching marketing and distribution courses. Pre: MKT 341 or MKT 351.


ITE 360 Introduction to Multicultural Education (3) Concepts and methods to develop sensitivity and awareness of cultural influences on behavior as these relate to the school process. (Cross-listed as EDEF 560) DS


ITE 380 Managing Classrooms (3) Analysis of the factors that contribute to learning in the classroom and the development of teacher behaviors that promote such learning.

ITE 390 (Alpha) Student Teaching (V) Full-time supervised experience in school. (B) dual preparation in ECE and elementary education; (C) elementary; (D) secondary. Pre: 315. (Alt. years: spring)

ITE 391 (Alpha) Seminar for Student Teaching (V) With student teaching, examination of knowledge, skills, and dispositions for teaching; standards-based planning, teaching, assessment, and reflection; inclusive classroom management; professional growth and development; integration of research, theory, and practice. Emphasis on writing instruction and ethical issues in teaching. (B) dual preparation in ECE and elementary education; (C) elementary; (D) secondary; (E) dual preparation in elementary and special education. CR/NC only. Pre: completion of all other program requirements, passing Praxis II exam(s).

ITE 391 (Alpha) Seminar for Student Teaching (V) With student teaching, examination of knowledge, skills, and dispositions for teaching; standards-based planning, teaching, assessment, and reflection; inclusive classroom management; professional growth and development; integration of research, theory, and practice. Emphasis on writing instruction and ethical issues in teaching. (B) dual preparation in ECE and elementary education; (C) elementary; (D) secondary; (E) dual preparation in elementary and special education. Repeatable nine times. (D). CR/NC only.

ITE 392 (Alpha) Student Teaching Modified (6) Modified student teaching for individuals who have had prior extensive teaching experience or wish to repeat student teaching. CR/NC: elementary; (D) secondary. Pre: extensive teaching experience; requirements listed under “student teaching”; approval of review committee. Consent. Co-requisite: 391.

ITE 399 Directed Study (V) Individual work supervised by instructor. May be repeated 3 times. A-F only. Pre: consent of instructor.

ITE 401 Engaging the Adolescent Learner (3) Examines how reading, writing, lan- guaging, viewing, technology, etc. are tools for learning content and engaging diverse adolescents across all disciplines. Includes a disciplinary literacies frame- work influencing curriculum planning, classroom culture, and assessment practices. A-F only.
ITE 402 (Alpha) Teaching Practicum (3) Observation, analysis, participation and teaching in middle or high school. A seminar accompanies the field experience. Subject field: (B) art; (C) business and marketing; (D) language arts; (E) physical education; (F) industrial arts/agriculture; (G) mathematics; (H) science; (I) social studies; (J) foreign language; (K) music; (M) home economics; (N) interdisciplinary; (P) English as a Second Language. Repeatable one time. CR/NC only. Pre: permission to admission to COE Secondary Teacher Education Program and 401. Co-requisite: 404 or consent, 404P for (P).

ITE 403 Seminar in Educational Inquiry (3) Study and discussion of general school-related topics and issues, e.g., dimensions of elementary and/or secondary schooling, school governance, curriculum design and development, the student learner, classroom management. Repeatable one time. A-F only. Pre: 401 or consent.

ITE 404 (Alpha) Teaching in the Subject Field (3) Procedures, practices, curricula, evaluation in secondary school subject field: (B) art; (C) business and marketing; (D) language arts; (E) physical education; (F) industrial arts/ agriculture; (G) mathematics; (H) science; (I) social studies; (J) foreign languages; (K) music; (M) home economics; (N) interdisciplinary; (P) English as a Second Language. Repeatable seven times for (P). A-F only. Pre: 401 or consent. Co-requisite: 402.

ITE 405 (Alpha) Teaching Residency, Secondary (V) Full-time student teaching experience in school. Student teachers will receive training and evaluation from the classroom teacher, school counselor, mentor teacher, and university supervisor. Subject field: (B) art; (C) business and marketing; (D) language arts; (F) industrial arts; (G) mathematics; (H) science; (I) social studies; (J) foreign languages; (K) music; (M) home economics; (P) English as a second language. CR/NC only. Pre: successful completion of all required courses; pass the content test(s) required by the state teaching license.

ITE 406 Seminar in Teaching Residency (3) Analysis and resolution of current ethical issues and practices in classrooms; teaching skills and strategies; curriculum planning, professional growth and development; and integration of teaching experiences with professional standards. Instruction in preparing an extensive written portfolio. A-F only. Pre: successful completion of all required courses or consent.

ITE 410 Supervision of the Observation-Participation Student (2) Basic guidelines for developing effective observation and participation strategies between the professional teacher and the observation-participation student. Pre: two years’ teaching experience and consent.

ITE 415 Observation and Assessment in Early Childhood Education (3) Introduction to the purposes, theories, methods of early childhood assessment. Emphasizes observation, documentation, and assessment to provide evidence of children’s development and learning and how to use assessment to guide teaching and learning. Pre: FAMR 331 or consent.

ITE 415L Observation and Assessment in Early Childhood Education Lab (3) Direct experience with children in early childhood settings in order to apply concepts from 415, develop skills in observation and assessment, and assess perspective of the role of the teacher in ECE settings. CR/NC only. Co-requisite: 415.

ITE 416 Teaching and Learning for Diverse Young Children (3) Continuation of 415. for courses on design, implementation, evaluation of meaningful, challenging integrated curriculum that promotes comprehensive developmental and learning outcomes for diverse young children (PK-3). Pre: 415 or consent. (Cross-listed as EDCS 416).

ITE 416L Teaching and Learning for Diverse Young Children Lab (3) Continuation of 415L. CR/NC only. Co-requisite: 416. (Cross-listed as EDCS 416L).

ITE 417 Foundations of Early Childhood Education, Ages 3-8 (3) Planning child-centered, responsive programs for children. Focuses on play, learning environments, integrated thematic instructional design, guidance, assessment, and family engagement to promote early childhood and early elementary to promote enjoyment, growth, and development.

ITE 420 Supervision of Student Teaching (3) Principles and methods; role of supervisor; human resources supervision. Open to teachers interested in pre-service teacher education. Pre: three years teaching experience and consent.

ITE 425 Family and Community Centered Programs (3) Knowledge and appreciation for the complex characteristics of children, families, and communities. Analysis and development of skills for creating respectful, reciprocal relationships with diverse children and families from diverse backgrounds. Pre: FAMR 331 or consent.

ITE 430 Advanced Methods of Student Teaching (3) Advanced principles and methods: clinical supervision, observation recording, analysis, interpretation of classroom teaching; human resources supervision in student teaching. Pre: 420, successful supervision of two or more student teachers, and consent.

ITE 436 Cooperative Vocational Education (3) Planned work experience program for special areas of vocational technical education. Acceptable type of wage-earning experience minimum of six 20-hour weeks or 240 work hours required. Repeatable unlimited times. Pre: consent.

ITE 438 Foundations of Vocational Education (3) Historical and philosophical foundations of vocational technical education; overview of federal and state legislation and contemporary practices. Special emphasis on vocational education program in Hawai’i.

ITE 439 Office and Marketing Technology (3) Understanding and use of word processing, spreadsheet, and database software for business applications. Explore software across the office and marketing content areas.


ITE 444 Education of Exceptional Children in Regular Classroom (3) Practices that facilitate teaching special needs students in regular classrooms. Techniques for meeting academic needs, managing behavior, motivating students, increasing peer interactions, communication between special and regular educators. Includes an emphasis on instruction in writing. (Cross-listed as SPED 444).

ITE 445 Educating Exceptional Students in Regular Classrooms, Secondary (3) Teaching secondary students with disabilities and those who are gifted/talented. Meeting academic/social needs, classroom management, peer interaction, collaboration between special and regular educators. Includes an emphasis on instruction in writing. (Cross-listed as SPED 445).

ITE 480 Issues in Computer Education (3) Integration of microcomputers into school curriculum and key issues related to microcomputer use in education. Pre: LTC 442 or consent. (Cross-listed as EDCS 480).

ITE 499 Directed Activity (V) Individual work supervised by instructor. May consist of reading, research, teaching, and/or projects. Pre: consent of division director.

ITE 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. CR/NC only. Pre: master’s Plan B or C candidate and consent.

ITE 550 Newspaper in the Classroom (2) ITE 572 Common Core State Standards in ELA: Content and Curriculum for Teachers (3) Professional development for K-12 teachers to upgrade their knowledge of ELA content and develop their instructional strategies to be consistent with the ELA practices of the Common Core State Standards. Repeatable unlimited times. CR/NC only.

ITE 578 (Alpha) Practicum in Curriculum Development: Natural Science (2) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. Repeatable unlimited times. CR/NC only. Pre: teaching experience.

ITE 583 (Alpha) Practicum in Curriculum Development: Natural Science (3) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. Repeatable unlimited times. CR/NC only. Pre: teaching experience.

ITE 601 Professional Studies Seminar I (V) Development of theoretical and practical knowledge base and skills for understanding, analyzing, and responding to teaching issues and problems. A-F only. Pre-requisite: 602.


ITE 604 Field Experience and Seminar II (V) Team collaboration on responding to identified school need; supervised experience in mini-teaching. Repeatable up to 12 credits. A-F only. Pre: 601 and 602. Co-requisite: 603.

ITE 610 Pre-internship Practicum (V) Supervised experience in instructional planning and practice teaching. CR/NC only. Pre: 603 and 604. Co-requisite: 611.


ITE 612 Teaching Internship (V) Full-time supervised teaching experience. CR/NC only. Pre: 610 and 611. Co-requisite: 612.


ITE 699 Directed Reading and/or Research (V) Individual reading and/or research. Repeatable 5 times. A-F only. Pre: written consent.

Key to symbols & abbreviations: see the first page of this section.
**Interdisciplinary Studies (IS)**

**IS 099 Mānoa International Exchange (V)** Designed for students preparing for participation in an international exchange program while enrolled at UH Mānoa. Repeatable unlimited times, credit for 12 credits only. CR/NC only. Pre: admittance to an international exchange program.

**IS 100 Marine Option Program Seminar (1)** Statewide overview of ocean issues and organizations involved with marine activities, management, education, research, and business. Exploration of opportunities for internships, research projects, study and careers. Proposal writing, project implementation, and report preparation guidelines. Orientation to the Marine Option Program. (Cross-listed as B I O L 1 0 4)

**IS 250 Personal Development for Effective Teams (3)** Exploration and application of basic leadership theories and processes which foster personal and interpersonal development via cognitive experiential classroom methods and mentoring relationships with experienced peer leaders. (Cross-listed as E N C R 2 5 0)

**IS 291 Community Service Practicum (V)** Supervised fieldwork in community agency, arranged by student. Repeatable one time. Pre: written proposal approved by Honors director and appropriate faculty advisor.

**IS 300 Field Study (V)** Pre-arranged systematic field investigation of selected topics. Pre: written proposal approved by Honors director and appropriate faculty member. Repeatable up to 16 credits.

**IS 311 Independent Study Tutorial (V)** Independent study tutorial. A-F only.

**IS 321 Native Americans and Native Hawaiians (3)** Comparative-contrastive examination of similarities and differences between Native Americans and Native Hawaiian societies, with attention to the diverse indigenous peoples of the U.S. with special attention to sociocultural parallels and mutual contacts since contact with Europeans. Perspective is explicitly interdisciplinary by drawing mainly on sociology and history, but also on archaeology, ethnology, linguistics, and other disciplines. A-F only. Pre: H I S T 1 5 2 and an introductory course in cultural anthropology, political science or sociology; or consent. (Alt. years) DS

**IS 322 Ethnohistory (3)** Review of ethnohistory, i.e. the interdisciplinary, holistic and inclusive investigation of the histories of native peoples drawing not only on documented sources, but also on ethnography, linguistics, archaeology, ecology and other disciplines as they relate to the cultural and historical experience of indigenous peoples. A-F only. Pre: H I S T 1 5 2 and an introductory course in cultural anthropology, political science or sociology; or consent. (Alt. years) DS

**IS 330 Information Technology and Culture (3)** Investigation of the impact of information technologies on contemporary culture from a variety of perspectives. A-F only. Pre: upper division or consent.

**IS 331 Science and Culture (3)** Cultural studies of science from historical, philosophical, sociological and literary perspectives. Examination of interactions of science, race, gender and environment. A-F only. Pre: upper division or consent.

**IS 340 Human Values and the Environment (3)** Examination of nature-culture dynamic over a range of contexts—literary ecology, systems ecology, political ecology, eco-feminism, environmental ethics—in order to articulate new possibilities for interdisciplinary understanding of the human place in nature. A-F only. Pre: any ENG DL or PHIL or GEOG course, or consent. (Once a year) DS

**IS 347 Pidgin and Creole Languages (3)** Nature, history, structure, and geographic distribution of pidgins and creoles. Pre: L I N G 1 0 2 or consent. (Alt. years) (Cross-listed as L I N G 3 4 7)

**IS 361 People, the Ocean and the Environment (3)** People’s impact on coastal and ocean environments, especially Hawaiian; scientific, legal, socioeconomic aspects. Ocean pollution, ocean technology. Pre: O C N 2 0 1, O R E 2 0 2, or Z O O L 2 0 0; or consent.

**IS 369 British Life and Culture (3)** For Study Abroad Program students participating in the UH Mānoa Semester in London. Emphasis is placed on understanding within historical contexts important issues for contemporary British society—participating those of class, power, gender, and race. A-F only. Pre: participation in London Semester Program.

**IS 399 Directed Reading and Research (V) Directed reading and research. Repeatable two times.**

**IS 400 Ocean Internships and Research (V)** Students carry out marine internships, practice research projects or field experience on- or off-campus with faculty guidance. Repeatable one time. A-F only. Pre: minimum cum GPA of 2.5, junior or senior standing in any field of study and IS 100/BIOL 104 or consent, project proposal. (Cross-listed as BIOL 400)

**IS 410 The Humboldt Brothers’ Legacy (3)** Life and thought of the two Humboldt brothers. Alexander (1769-1859) helped to lay the foundations of modern science, including geology, geography, botany, zoology, physiology and anthropology. Older, less well-known Wilhelm (1767-1835) was an influential statesman, classical scholar, man of letters, humanist, political philosopher, anthropologist and linguist, and founded the University of Berlin. Review of the two polymaths’ impact on modern science in the Americas, the Pacific and Asia. A-F only. Pre: upper-division or consent. DS

**IS 414 Introduction to Linguistic Anthropology (3)** Introduction to the ethnographic study of speech and language. Pre: ANTH 152 or consent. (Once a year) (Cross-listed as ANTH 414 and LING 414) DS

**IS 489 Environmental Practicum (3)** Field experience in study and abatement of environmental problems under faculty direction. Project proposal, narrative activity log, and documentary report are required. Pre: upper division standing, courses in appropriate disciplines. A-F only. Pre: consent. (Once a year) DS

**IS 499 Directed Reading and Research (V)** Directed reading and research. Repeatable one time.

**IS 610 Field Study in Geontology (V) Individually designed field experience for advanced certificate in geontology students.** Placements arranged at community programs, research sites, and special projects at the Center on Aging. Repeatable one time.

**IS 611 Integrative Seminar in Geontology (V)** Integrative seminar. A-F only. Pre: graduate standing or consent.

**IS 650 Principles of Applied Evolutionary Ecology: Biodiversity Loss, Biological Invasions and Emerging Disease (3)** Combined lecture-laboratory on the ecological and evolutionary underpinnings of the coupled process of biological invasion, disease emergence and biodiversity loss. A-F only. Pre: consent. (Once a year)

**IS 651L Laboratory A in Applied Evolutionary Ecology: Biodiversity Loss, Biological Invasions and Emerging Disease (3)** Combined lecture-discussion on the ecological and evolutionary underpinnings of the coupled process of biological invasion, disease emergence and biodiversity loss. A-F only. Pre: consent. (Once a year)

**IS 652L Laboratory B in Applied Evolutionary Ecology: Biodiversity Loss, Biological Invasions and Emerging Disease (3)** Practical laboratory/field rotation on the ecological and evolutionary underpinnings of the coupled process of biological invasion, disease emergence and biodiversity loss. Continuation of 650 and 651L. A-F only. Pre: 650 and 651L, or consent. (Once a year)

**IS 750 Topics in Biocultural Diversity and Conservation (3)** Biological, cultural, and linguistic conservation linked, but rarely studied simultaneously. Adopts a trans-disciplinary view of diversity and conservation of nature, cultures, and languages, along with issues in anthropology, law, and ethics. (Fall only)

Key to symbols & abbreviations: see the first page of this section.

**International Cultural Studies (CUL)**

**CUL 609 Faculty Seminar Series (1)** Seminar consists of a series of presentations by certificate faculty on topics of ongoing research. Presentations will open current debates about theory and method in cultural studies. Repeatable one time. A-F only.

**CUL 610 International Cultural Studies: History and Theory (3)** Seminar on the history and theory of interdisciplinary cultural studies. The politics of culture are examined in comparative perspective, focusing on their significance for identity formation, intercultural relations, and global flows of images, people and capital. Approaches to the study of media and popular culture are taken up in terms of their relevance for contemporary issues, especially in Hawai‘i and the Asia/Pacific region. Repeatable one time. A-F only. (Fall only)

**CUL 750 International Cultural Studies: Research Project (3)** Directed reading and research culminating in a project that engages issues in international cultural studies. Types of projects include scholarly essays, community-based projects, performances or exhibitions. Written statement of purpose and self-evaluation required. A-F only. Pre: 669 and 610.

**Italian (ITAL)**

**College of Languages, Linguistics and Literature Students choosing Italian for the language requirement should realize it may not be offered if demand is limited.**

**ITAL 101 Elementary Italian (3)** Conversation, grammar, and reading. HSL

**ITAL 102 Elementary Italian (3)** Conversation, grammar, and reading. Pre: HSL 101 consent. HSL

**ITAL 110 Immersion Italian-Elemetary (6)** Combined content of 101 and 102 covered in one summer session. (Summer only) HSL

**ITAL 160 Intensive Elementary Italian Abroad (V)** Intensive course of formal instruction on the first-year level in Italian language and culture in Italy. HSL

**ITAL 201 Intermediate Italian (3)** Reading, conversation, composition. Pre: 102 or 110. HSL

**ITAL 202 Intermediate Italian (3)** Continuation of 201. Pre: 201. HSL

**ITAL 258 Intermediate Italian Abroad (3)** Intensive course of full-time formal instruction in Italian on the second-year level in Italian language and culture. Pre: 102 or 110 or 160. HSL

**ITAL 259 Intermediate Italian Abroad (3)** Continuation of 258. HSL

**ITAL 311 Conversation (3)** Systematic practice for control of spoken Italian. Further development of vocabulary for accurate, mature expression. Pre: 202 or consent.

**ITAL 358 Third-Level Italian Abroad (3)** Intensive formal instruction at the third-year level in Italian language skills: reading, writing, grammar, or conversation in an Italian-speaking country. Pre: 202 or 259 or equivalent.

**ITAL 359 Third-Level Italian Abroad (3)** Continuation of 358.

**ITAL 360 Intensive Third-Level Italian Abroad (V)** Intensive formal instruction at the third-year level in Italian language skills: reading, writing, grammar, or conversation in an Italian-speaking country. Pre: 202 or equivalent.

**ITAL 458 Fourth-Level Italian Abroad (3)** Intensive course of formal instruction in Italy on the fourth-year level in Italian language, linguistics, culture, and literature. Pre: 359 or 360 or equivalent.

**ITAL 459 Fourth-Level Italian Abroad (3)** Continuation of 458.

**ITAL 460 Intensive Fourth-Level Italian Abroad (V)** Intensive formal instruction at the fourth-year level in Italian language and culture in Italy. For semester programs only. Pre: 360 or equivalent.
Japanese (JPN)

College of Languages, Linguistics and Literature

All students taking language courses in this program for the first time must take a regularly scheduled placement test; those with no background must come to the Department of East Asian Languages and Literatures for a brief interview. A grade of C or better in the prerequisite course is required for continuation.

JPN 100 Elementary Japanese, Special (3) Same material as 101, covered more quickly for students with some language background. Pre: placement test. HSL

JPN 101 Elementary Japanese (4) Listening, speaking, reading, writing, grammar. Meets one hour, four times a week, plus lab work. Pre: placement test or consent. HSL

JPN 102 Elementary Japanese (4) Continuation of 100 or 101. Pre: 100 or 101, or consent. HSL

JPN 105 Accelerated Elementary Japanese for Pre-Professionals (8) Content of 101 and 102 covered in one semester. Emphasis on practical Japanese used in professional contexts. Meets two hours, four times a week. Pre: consent. HSL

JPN 111 Elementary Japanese for Oral Communication I (3) Training in strategies for listening to various types of spoken material presented in narrations, interviews, use of language respect language in relation to social structure, interpersonal relationships, and ways of thinking. Pre: 302, 305; or consent. JPN 318 Oral Fluency Through Film (3) Training in oral communication and comprehesion skills utilizing the spoken text and visual segments from Japanese film and television dramas. Pre: 301 or consent.

JPN 322 Advanced Japanese Reading and Writing (5) Training in oral communication and comprehension skills essential for operating in a Japanese-speaking professional environment or workplace. Pre: 202, 205, 212, or placement test; or consent. (Fall only)

JPN 312 Third-Year Japanese for Professional Communication II (5) Training in oral communication skills essential for operating in a Japanese-speaking professional environment or workplace. Pre: 311 or placement test, or consent. (Spring only)

JPN 315 Third-Year Japanese Aural Comprehension (3) Training in strategies for listening to various types of spoken Japanese material presented in narrations, interviews, news broadcasts, and lectures. Pre: 302 or consent.

JPN 318 Oral Fluency Through Film (3) Training in oral communication and comprehension skills utilizing the spoken text and visual segments from Japanese film and television dramas. Pre: 301 or consent.

JPN 332 Advanced Japanese Reading and Writing (3) Web-based training in Japanese reading and writing to develop skills at the advanced level. Course activities combine independent work with communicative activities on the website. Ideal for in-service professionals seeking language development and maintenance. Repeatable one time. Pre: 301 (or concurrent) or consent.

JPN 350 Introduction to Japanese Linguistics (3) Introduction to major areas of linguistic description as applied to Japanese language. Pre: 301 or 307, or consent. DH

JPN 358 Third-Level Japanese Abroad (4) Intensive course of full-time study in JPN 320, 325, 327, 328; or consent. JPN 359 Third-Level Japanese Abroad (4) Continuation of 358. Pre: 301 or 358.

JPN 370 Language in Japanese Society (3) Review of the use of Japanese respect language in relation to social structure, interpersonal relationships, and ways of thinking. Pre: 302, 305; or consent. JPN 399 Directed Third-Level Reading (V) For those who need special assistance, e.g., reading texts in area of specialization or at a pace more rapid than those of standard courses. CR/NC only. Repeatable three times. Pre: consent.

JPN 401 Fourth-Year Japanese I (4) Continuation of 302 and 305 emphasizing all four skills. Transition to longer and more complex written and spoken Japanese. Meets 50 minutes, four times a week. Pre: 302, 305, 308, or placement test; or consent. JPN 402 Fourth-Year Japanese II (4) Continuation of 401. Transition to longer and more complex written and spoken Japanese. Meets 50 minutes, four times a week. Pre: 401 or placement test; or consent.

JPN 403 Fourth-Year Japanese for Advanced Speakers I (3) Continuation of 308 for bilingual students. Pre: 308 or placement; or consent. (Fall only) JPN 404 Fourth-Year Japanese for Advanced Speakers II (3) Continuation of 403 for bilingual students. Pre: 403 or placement; or consent. (Spring only) JPN 405 Fourth-Level Japanese Reading: Accelerated (8) Continuation of 402 covered in one semester. Meets two hours, four times a week. Pre: 302, 305, 308, or placement test.

JPN 407 (Alpha) Readings in Original Texts (3) (B) newspapers and magazines; (C) social sciences; (D) humanities; (E) modern literature. Pre: 402, 404, or 405; or consent. JPN 415 Japanese Aural Comprehension (3) Training in comprehension of spoken material presented in news broadcasts, documentary narration, formal lectures, etc. Pre: 402, 405; or consent. May be concurrently completed.

JPN 420 Fourth-Level Japanese (3) Training in oral communication skills in varied social contexts. Pre: 402 or 405.

JPN 421 Japanese Composition (3) Writing skills refined through practice in various styles (essays, letters, etc.). Pre: 402, 404, or 405; or consent.

Key to symbols & abbreviations: see the first page of this section.

JPN 423 Advanced Listenting and Speaking (3) Training in listening and speaking for bilingual and other advanced learners. Emphasis on formal Japanese such as academic lectures, news, exchanges in business settings, public speaking, etc. Pre: 421 or consent.

JPN 424 English to Japanese Translation (3) Training in techniques of translating English into Japanese. Pre: 407B, 407C, 407D, or 407E; or consent. (Cross-listed as TI 425)

JPN 425 Japanese to English Translation (3) Training in techniques of translating Japanese into English. Pre: 407B, 407C, 407D, or 407E; or consent. (Cross-listed as TI 425)


JPN 451 Structure of Japanese Language (3) Introduction to phonology, morphology, syntax, and semantics of modern colloquial Japanese. Pre: 402, 404, or 405; or consent. (Cross-listed as LING 350, 351, and 352)

JPN 452 Introduction to Japanese Pedagogical Grammar (3) Introduction to teaching of basic Japanese grammatical patterns. Pre: 350 or LING 320, and 407; or consent.

JPN 458 Fourth-Level Japanese Abroad (4) Intensive course of full-time study in JPN 320, 325, 327, 328; or consent. JPN 459 Fourth-Level Japanese Abroad (4) Continuation of 458. Pre: 401 or 458.

JPN 461 Introduction to Classical Japanese (3) Basic classical Japanese grammar to develop reading skills. Pre: 407 or consent.

JPN 466 Readings in Classical Japanese (3) Introduction to major genres of prose and poetry. Repeatable one time with permission. Pre: 461 or consent. DL

JPN 471 Okinawan Language and Culture I (3) The first of a series of two courses (JPN 471-472) focusing on the language, heritage, and folk culture of Okinawa. Pre: 302, 305, 308, or consent. DH

JPN 472 Okinawan Language and Culture II (3) The second of a series of two courses (JPN 471-472) focusing on Okinawan literature, language skills, heritage, and cultural understanding. Pre: 471 or consent. DL

JPN 475 Introduction to Japanese Sociolinguistics (3) Application of sociolinguistics to social phenomena such as group identity, language and gender, dialects and interpersonal communication. Pre: 350 and 370; or consent.

JPN 485 Advanced Readings in Modern Japanese Literature (3) Advanced course in concept and jargon ofOkinawan literature, language skills, heritage, and cultural understanding. Pre: 471 or consent. DL

JPN 486 Advanced Readings in Modern Japanese Literature (3) Advanced course in concept and jargon ofOkinawan literature, language skills, heritage, and cultural understanding. Pre: 471 or consent. DL

JPN 487 Contemporary Topics (3) Advanced course to foster speed, accuracy, and attention to stylistic issues in modern Japanese literature. Pre: 407E and one of 407B, 407C, or 407D; or consent. DL

JPN 488 Readings in Modern Japanese (3) Advanced course in concept and jargon ofOkinawan literature, language skills, heritage, and cultural understanding. Pre: 471 or consent. DL

JPN 489 Advanced Japanese Language Study (3) Advanced course in concept and jargon ofOkinawan literature, language skills, heritage, and cultural understanding. Pre: 471 or consent. DL

JPN 490 Advanced Japanese Language Study (3) Advanced course in concept and jargon ofOkinawan literature, language skills, heritage, and cultural understanding. Pre: 471 or consent. DL

JPN 495 Project Work in Japanese (3) Advanced Japanese language skills through a field-based research project on a topic of the individual student’s choice. Interviews, surveys, observations, written materials and AV-assisted oral presentations. Repeatable one time. Pre: 402 or 405 or equivalent, or consent.

JPN 499 (Alpha) Internship Program (3) Analysis of intercultural communication processes under faculty supervision through participation in an organization serving native speakers of Japanese. Pre: 407 or equivalent, or consent. (Cross-listed as TI 424)
JOUR 327 Interpretive Journalism (3) Writing articles of news analysis, editorials, and critical reviews. Pre: consent.
JOUR 330 Video Journalism (3) Fundamentals of video journalism using digital video cameras for writing, editing, and producing news stories. Pre: Sophomore standing or higher. A-F only. Pre: 250 (with a minimum grade of B).
JOUR 360 Journalism History and Trends (3) Development of the news media and trends that may affect the future of journalism. Pre: upper division standing. DS
JOUR 365 Communication and Law (3) Role of communication in the legal process; impact of law on communication processes. Pre: COM/JOUR major and junior standing, or consent. (Cross-listed as COM 451) DS
JOUR 385 Practicum (1) Working on campus student or quasi-professional publications under professional and faculty supervision. CR/NC only. Repeatable up to three credits. Pre: consent.
JOUR 390 (Alpha) Journalism/Communications Workshops (V) Short-term intensive workshops in journalism and mass communication skills and projects. (B) workshop in new media; (C) workshop in reporting; (D) workshop in editing; (E) workshop in broadcast journalism; (F) workshop in public relations. Repeatable in different alphabas up to 6 credits. JOUR or COM majors only. Pre: consent. (Cross-listed as COM 390)
JOUR 401 Journalism Projects/Production (6) Intense problem-based application of skills and knowledge to production of a major journalism project across multiple media platforms. Repeatable one time with instructor approval. Pre: 300 and 320 or 330 and consent, and ICS 101 or 110 or 111. (Fall only)
JOUR 402 Media and Community (6) Intellectual, historical, social and cultural context of contemporary journalism in our community with application through projects. Pre: 300 and 320 or 330 and consent, and ICS 101 or 110 or 111.
JOUR 407 Advanced Photjournalism (3) Computer experience in the creation, manipulation, and editing of color news, feature, sports, and documentarian images. Study of the ethical and legal dimensions of electronic imaging. Pre: 307 or consent.
JOUR 425 Publication Layout and Design (3) Visual display concepts and procedures for newsletters, brochures, newspapers, magazines. Pre: upper division standing. JOUR majors only. Pre: COM/JOUR major and junior standing, or consent. (Cross-listed as COM 459)
JOUR 459 Special Topics (3) Topics of interest to faculty and students; taught by regular and visiting faculty. Repeatable on different topics to six credit hours. JOUR majors only. Pre: COM/JOUR major and junior standing, or consent. (Cross-listed as COM 459)
JOUR 460 Media Ethics (3) Ethics and social responsibility for media professionals. Application of ethical theories and principles to case studies and research projects. A-F only. Pre: any 300-level course as COM 460)
JOUR 475 Global Communication (3) Problems and opportunities of communication in a variety of international contexts. Focus on commerce, diplomacy, and mass communication. JOUR majors only. Pre: COM/JOUR major and junior standing, or consent. (Cross-listed as COM 475) DS
JOUR 485 Fieldwork (3) Internship in media or PR operations under professional and faculty supervision. Repeatable two times. CR/NC only. Pre: 250 (with a minimum grade of B) and 300, and either 320 or 330; or consent.
JOUR 499 Directed Research (V) Individual research projects. Pre: senior standing and consent of department chair.
Kinesiology and Rehabilitation Science (KRS)

College of Education

Students registering for 101-187, 323, 331-339, 371, 385, and 470 will be requested to complete a medical history form and a liability disclaimer form on the first day of instruction. All students taking 491-494 must be immunized for hepatitis B virus prior to admission in the class.

The minimum required grade for prerequisites for undergraduate-level courses is a grade of C- or better, unless otherwise specified. The minimum required grade for prerequisites for graduate-level courses is a grade of B or better.

KRS 101 Physical Fitness (1) Conditioning exercises and activities to develop and maintain physical fitness. Emphasis on fitness tests administered to measure status and progress. Repeatable unlimited times, but credit earned one time only.

KRS 102 Aerobic Fitness: Beginning (1) Aerobic fitness improvement upon completion of course by regularly attending and practicing safe workout routines. Learn fitness components, names of muscles and exercises associated with each one. Repeatable unlimited times, but credit earned one time only.

KRS 103 Swimming: Beginning (1) Adjusting to and improving swimming skills. Correct arm stroke, leg kick, breathing techniques and their coordination. (Student to provide own swimming attire approved by instructor.) Repeatable unlimited times, but credit earned one time only.

KRS 104 Swimming: Beginning and Intermediate (1) Adjusting, swimming, sculling, arm exercise, leg kick, breathing techniques and coordination. Perfecting and integrating basic strokes with emphasis on speed and distance. (Student to provide own swimming attire approved by instructor.) Repeatable unlimited times, but credit earned one time only.

KRS 105 Swimming: Advanced (1) Correct techniques used in competitive swimming, racing starts, correct turning techniques, long-distance swimming, (Student to provide own swimming attire approved by instructor.) Repeatable unlimited times, but credit earned one time only. Pre: 104 or consent.

KRS 106 SCUBA Diving: Beginning (1) Learning underwater equipment handling skills, and the knowledge to become safe divers. Additional costs for equipment, diver manual, dive tables, and certification fee. Repeatable unlimited times, but credit earned one time only.

KRS 107 Aqua-Aerobic Fitness (1) Combined lecture and lab with emphasis on aerobic fitness improvement through total body aquatic workouts with music, and development of individualized aquatics fitness program. Open to all students. Repeatable unlimited times, but credit earned one time only.

KRS 110 Golf: Beginning (1) Rules, etiquette, grip, stance, drive, normal iron shots, approach shots, putting. Repeatable unlimited times, but credit earned one time only.

KRS 111 Golf: Intermediate (1) Corrective work on basic movements and rhythm; adjustments for bunker play, uphill lies, downhill lies, short game around and on the green; handicapping and match play competition. Repeatable unlimited times, but credit earned one time only. Pre: 110 and consent.

KRS 112 Golf: Advanced (1) Improving drive, fairway wood shots, long iron shots, control shots, trouble shots, putting, course management, competitive strategy, problems in rules. Greens fees paid by student for play on courses. Repeatable unlimited times, but credit earned one time only. Pre: 111 and consent.

KRS 113 Human Physiology and Anatomy (5) Introduction to human physiology and anatomy designed to serve the needs of dental hygiene students and others interested in health-related careers. (Cross-listed as PHYL 103) DB

KRS 115 Bowling (1) Rules, etiquette, arm swing, approach, execution, scoring, spare pickups. Students pay charge for use of alley. Repeatable unlimited times, but credit earned one time only.

KRS 120 Badminton (1) Rules, etiquette, grip, forehand and backhand strokes, serving, smash, drive, net play, offensive and defensive strategy; singles and doubles play. Repeatable unlimited times, but credit earned one time only.

KRS 123 Folk and National Dances (1) Popular dances of various national groups, including square dances. Repeatable unlimited times, but credit earned one time only. DA

KRS 124 Dances of Hawai’i (1) Background and fundamentals of hula. Selected dances with and without instruments. Repeatable unlimited times, but credit earned one time only. DA

KRS 125 Dances of Hawai’i: Advanced (1) Advanced techniques in hula movements. Selected dances taught with and without instruments. Individual choreography will be emphasized. Repeatable unlimited times, but credit earned one time only. Pre: 124 or consent. DA

KRS 126 Social Dance: Ballroom (1) Social dances including fox trot, waltz, swing, and other popular dances. Basic steps, rhythm pattern, styling, and variations are taught. Social etiquette is stressed. Repeatable unlimited times, but credit earned one time only. DA

KRS 127 Social Dance: Latin (1) Social dances of a Latin flavor including rhumba, cha-cha, tango, samba, and other basics. Steps, rhythm pattern, styling, and variations are taught. Social etiquette is stressed. Repeatable unlimited times, but credit earned one time only.

KRS 130 Tennis: Beginning (1) Rules, etiquette, grip, forehand and backhand strokes, serving, volleying; singles and doubles play. Repeatable unlimited times, but credit earned one time only.

KRS 131 Tennis: Intermediate (1) Corrective work in three-hour sessions. Open to all students. Repeatable unlimited times, but credit earned one time only. Pre: 130 or consent.

KRS 132 Tennis: Advanced (1) Improving upon the strokes introduced in 130 and 131; advanced competitive strategy; problems in rules; officiating; elements of tournament play. Repeatable unlimited times, but credit earned one time only. Pre: 131 or consent.

KRS 135 Volleyball: Beginning (1) Combined lecture/lab-physical activity with emphasis on beginning skills and knowledge relative to serving, passing, spiking, digging, blocking, and offensive and defensive strategies and concepts. Repeatable unlimited times, but credit earned one time only.

KRS 136 Volleyball: Intermediate (1) Combined lecture/lab-physical activity with emphasis on improving skills and knowledge through practice and cognitive activities relative to serving, passing, spiking, digging, blocking, and offensive and defensive strategy. Open to all students. Repeatable unlimited times, but credit earned one time only. Pre: 135 or consent.

KRS 137 Basketball (1) Rules, passing, shooting, dribbling, reboulding, individual defensive and offensive maneuvers; team offense and defense. Repeatable unlimited times, but credit earned one time only. Pre: 135 or consent.

KRS 150 Power Lifting (1) Exercise technique and theory with emphasis on anaerobic exercise. Explores advanced periodization models and their utilization, mastery of Olympic lifts, and plyometric programs. Repeatable unlimited times, but credit earned one time only. Pre: 152 or consent.

KRS 152 Weight Training (1) Kinesiology of lifting and weight training, various types of exercises and methods of training with resistance. Repeatable unlimited times, but credit earned one time only.

KRS 153 Olympic and Power Lifting (1) Exercise technique and theory with emphasis on anaerobic exercise. Explores advanced periodization models and their utilization, mastery of Olympic lifts, and plyometric programs. Repeatable unlimited times, but credit earned one time only. Pre: 152 or consent.

KRS 154 Troubling and Rebounding (1) Single and combination stunts on tumbling mats and trampoline, balancing stunts; techniques of spotting; safety procedures. Repeatable unlimited times, but credit earned one time only.

KRS 156 Heavy Apparatus (1) Single and combination stunts on side horse, horizontal bar, parallel bars, still rings; techniques of spotting; safety procedures. Repeatable unlimited times, but credit earned one time only.

KRS 160 Judo (1) Rules, etiquette, method of falling and breaking the fall, simple throws and their counters, simple holds and the breaking of such holds, randori. (Student to provide own gi.) Repeatable unlimited times, but credit earned one time only.

KRS 161 Aikido (1) Rules, etiquette, basic rolls, simple holds and the breaking of such holds, specific physical conditioning exercises. (Student to provide own gi.) Repeatable unlimited times, but credit earned one time only.

KRS 163 Tai Chi Ch‘uan (1) Classic forms of t’ai chi ch‘uan. Repeatable unlimited times, but credit earned one time only.

KRS 164 Karate: Beginning (1) Rules, etiquette, basic stances, blocks, thrusts, kicks, ippon kumite, and selected kata. (Student to provide own gi.) Repeatable unlimited times, but credit earned one time only.

KRS 165 Karate: Intermediate (1) Emphasis on improving the basic techniques (stances, punches, kicks, forms, and sparring); introduction to combination techniques. (Student to provide own gi.) Repeatable unlimited times, but credit earned one time only.

KRS 170 Yoga: Beginning (1) Experiencing yoga and its effects on body, mind, and consciousness of individual. Encompasses exercise, breathing techniques, deep relaxation, meditation, practice in concentration, and yogie postures. Repeatable unlimited times, but credit earned one time only.

KRS 171 Yoga: Intermediate (1) Corrective work and improvement of basic techniques. Exercise sets and combinations designed to develop endurance, flexibility, muscle and nerve strength, meditation, and deep relaxation technique. Repeatable unlimited times, but credit earned one time only. Pre: 170 or consent.

KRS 173 Water Polo (1) Fundamentals of basic water polo skills, namely, ball handling, passing, shooting, dribbling plus a brief introduction into game tactics of individual offense and defense. Repeatable unlimited times, but credit earned one time only. Pre: 104 or consent. (Student to provide own swimming attire approved by instructor.)

KRS 181 Sport Proficiency I: Invasion (3) Knowledge, skill development, and strategy of various invasion type games and sports. Sports like basketball, soccer, ultimate frisbee and/or others are introduced within a tactical framework. Repeatable one time, but credit earned one time only. A-F only.

KRS 182 Sport Proficiency II: Net, Field, and Target (3) Knowledge, skill development, position, and strategy of net, field and target sports. Sports like volleyball, tennis, softball and golf are introduced within a tactical framework. Repeatable unlimited times, but credit earned one time only. A-F only.

KRS 185 Floor Exercise Gymnastics (1) An entry-level course designed to develop students’ knowledge of men’s and women’s gymnastics floor exercise routines, including injury prevention, skill progression, spotting techniques, and routine choreography. Primarily for KRS majors; others admitted on space-available basis. Repeatable unlimited times, but credit earned one time only. A-F only.

KRS 186 Track and Field for Physical Education (1) Knowledge, skills, and rules of various track and field events. Organization of track meets and strategy
in competition. Primarily for KRS majors; others admitted on space-available basis. Repeatable unlimited times, but credit earned one time only.

KRS 187 Softball (1) Combined lecture-lab-physical activity with emphasis on basic skills, rules, etiquette, offensive and defensive strategies, position play, and game situations. Open to all students. Repeatable unlimited times, but credit earned one time only.

KRS 201 School Health Problems: Elementary (2) Responsibilities of elementary school teacher in recognizing and meeting pupils’ needs, emphasizing teacher’s role in health instruction, health services, school health policies. Repeatable one time.

KRS 202 School Health Problems: Secondary (2) Responsibilities of school teacher in recognizing and meeting pupils’ needs, emphasizing health instruction, health services, healthful school living, school health policies. Repeatable one time.

KRS 203 Foundations of Physical Education (3) Physical education as a professional field. Overview of history, philosophy, and current practices in physical education. Survey of psychological and sociological foundations of exercise and sport. KRS majors or approval. Repeatable one time. A-F only.

KRS 208 Recreation Services in Contemporary Society (3) Histories and philosophies in recreation history; contemporary issues; roles in modern society; relationship to health, physical education, and exercise science.

KRS 210 Leisure Education and Life Skills Development (5) Using sports as a learning tool, students will gain awareness, acquire knowledge and develop skills to enhance their classroom, athletic and personal performance. Class topics include current issues and strategies for maintaining healthy lifestyles. Repeatable one time.

KRS 232 Safety and Risk Management (2) Understanding the fundamental principles and techniques of safety and accident-prevention programming emphasizing safety in public places, on the job and motor vehicle situations. Repeatable one time.

KRS 238 Outdoor Recreation Management (3) Objectives and values of outdoor recreation; characteristics and determinants of programs; planning, organizing, leadership, and facilities for recreational uses of natural environments. Repeatable one time. Pr.: 208 or consent.

KRS 241 Health Education Curriculum (2) Objectives of school health program, emphasizing scope and sequence of health instruction; critical examination of health curriculum from various states. Repeatable one time. Pr.: 201 or 202.

KRS 249 Programming and Leadership (3) Factors in planning and leading recreation programs; characteristics and responsibilities of leadership in relation to nature, scope, and resources of a variety of programs. Repeatable one time. Pr.: 208 or consent.

KRS 270 Introduction to Physical Education (4) Introduction to foundational knowledge for effective teaching, history, philosophy, and current practices in physical education. Provides the basis for later coursework in K-12 physical education. Required field experience. Repeatable one time. A-F only. Pr.: consent. (Fall only)

KRS 271 Evaluation in Health Education (2) 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. Repeatable one time. Pr.: 201 or 202.

KRS 302 School’s Role in Community Health (2) Functional interrelationships between school and other community health organizations in solving school-community health problems. Repeatable one time. Pr.: consent.

KRS 305 Principles of Sports Medicine (3) Examines with some depth, principles of risk management and pathology of athletic injuries, major musculoskeletal structures, and concepts of evaluative skills, treatment, and rehabilitation for common athletic injuries. A-F only. Repeatable one time. DB

KRS 310 Coaching of Football (2) Theory and strategy of offensive and defensive football coaching. Emphasis on coaching philosophy, selecting and developing an offense and defense, organizing practices, special situations, scouting, and training and conditioning. Repeatable one time. Pr.: consent.

KRS 311 Coaching of Basketball (2) Theory and strategy of offensive and defensive basketball coaching. Emphasis on coaching philosophy, selecting and developing an offense and defense, organizing practices, special situations, scouting, and training and conditioning. Repeatable one time. Pr.: consent.

KRS 312 Coaching of Baseball (2) Theory and strategy of offensive and defensive baseball coaching. Emphasis on coaching philosophy, selecting and developing an offense and defense, organizing practices, special situations, scouting, and training and conditioning. Repeatable one time. Pr.: consent.

KRS 313 Coaching of Volleyball (2) Theory and strategy of offensive and defensive volleyball coaching. Emphasis earned one time only. Pr.: selecting and developing an offense and defense, organizing practices, special situations, scouting, and training and conditioning. Repeatable one time. Pr.: consent.


KRS 329 Managing Recreation Services (3) Administrative framework and procedures pertinent to the operation of agencies providing recreational services to the various publics. Repeatable one time. Pr.: 208 or consent.

KRS 331 Water Safety Training (3) Theory and methods of advanced lifesaving and water safety leading to American Red Cross Water Safety Instructor (WSI) certification. Repeatable one time. Pr.: 104 or consent. (Student to provide own swim attire approved by the instructor.)

KRS 332 Emergency Care and First Aid Training (3) Practicum in training of persons to become qualified in emergency care knowledge, basic life support, and first aid skills. First Aid and CPR certificates may be earned. DB

KRS 333 Movement Education I (3) A movement-based approach to teaching basic motor skills in preschool/elementary education. Students actively participate and learn about developmentally appropriate content and pedagogy for children in grades P–5/6. Peer bit teaching is included. A-F only.

KRS 334 Movement Education II (3) (LEC, 1 hr.; LAB) Concepts in teaching Pre/K-5 physical education. Students will learn to plan and teach physical education for children. Peer bit and field teaching included. Repeatable one time, but credit earned only.

KRS 335 Coaching of Track and Field (2) Techniques and rules of sprints, distance runs, relays, hurdles, long jump, high jump, pole vault, shot put, discus, and javelin throws; conduct of track and field meets; specific conditioning and training programs. Repeatable one time.


KRS 337 Fieldwork in Recreation I (5) Initial supervised leadership experience in recreational agencies. One hour per week in class discussion sessions. For special situations, scouting, and training methods. Repeatable one time. Pr.: consent of recreation advisor.

KRS 339 Special Recreation (3) Special recreation as a professional field. Overview of special recreation services. Emphasis on recreation services for special populations. Repeatable one time. Pr.: 208 or consent.

KRS 353 Structural Kinesiology (3) Gross human anatomy, emphasizing identification and description of parts of the musculoskeletal system; selected actions pertaining to motor activity. Primarily for KRS majors, but open to others with consent. Pr.: PHYL 103 or 141/141L or consent. DB

KRS 354 Exercise and Sport Physiology (3) Emphasis on physiological responses to exercises and physical training as related to strength, muscular endurance, cardio-pulmonary endurance, and flexibility for KRS majors, but open to others with consent. Kinesiology and Rehabilitation Science, Health/Exercise Science and Lifestyle Management, and Physical Education majors only. A-F only. Pr.: PHYL 103, or 142/142L (or concurrent), or BIOL 171/171L (or concurrent); or consent. Co-requisite: 354L. DB

KRS 354L Exercise and Sport Physiology Lab (2) Laboratory section to accompany KRS 354. Emphasis will be hands-on data collection and analysis of the physiological responses to exercise and physical training. Lab report development and scientific writing will also be emphasized. A-F only. Pr.: PHYL 103 or 142/142L (or concurrent) or BIOL 171/171L (or concurrent); or consent. Co-requisite: 354. DB

KRS 371 Teaching Techniques I: Elementary (3) Teaching techniques and methods of elementary physical education. Content to include basic skills and games in a school-based experience. Repeatable up to 6 credits. Primarily for KRS majors only.

KRS 372 Teaching Techniques II: Secondary (3) Teaching techniques and methods of secondary physical education. Content to include invasion, net, field, and target activities. These activities emphasize the tactical approach in a school-based experience. Primarily for KRS majors. A-F only. Pr.: 181, 182, admittance to COE, and consent.

KRS 378 Field Work in Strength and Conditioning I (1) Supervised practicum in strength training and conditioning. Students will be introduced to the theory and practice of designing and implementing both strength/power, and general conditioning programs. Repeatable one time. Pr.: 152, 354 (or concurrent); or consent.

KRS 395 Personal Health and Wellness (3) Scientifically-based information will be presented to help the student make decisions and take responsibility for his/her own health and health-related behaviors. The student will develop a personal, daily physical activity/exercise program, in which he/she will participate and be monitored. Repeatable one time. DB

KRS 399 Directed Reading (V) Individual problems. Limited to senior majors in health education, physical education, athletic training, or recreation with a minimum GPA of 2.75 in major field. Repeatable unlimited times.

KRS 401 Current Trends in Health (3) Identification and analysis of the most important health issues for individuals, families, schools, and communities. Focus on local and national health and community issues. Repeatable one time. A-F only.

KRS 402 Practicum in Physical Education (3) Field experience in teaching physical education activities in schools. K-12 certification in leadership; selection of activities and program evaluation for K-12 licensure. Repeatable two times. A-F only. Pr.: admission to COE and consent.

KRS 403 Guidance and Classroom Management (3) Guidance principles applied to classroom management for teachers. Pr: consent.

KRS 404 K-12 Teaching Methods in Physical Education (3) Methods and materials in teaching Key to symbols & abbreviations: see the first page of this section.
physical education activities program; techniques; leadership; selection of appropriate activities and program evaluation for teaching licensure. Repeatable one time, but credit earned one time only. A-F only.

KRS 405 (Alpha) Teaching Residency (V)
Full-time supervised experience in elementary and secondary school level. School level corresponds to level of licensure desired. (E) elementary; (S) secondary. Early field experience one time. Kinesiology & Rehabilitation Science, Physical Education, and Secondary Education-Physical Education majors only. A-F only. Pre: 402 (with a minimum grade of B) and 404 (with a minimum grade of B); requirements for grants stated under "student teaching"; or consent. Co-requisite: 406.

KRS 406 Seminar in Teaching Residency (3)
Analysis and resolutions of issues in teaching residency; teaching strategies and techniques; curriculum planning; professional growth and development. Repeatable one time. A-F only. Pre: 402 and 404, or consent.

KRS 407 Psychosocial Aspects of Sport (3)
Examination and application of sociological and psychological theories in sport, including the influence of race, ethnicity, gender, identity and human development, social class, disabilities, and sexual orientation on the sport experience. A-F only. Pre: consent. DS

KRS 415 Prevent/Care of Athletic Injuries (3)
An examination of recent practices and procedures in the prevention and care of athletic and sports injuries. Observational field experiences in athletic training will be required. A-F only. Pre: PHYL 301 (or concurrent with consent) and PHYL 301L (or concurrent with consent). DB

KRS 416 Fundamentals of Ergonomics (3)
Introduction to ergonomics principles and their application in understanding and prevention of Muscular Skeletal Disorders encountered in the working environment. Emphasis on introduction to legal aspects of ergonomics. Pre: 463 or consent.

KRS 419 Administration in Athletic Training, Exercise Science, Allied Health (3)
An examination of organization and administration in Athletic Training, Exercise Science and Allied Health professionals. Kinesiology and Rehabilitation Science, Health/Exercise Science and Lifestyle Management, and Physical Education majors only. A-F only. Pre: 353 and 415; or consent.

KRS 420 Lower Extremity Assessment (3)
An examination of the pathology of injuries to the lower extremities and their care and treatment designed for Athletic Training, Exercise Science and Allied Health professionals. CRS majors only. A-F only. Pre: 353, 415; or consent.

KRS 421 Upper Extremity Assessment (3)
An examination of the pathology of injuries to the upper extremities and their care and treatment designed for Athletic Training, Exercise Science and Allied Health professionals. Kinesiology and Rehabilitation Science, Health/Exercise Science and Lifestyle Management, and Physical Education majors only. A-F only. Pre: 353 and 415; or consent.

KRS 423 Curriculum and Supervision (3)
Effective program development, planning, and supervision, including issues in legal liability and administration of all aspects of physical education programming in grades K-12. Repeatable one time. A-F only. Pre: 270 or concurrent only. KRS

KRS 428 Current Issues in Leisure Services (3)
Philosophical foundations and current and emerging issues in leisure services management and programming. Coverage of leisure research and its implications to practice. Repeatable one time. Pre: 238, 249, and 329; or consent.

KRS 429 Evaluating and Marketing Leisure Services (3)
Basic methods in marketing, planning, evaluating programs and problem-solving methods, survey research design, data analysis, and report generation for park, recreation, and tourism systems. A-F only. Pre: 329 (or concurrent), or consent.

KRS 432 Emergency Care for the Professional Rescuer (3) Combined lecture-lab on advanced emergency care for injuries and illnesses and includes certifications for CPR/First Aid/AED. Class size of approximately 20 per lab. Open to all majors. Repeatable one time. A-F only. Pre: consent.

KRS 434 Coaching Athletics (3) Combined lecture-lab with emphasis on scientific principles, theory and practice, and professional qualities of the coach. A-F only. Pre: consent.

KRS 437 Camp Resources and Planning (2) (1 Lec, 1-3 hr Lab) Combined lecture-lab for camp counselors and camp leadership. Plan and evaluate camp experiences for children and youth, including those with disabilities. Include field trips. Pre: 331 and 332, or consent.

KRS 438 Practicum in Camping (V) Supervised leadership at a camp setting with children and youth, including those with disabilities. Day or residential camps. One full week camping for each credit hour. Maximum of four credit hours. Pre: 437 (or concurrent) or consent.

KRS 443 Disability and Diversity in Physical Activity (4) (3 Lec, 1-1 hr Lab) Participants will explore issues of socio-cultural, sexual orientation, religion, and intellectual and physical disabilities and how these affect a student’s learning and behavior in the physical education setting. Required field experience. Repeatable one time. A-F only. (Cross-listed as SPED 443)

KRS 463 Sport Biomechanics (3) Concepts and scientific principles essential to efficient human movement; proper application of biomechanical principles to fundamental movements and selected complex motor tasks. Open one time, but credit earned one time only. A-F only. Pre: 353, and either PHYS 100, PHYS 151, or PHYS 170; or consent. DB

KRS 470 Fitness for Life (3) Physical education teachers will gain knowledge and experience necessary to plan, implement, and evaluate Fitness for Life curriculum (grades 6-12). Information is guided by national and state standards. Includes lecture, lab, and teaching experiences. Repeatable one time, A-F only. (Once a year)

KRS 471 K-12 Teaching Methods in Health (3) Experiences in developing standards-based, interactive learning opportunities to teach personal and social skills for health in schools. Focus on National and Hawai’i Health Standards, priority risk/content areas, the Coordinated School Health Program, and responsibilities and competencies. A-F only.

KRS 472 Learning Communities (3) Theory, basic research, interactive processes, and methodologies of the cooperative learning process known as ‘Tribes’. Will develop participants’ abilities to foster and facilitate learning communities in a variety of settings. Repeatable one time. (Summer only)

KRS 473 Ethnic Groups and Education in Hawai’i (3) Identity and learning within and among Hawai’i’s ethnic groups; study of prejudice and inter-ethnic hostilities as these impact education and Hawai’i (3) Identity and learning within and among Hawai’i’s ethnic groups; study of prejudice and inter-ethnic hostilities as these impact education and Hawai’i Health Content Standards, priority social skills for health in schools. Focus on National and Hawai’i Health Standards, priority risk/content areas, the Coordinated School Health Program, and responsibilities and competencies. A-F only.

KRS 474 Introduction to Statistics in Kinesiology (3) Basic elements for: descriptive statistics, probability, inference, regression, and correlation analysis. A-F only. Repeatable one time.

KRS 476 Motor Learning and Performance (3) Basic consideration is kinesthesis, motor ability, fatigue, developmental factors, practice, motivation in relation to motor learning and human performance. Repeatable one time. Pre: EDEP 311 or consent.

KRS 477 Motor Development and Learning (4) (3 Lec, 1-1 hr Lab) Motor development through the lifespan with emphasis on fundamental principles and patterns. Factors affecting motor learning performance as a function of memory, practice, knowledge of performance, and motivation are incorporated. Required field experience. Repeatable one time. A-F only.

KRS 478 Adapted Physical Activity in Early Childhood (3) Concepts of developmentally appropriate practice, importance of movement in overall development, and design of physical activity sessions and environments for young children with and without disabilities are covered. A-F only. Pre: consent.


KRS 491 Introduction to Research in KRS (3) Research methods in the study of physical activity, typical data analysis, or other research techniques, and reporting research results. Repeatable one time.

KRS 482 Commercial Recreation (3) Overview of leisure services and trends in commercial, private and employee recreation, and resort and recreational tourism. The social, economic, and environmental significance is examined. Pre: 428 or consent.

KRS 483 Recreation Planning and Maintenance (3) Examination of social, economic, and environmental factors of recreation and tourism development. Emphasis on recreation program design, participation, decision making, and land use. Repeatable one time. Pre: 238 and 329; or consent.

KRS 484 Promoting a Drug-Free Lifestyle (3) Standards-based planning, teaching, and assessment to promote a total drug-free lifestyle, DB


KRS 487 Exercise Assessment and Conditioning Lab (4) Designed to provide knowledge of laboratory techniques and procedures for aerobic and anaerobic fitness assessment, interpretation of aerobic and anaerobic testing results, and individual exercise program/prescription. A-F only. Pre: 480 and EDEP 429, or consent. (Fall only)

KRS 488 Practicum in Health and Exercise Science (4) Application of various testing procedures on human subjects with different physical capacities. Repeatable one time. Pre: 152, 353, 354, and 465; or consent.

KRS 489 Program Design in Strength Training and Conditioning (3) Designed to provide theoretical and practical experience in supervision of a strength training center. Concepts in program design, exercise techniques, organization, testing, evaluation, methods of strength development, facility design and special populations. Kinesiology & Rehabilitation Science, Health/Exercise Science and Lifestyle Management, and Physical Education majors only. A-F only. Pre: 152, 153, 353, 354, 354L, and 465; or consent.

KRS 494 Introduction to Athletic Training Clinic (3) Introduction to the undergraduate Athletic Training Education Program and the Clinical Education Plan. Students will be required to document all requirements and demonstrate proficiency in basic clinical skills. Repeatable one time. A-F only. Pre: 352, 354, PHYL 302/L, and 50 hours observation experience in an athletic training clinic. Co-requisite: 415. (Once a year)

KRS 491 AT Practicum I (3) Introductory-level supervised clinical experiences in the practice of athletic training. This practicum is required for the KRS entry-level Graduate Athletic Training Education Program. A-F only.

KRS 492 AT Practicum II (3) Introductory-level supervised experiences within the profession of athletic training. This practicum is required for the KRS entry-level Graduate Athletic Training Education Program. A-F only.

Key to symbols & abbreviations: see the first page of this section.
KRS 493 Athletic Training Practicum III (3) Advanced-level supervised experiences within the profession of athletic training. This practicum is a requirement for entry to the KRS Master’s Athletic Training Program. A-F only.

KRS 494 Athletic Training Practicum IV (3) (5 2-hr Practicum) Advanced-level supervised experiences within the profession of athletic training. This practicum is a requirement for entry to the KRS Master’s Athletic Training Program. A-F only.

KRS 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.

KRS 600 Counseling in the Schools (3) History, philosophy, and organization of school counseling programs. Counselor role and functions, legal and ethical issues, counseling theories, current methodology and resources. (Meets EdD common core elective.) Pre: consent.

KRS 603 Lower Extremity, Thorax, and Abdomen (3) Human gross anatomy dissection of the lower extremity, head, neck, spine, thorax, and abdomen. Pre: preceptor, with emphasis on muscles, function, innervation, and vascular supply. Repeatable one time. Enrolled in DRB or KRS graduate programs (including Biomed Sci-Anat/RehabSci & Phys Majors) or consent. A-F only. (Spring only) (Cross-listed as ANAT 603)

KRS 604 Upper Extremity, Head, Neck, and Spine (3) Human gross anatomy dissection of the upper extremity, head, neck, spine, thorax, and abdomen. Emphasis is placed on neurology, innervation, and vascular supply. Repeatable one time. Enrolled in DRB or KRS graduate programs (including Biomed Sci-Anat/RehabSci & Phys Majors) or consent. A-F only. (Fall only) (Cross-listed as ANAT 604)

KRS 605 Human Growth, Development- Life Span (3) Life span perspective on psychological, social, and physical development. Major theories and related research on human development; applications in policy planning and service delivery in counseling. Pre: consent.


KRS 607 Scientific Principles of Physical Conditioning (3) Application of physiological principles to physical conditioning and athletic performance. Pre: graduate standing or consent.

KRS 608 Muscular Strength and Power Development (3) Interpretation of scientific principles of muscular strength and power development. Examination of muscular adaptations to increased and decreased use. Pre: graduate standing or consent.

KRS 609 Athletic Training, Clinical Experience I (3) (1 Sem, 3 1-hr Practicum) A practical field experience in which the student will perform the duties and responsibilities of athletic training student. A practical field experience in athletic training will be required. A-F only. Pre: Consent.

KRS 610 Athletic Training, Clinical Experience II (3) (1 Sem, 5 3-hr Practicum) Practicum in which the student will perform the duties and responsibilities of an athletic training student. A practical field experience in athletic training will be required. A-F only. Pre: 490 or consent. Pre-requisite: 615B and 617.

KRS 611 Athletic Training, Clinical Experience III (3) (1 Sem, 5 3-hr Practicum) Practicum in which the student will perform the duties and responsibilities of a second year graduate athletic training student. A practical field experience in athletic training will be required. A-F only. Pre: 611 or consent.

KRS 612 Athletic Training, Clinical Experience IV (3) (1 Sem, 5 3-hr Practicum) Practicum in which the student will perform the duties and responsibilities of a second year graduate athletic training student. A practical field experience in athletic training will be required. A-F only. Pre: 611 or consent.

KRS 613 Athletic Training Clinical Practicum (V) (1 Sem, 5 4-hr Practicum) Advanced clinical practicum in which the BOC certified or certification-eligible graduate student experiences an enhancement of athletic training knowledge and comprehension of athletic training skills. Repeatable up to 10 credits. A-F only. Pre: consent.

KRS 614 Athletic Training Research Practicum (V) (1 Sem, 5 4-hr Practicum) Advanced research practicum in which the BOC certified or certification-eligible graduate student deepens their understanding and enhances their critical thinking abilities in order to contribute to the advancement of the discipline and the athletic training profession. Repeatable up to 10 credits. Pre: consent.

KRS 615 (Alpha) Clinical Examination of Pathology (3) (2 Lec, 1 3-hr Lab) Examination, care and treatment of musculoskeletal, neurological, and neuromuscular conditions and pathology; (B) lower extremity; (U) upper extremity. EL-GATEP majors only. Graduation students only. A-F only. Pre: 490 for (B); 615B and 615(U), or consent for (H); 615B or consent for (U). Co-requisite: 609 and 617 for (B); 490 and 611 for (H); 610 and 618 for (U).

KRS 616 Advanced Orthopedic Assessment (3) (2 Lec, 1 3-hr Lab) Advanced knowledge and skills of athletic training as they are specifically applied to the understanding and rehabilitation of sport-related injuries. (e.g. epidemiology, legal, ethical concerns, sports psychology, pharm, drug abuse, health issues) Pre: ANAT 604 or consent.

KRS 617 Therapeutic Interventions: Modalities (3) (5 Lec, 1 5-hr Lab) The physiology principles and operational procedures and operational procedures of contemporary Therapeutic modalities as they relate to the care and treatment of athletic injuries. Pre: consent. Co-requisite: 609 and 615B.

KRS 618 Therapeutic Exercise-Rehabilitative Exercise (3) (3 Lec, 1 3-hr Lab) Concepts and principles of comprehensive rehabilitation programs. (e.g. therapeutic goals and objectives, exercise selection, methods of evaluation and recording progress, progression and return to competition criteria, and the physiological effects of tissue trauma and inactivity.) Pre: consent. Co-requisite: 610 and 615U.

KRS 619 General Medical Conditions in Sports Medicine (3) An examination/examination of general medical conditions and sports medicine, including pathology, care and treatment. Pre: PHYL 301, PHYL 302 or consent. Major restriction: KRS Athletic Training.

KRS 620 Seminar in Athletic Training (1) Designed to provide analytical skills and practical experience relative to research as it applies to sports related injuries. Repeatable unlimited times. Pre: consent.

KRS 621 Advanced Therapeutic Exercise (3) Advanced concepts and evidence-based principles of rehabilitation programs. Enhancement of previously learned therapeutic exercise techniques and integration of therapeutic modalities and therapeutic exercise, including objective and functional goal setting and evaluation for appropriate progression and expedited return to activity. KRS majors only. Pre: 617 and 618 or basic therapeutic exercise and therapeutic modalities courses, or consent.

KRS 622 Athletic Training Capstone Experience (3) Capstone culminating experience preparing the student for the computer-based BOC Exam and for a career in athletic training. Follows the students’ didactic and clinical preparation in the 12 competencies, based on BOC guidelines. Repeatable two times. Pre: consent. Pre-requisite: 612. (Spring only)

KRS 623 Administration in Kinesiology (3) Current problems, trends, and strategies in the administration of athletic training, physical education, recreation, sport and fitness programs in school and non-school settings. Repeatable one time. Pre: consent. (Cross-listed as EDEA 623)

KRS 625 Introduction to Community Counseling (3) Philosophy, organization, and function of community service agencies, programs, and institutions as related to professional work in counseling. Pre: consent.

KRS 626 Introduction to Practicum (3) Pre-practicum training for supervised experiences in school, community, and human service organizations. Focus on the counseling relationship. Includes a specialty observation-participation field experience.

KRS 627 Career Development and Vocational Counseling (3) Theory and practice in career development and vocational counseling with individuals and groups; utilization of educational, vocational, and social resources in career counseling. Pre: consent.

KRS 628 Research and Evaluation in Rehabilitation (3) Framework for evaluating basic statistics, methodology, and evaluation of research in rehabilitation and related fields. Students will analyze research, conceptualize research, and apply research to practice. Pre: consent.

KRS 629 Counseling: Group Theory and Practice (3) Theories and techniques of group counseling and guidance as preparation for practicum and internship. Application in school, college, rehabilitation, and community settings. Pre: 626 or 683, and 606, and consent.

KRS 630 Tests and Inventories in Guidance (3) Tests and inventories for the assessment of aptitudes, achievement, and interests. Applications to educational, instructional, and career guidance. Pre: consent.

KRS 631 Problems of School Adjustment (3) Principles of behavior affecting interpersonal relationships in school with emphasis on application to actual situations. Pre: consent.

KRS 632 Theory and Assessment of Intelligence (3) Theory and supervised experience in individual intelligence testing, psychological report writing; psychometric and social issues in intelligence testing. Pre: 630 and consent.


KRS 634 Inclusive Physical Activity (3) Advanced knowledge on issues of socio-cultural, learning styles, diversity, and exceptionalities, and how these influence instruction, engagement, and behavior in physical activity settings across the lifespan. A-F only. Pre: consent. (Cross-listed as SPED 634)

KRS 635 Elementary Physical Education (3) Content and pedagogy for teaching preschool/elementary physical education. Students will learn appropriate content and pedagogy for learners in elementary school. Basic teaching and field experiences are included. A-F only. Pre: consent. (Once a year)

KRS 636 Theory and Assessment of Personality (3) Personality testing; practice in administration and use of personality assessment; examination of psychometric and social issues. Pre: 630 and consent.

KRS 637 Cross-Cultural Counseling (3) Significance of cultural factors in counseling relationships, delivery of counseling services in multicultural settings with attention to Hawai‘i. Emphasis on process of cultural learning and services for counselor roles and functions. Pre: consent.

KRS 640 Seminar in Physical Activity (3) Trends, research, and problems related to physical activity across the lifespan. A variety of topics and contexts will be addressed. Enrollments in the same program only. A-F only. Pre: consent. (Spring only)

KRS 641 Seminar: Health/Exercise Science (V) Review of selected current literature in exercise/sport science and leisure studies. Practice of presentation in group setting. Repeatable with different content. Pre: 673 (or concurrent) or EDCS 632 (or concurrent).

KRS 643 Secondary Physical Education (3) Detailed examination of effective physical education curriculum and instruction in middle and high schools. Repeatable one time. A-F only. Pre: consent.
KRS 646 American College Student (3) Study of psychosocial characteristics of American college students and college environment, from viewpoint of student personnel work. Pre: consent. (Cross-listed as EDE 646)

KRS 660 Marriage, Family, and Child Counseling (3) Theory/practice of marriage, family, and child counseling, including major model in clinical practice; supervised counseling project by each student. Liability insurance required. Pre: 629 or consent.

KRS 663 Biomechanics of Human Motion (3) Principles of motion as applied to sport and physical rehabilitation. Introduction to the technology used in the analysis of motion. Pre: consent.

KRS 664 Physiology of Exercise (3) Physiological basis of modern training methods and sports science. Repeatable one time. Pre: consent.

KRS 665 Metabolic Analysis (3) Theory and practice of metabolic analysis of human performance examining each of the power systems used in energy production during exercise and how to use this information to prescribe exercise programs. Pre: consent.

KRS 666 Advanced Fitness Assessment and Exercise Prescription (3) Provides knowledge of field and laboratory techniques and procedures for aerobic and anaerobic fitness assessment, interpretation of results, and prescription techniques. Repeatable one time. Pre: consent.

KRS 667 Body Composition and Weight Management (3) Analysis of the theory and practice used in the assessment of body composition and human physique. Includes strategies for implementing changes in body composition. Pre: consent.

KRS 670 Consultation: Theory and Practice (3) Consultation in educational, business, health, community, and human services agencies. Pre: consent.

KRS 673 Research Methods in KRS (3) The use of experimental designs/models in physical education research with emphasis on understanding the concepts, applications, and interpretations of statistical analysis. Pre: consent.

KRS 674 Assessment in Physical Activity (3) Overview of assessment purposes, types, practices, and procedures used in physical education for those with disabilities. Frequently used motor assessments and practices in collection of data will be specifically addressed. Pre: consent. (Spring only)

KRS 675 Transdisciplinary Approach to Teaching the Motor Domain (3) Highlights a transdisciplinary approach for effectively teaching students with disabilities in the motor domain. Important characteristics and components of this approach will be shared. Strategies for its implementation will also be addressed. Pre: consent.

KRS 680 Principles and Practice of Rehabilitation Counseling (3) Theory, practice, and procedures used in rehabilitation counseling; review of history and influence of legislation on vocational rehabilitation; current issues, developments, with emphasis on local situation. Pre: consent.

KRS 682 Medical and Psychosocial Aspects of Disability (3) Functional implications of chronic illnesses and disabilities on psychological, social and vocational areas of an individual's life. Case studies and presentations will stimulate discussion and help students to apply theoretical information into practical everyday context. Pre: 680 and consent.

KRS 683 Case Management in Rehabilitation (3) Knowledge and skills required in case and caseload management in public as well as private sector rehabilitation. Focus on professional/client relationship, interviewing process, decision-making, goal-setting, recording/documentation, time management, and other tasks. Pre: 680 and consent.


KRS 685 Ethical Issues for the Helping Profession (3) Developing ethical reasoning capabilities for resolution of ethical dilemmas likely to be encountered in counseling, psychology, and other helping practices (e.g., consultation, rehabilitation, counseling, medical/legal, substance abuse, marriage and family counseling, and the like). A-F only. Pre: 606 and consent.

KRS 686 Vocational Evaluation and Assessment in Rehabilitation (3) Theories, principles, and techniques of vocational evaluation and assessment. Assessment methods and processes as they relate to vocational choice and adjustment of special groups. Pre: 681 and consent.

KRS 687 Assistive Technology in Rehabilitation Counseling (3) Study of application of assistive technologies to enhance the lives of people with disabilities. Case studies provide the vehicle in guiding students toward integration of available information in the reality of actual situations. Emphasis on the importance of using a consumer-centered approach in providing assistive technology services. A-F only. Pre: 681 and consent.


KRS 695 Promoting Physical Activity (3) Overview of the theoretical and applied study of physical activity epidemiology. Content includes benefits, factors that influence, levels, valid instruments to assess, and programs to promote physical activity. (Fall only) (Cross-listed as PH 695)

KRS 699 Directed Reading and/or Research (V) Individual study and/or research. Repeatable unlimited times. Pre: consent of instructor and department chair.


KRS 703 (Alpha) Practicum in Counseling (V) Supervised clinical experience in counseling and guidance activities at an approved site, including a weekly class meeting. Provides practical application of formal academic training: (C) community service; (E) elementary; (H) secondary; (R) rehabilitation; (U) college. Each alpha is repeatable three times. Pre: 626 or 683, and consent.


KRS 733 (Alpha) Internship I (V) Supervised post-practicum experience in counseling and guidance activities at an approved site, including a weekly class meeting. Provides practical application of formal academic training: (C) community service; (E) elementary; (H) secondary; (R) rehabilitation; (U) college. Each alpha is repeatable three times. Pre: 703 and consent.

KRS 734 (Alpha) Internship II (V) Supervised post-internship I experience in counseling and guidance activities at an approved site, including a weekly class meeting. Provides practical application of formal academic training: (C) community service; (E) elementary; (H) secondary; (R) rehabilitation; (U) college. Each alpha is repeatable three times. A-F only. Pre: 733 and consent.

KRS 741 Seminar in School Counseling (3) In-depth study of professional concerns in school counseling. A-F only. Pre: 703 (E or H) and consent.

KRS 751 Seminar in Community Counseling (3) In-depth study of professional concerns in community counseling. A-F only. Pre: 703C and consent.

KRS 761 Seminar in College Counseling (3) In-depth study of professional concerns in college counseling. A-F only. Pre: consent.

KRS 775 Doctoral Seminar and Research I in Kinesiology (3) Will expose the PhD student to the basic nature of behavioral and somatic science research. Learning experiences will consist of journal review, laboratory/field techniques, and subject or data collector experiences as directed by faculty mentors. Repeatable one time. KRS majors only. CR/NC only. Pre: consent.

KRS 776 Doctoral Seminar and Research II in Kinesiology (3) Provide the PhD student the opportunity to be involved in research, under the direction of the faculty mentor, as the assistant project director and as the project director for pilot studies. Student will gain expertise in these roles with close supervision by the faculty mentor. Repeatable one time. KRS majors only. CR/NC only. Pre: 775 or consent.

KRS 777 Doctoral Seminar and Research III in Kinesiology (3) Provide the PhD student the opportunity to assume the role of director of a research project under the supervision of the faculty mentor. The research project will represent a piece of the ongoing line of research of the faculty mentor. Responsibilities will be comparable of a project director of research funded by a research grant. Repeatable three times or up to 12 credits. KRS majors only. CR/NC only. Pre: 776 or consent.

KRS 778 Doctoral Seminar IV in Kinesiology (3) Designed to enable PhD students to gain a perspective of the discipline, both historically and philosophically, prepare them for the issues they may face in the real world, particularly higher education and help them initiate their dissertation. CR/NC only. KRS majors only. Pre: consent.

KRS 781 Seminar in Rehabilitation Counseling (V) In-depth study of professional concerns in rehabilitation counseling. A-F only. Pre: 703R and consent.

Korean (KOR)

KOR 101 Introductory Korean (4) Listening, speaking, reading, writing, grammar. Meets one hour, four times a week, plus lab work. Pre: consent. HSL

KOR 102 Elementary Korean (4) Continuation of 101. Pre: 101 or consent. HSL

KOR 105 Accelerated Elementary Korean (8) Content of KOR 101 and 102 covered in one intensive course. Four 2-hour sessions per week, Monday-Thursday, plus daily lab work. Pre: placement test or consent. (Fall only) HSL

KOR 111 Elementary Conversational Korean I (3) Development of basic skills (listening, speaking and grammar) of spoken Korean, with application to some familiar everyday topics. Pre: consent. HSL

KOR 112 Elementary Conversational Korean II (3) Continuation of 111. Pre: 101 or 111, or consent. HSL

KOR 201 Intermediate Korean (4) Continuation of 101 and 102. Meets one hour, four times a week, plus lab work. Pre: 102 or placement test or consent. HSL

KOR 202 Intermediate Korean (4) Continuation of 201. Pre: 201 or placement test or consent. HSL

KOR 205 Accelerated Intermediate Korean (8) Content of KOR 201 and 202 covered in one intensive course. Four 2-hour sessions per week, Monday-Thursday, plus daily lab work. Pre: 102, 105, 112, placement test; or consent. (Fall only) HSL

KOR 211 Intermediate Conversational Korean I (3) Further development of listening and speaking skills. The student is expected to be able to comprehend and participate in conversations on paragraph level. Pre: 102 or 112, or consent. HSL

KOR 212 Intermediate Conversational Korean II (3) Continuation of 211. Pre: 201 or 211, or consent. HSL

KOR 301 Third-Level Korean (3) Continuation of 201 and 202. Major emphasis on comprehension of modern written Korean. Chinese characters. Pre: 202 or consent. (Fall only)
KOR 302 Third-Level Korean (3) Continuation of 301. Pre: 301 or consent. (Spring only)

KOR 307 Readings in Chinese Characters I (3) Training intermediate and advanced learners of Chinese to master the reading, writing, and usage of some 250 basic Chinese characters as they are used in a wide variety of Chinese reading texts. Pre: 202 or consent.

KOR 308 Readings in Chinese Characters II (3) Continuation of 307, covering an additional 250 basic Chinese characters. Pre: 307 or consent.

KOR 380 Korean Proficiency Through TV Drama (3) Students who try to elevate proficiency level to Advanced by challenging themselves to understand culturally and situationally-rich text, i.e., Korean dialogues. Increasing Korean proficiency within context is the main objective of the course. Pre: consent.

KOR 399 Directed Third-Level Reading (V) For those who need special assistance, e.g., in reading texts in area of specialization or at a pace more rapid than those of standard courses. Offered if staff available. CR/NC only. Repeatable three times. Pre: consent.

KOR 401 Fourth-Level Korean (3) Continuation of 302. Pre: 302 or consent. (Fall only)

KOR 402 Fourth-Level Korean (3) Continuation of 401. Pre: 401 or consent. (Spring only)

KOR 403 High-Advanced Korean I (3) Continuation of 402. Emphasis on highest level of listening, speaking, reading and writing, with application to Korean culture, using authentic materials. Pre: 402 or consent. (Fall only)

KOR 404 High-Advanced Korean II (3) Continuation of 403. Emphasis on highest level of listening, speaking, reading and writing, with application to Korean culture using authentic materials. Pre: 402 or consent.

KOR 420 Korean Composition (3) Training in modern structural and stylistic techniques: writing on designated themes. Repeatable one time. Pre: 402 or consent.

KOR 421 Media Analysis in Korean I (3) Focus on analyzing, comparing, and evaluating current media materials in South Korea to develop professional language skills and to deepen knowledge and understanding of contemporary Korean society. A-F only. Pre: 402 or consent. (One a year)

KOR 422 Media Analysis in Korean II (3) Focus on analyzing, comparing, and evaluating current media materials in South Korea and North Korea to develop professional language skills and to deepen knowledge and understanding of contemporary North Korea. A-F only. Pre: 402 or consent.

KOR 425 Selected Readings in Korean (3) Selected readings in various disciplines. Repeatable one time with consent. Pre: 402 or consent.

KOR 451 Structure of Korean (3) Introduction to phonology, morphology, and history. Pre: 302 or consent.

KOR 452 Structure of Korean (3) Introduction to syntax and semantics. Pre: 302 or consent.

KOR 470 Language and Culture of Korea (3) Relation of Korean language to literature, history, philosophy, social structure, values, and interpersonal relationships; social and regional varieties. Pre: 402 or consent. DH

KOR 480 Korean Oral Proficiency Through Film (3) Study of Korean culture through films to elevate students’ Korean proficiency level and improve their knowledge of Korea. Emphasis on writing instruction. Requires a minimum of 16 pages of graded writing. Pre: 402 or consent.

KOR 485 (Alpha) Korean for Career Professionals (V) Combined lecture-conference on functional command of various discourse-level features in Korean in domain of (B) economics; (C) political science; (D) computer science; (E) engineering; (F) travel industry management; (G) business; (H) law; (I) medicine; (J) nursing and public health; and (K) others. Exclusively in Korean. Repeatable one time. Pre: 485 or 623 or consent. (Once a year)

KOR 486 (Alpha) Korean for Academic Purposes (V) Content taught in Korean by professional school Korean faculty and flagship instructor in domain of (B) economics; (C) political science; (D) computer science; (E) engineering; (F) travel industry management; (G) business; (H) law; (I) medicine; (J) nursing and public health; and (K) others. Repeatable one time. Pre: 482 or consent.

KOR 493 Introduction to Traditional Korean Literature (3) Critical readings from earliest times and presentations that emphasize genre, style, and context. Pre: 402 or consent. DL

KOR 494 Introduction to Modern Korean Literature (3) Critical readings of 20th-century materials and presentations that emphasize context and the development of styles over a period of study. DL

KOR 495 Internship Program (V) Supervised internship with Korean professional hosts on O’ahu. Students will also attend an on-campus preparatory and follow-up language class. A-F only. Pre: 486, diagnostic assessment procedures; or consent.

KOR 496 Korean Abroad (V) Supervised internship with Korean professional hosts in Korea. Students also undergo a one-week training module designed to prepare them to maximize the benefits of the overseas internship. Repeatable up to 3 times. Pre: 495, diagnostic assessment procedures; or consent.

KOR 499 Directed Fourth-Level Reading (V) For those who need special assistance, e.g., in reading texts in area of specialization or at a pace more rapid than those of standard courses. Primarily for graduate students from other departments. CR/NC only. Repeatable three times. Pre: consent of department chair.

KOR 613 (Alpha) Korean Verse (3) Intensive and analytical reading of selected works of Korean lyric and didactic verse (e.g., hyangga, changga, hanbi, sijo, kasa, free form): (M) modern; (T) traditional. Pre: 494 or consent for (T). Pre: 494 or consent for (M). (Once a year)

KOR 614 (Alpha) Korean Narrative (3) Intensive and analytical reading of selected works of Korean narrative (e.g., myth, p’ansori, shaman song, essay, biography, fiction): (M) modern; (T) traditional. Pre: 494 or consent for (M); or consent for (T). Pre: 615 (Alpha) Korean Drama (3) Intensive and analytical reading of selected materials in Korean performing arts (e.g., spectacle, farce play, mask dance, staged narratives, theatrical drama): (M) modern; (T) traditional. Pre: 494 or consent for (M); or 495 or consent for (T). Pre: 494 or consent for (M).

KOR 621 Media Research in Korean (3) Focuses on searching, analyzing, and evaluating media data for research in areas of student specializations. Students are required to write short analysis papers and a final research paper. Pre: diagnostic assessment procedures for (equivalent to ILR Level 2) or consent (Once a year)

KOR 622 Comparative Studies of Contemporary South and North Korean Language (3) Comparing and analyzing language data to investigate language heterogeneity problems, its causes, and importance of comparative studies in NK/SK language differences; differences in language policy, grammar, and vocabulary, pronunciation, and discourse style. Pre: 621 or consent.

KOR 623 Interdisciplinary Research in Korean (3) Combined lecture-discussion on preparing students to be able to conduct interdisciplinary research in Korean. Require advanced-level Korean proficiency. Pre: diagnostic assessment procedures (equivalent to ILR Level 2) or consent. (Once a year)

KOR 624 (Alpha) Analysis of Korean Academic Discourse (3) Co-taught by Korean faculty of professional schools and Korean instruction in domain of (B) ecological science; (D) computer science; (E) travel industry management; (G) business; (H) law; (I) medicine; (J) nursing and public health; and (K) others. Exclusively in Korean. Repeatable one time. Pre: 485 or 623 or consent. (Once a year)

KOR 631 History and Dialects of Korean Language (3) Survey of various hypotheses on the genetic relationship of Korean; evolution of Korean from the 15th century to the present; Korean dialects. Pre: 451 and 452, or consent.


KOR 633 Korean Syntax and Semantics (3) Review of theoretical problems in Korean syntax and semantics; different approaches; and contributions of Korean linguistic study to syntactic and semantic theory. Pre: 452 or consent.

KOR 634 Korean Sociolinguistics (3) Variations in form and use depending on sociocultural factors. Role of language in politics, mass media, group identity, bilingualism, and intercultural communication. Pre: 470 or consent.

KOR 635 Pedagogy of Teaching Korean as a Second Language (3) Identification and analysis of major problems in Korean language learning, teaching methods and materials development by examining theoretical issues and conducting classroom research; practical techniques of teaching and testing skills in listening, speaking, writing and culture. Pre: 451 and 452, or consent. (Once a year)

KOR 636 Korean Conversation Analysis (3) Theoretical framework of discourse analysis and review of Korean conversational discourse structures, such as turn-taking, sequence organization, and discourse matrixes. Pre: 451 and 452, or consent. (Alt. years: fall)

KOR 640 Literary Translation of Korean (3) The art and craft of translating traditional and modern Korean literary works into English. Repeatable four times. Pre: 493 and 494, or consent.

KOR 645 Research in Korean Language Acquisition (3) Integrating the conceptual aspects of statistics and scientific analysis of human language behavior into the study of Korean as a foreign language. Pre: 635 or consent.

KOR 652 Major Authors in Modern Korean Literature (3) Advanced study of major Korean fiction writers from the 1910s to the present with emphasis on critical reading of their lives and writings. Pre: arrive at informed appraisal of their contribution to modern Korean literature. Repeatable one time. Pre: 494 or consent.

KOR 655 Practicum: Teaching Korean as a Second Language (3) Designed for graduate students pursuing Korean language teaching as a profession, while developing practical teaching skills through class observation, action research and discussion under supervision. Pre: 635 or consent.

KOR 664 Topics and Issues in Modern Korean Literature (3) Intensive study of selected topics and issues in modern/contemporary Korean fiction, focusing on texts that problematize critical socio-cultural issues in the evolving contexts of modern Korean intellectual history. Repeatable one time. Pre: 494 or consent.

KOR 699 Directed Research (V) Repeatable unlimited times. CR/NC only. Pre: consent.

KOR 720 Research Seminar in Korean Literature (3) Advanced study of an author, school, period, genre, or problem leading to a research paper. Repeatable one time. Pre: consent.

KOR 730 Research Seminar in Korean Language (3) Advanced study in history and dialects, phonology and morphology, syntax and semantics, sociolinguistics, or pedagogy, leading to a research paper. Repeatable one time. Pre: consent.

Languages and Literatures of Europe and the Americas (LEA)

College of Languages, Linguistics and Literature

Courses given in English do not require knowledge of a foreign language.

CLASSES

LEA 122 Greek and Roman Mythology (3) Principals of Greek and Roman literature. DL

Key to symbols & abbreviations: see the first page of this section.
LLEA 123 Greek and Latin Elements in English (3) Important roots, prefixes, and suffixes for building a literary vocabulary.

LLEA 124 Greek and Latin Elements in Scientific Terminology (3) Important roots, prefixes, and suffixes for building a scientific vocabulary.

LLEA 151 World Myth to 1500 C.E. (3) Reading and analysis of myths and legends from around the globe, from before the dawn of writing to 1500 C.E. Students will learn to interpret traditional stories from several theoretical and cross-cultural perspectives. A-F only. FGA

LLEA 301 Biblical Hebrew I (3) Orthography and structure of Biblical Hebrew, history and development of Hebrew as the sacred language of Judaism, overview of religious and historical development of the Hebrew Bible. Pre: sophomore standing or consent. (Fall only) (Cross-listed as REL 301)

LLEA 302 Biblical Hebrew II (3) Reading of selected prose passages from the Hebrew Bible; analysis of literary forms, paying special attention to stories which have played an important role in the development of the Abrahamic religions. Minimum C-grade required for prerequisites. Pre: 301/REL 301. (Spring only) (Cross-listed as REL 302)

LLEA 305 Ancient Egyptian Hieroglyphics I (3) Decipherment of hieroglyphs and reading of Middle Egyptian literary texts. (Fall only)

LLEA 306 Ancient Egyptian Hieroglyphics II (3) Decipherment of hieroglyphs and reading of Middle Egyptian literary texts, including Tale of Sinuhe. Pre: 305 or permission of instructor. (Spring only)

LLEA 327 Ancient Greek Literature in Translation (3) Major writers: emphasis on Homer, drama, and philosophy. Pre: sophomore standing or higher or consent. DL

LLEA 328 Ancient Roman Literature in Translation (3) Major writers: emphasis on Vergil, satire, and novel. Pre: Sophomore standing or higher or consent. DL

FRENCH
LLEA 237 French Film (3) Study of French film history and techniques. A-F only. Pre: freshman standing. DH

LLEA 264 French Culture for Americans (3) Study of the shared cultural and historical foundations of France and the U.S. both past and present. A-F only. DH

LLEA 335 French Literature Since 1800 (3) Rapid reading in translation; lectures, discussions, reports. Pre: junior standing or one course in French language or literature. DL

LLEA 336 African French Literature (3) Black African literature in French in 20th century. Major themes of nationality, national political unity, colonialism, traditional culture. Pre: junior standing or one course in French language or literature. DL

LLEA 339 French Literature as Film (3) Exploration of the distinction between literature and film as artistic genres as well as study of major works of literature in respect to the present, from the Middle Ages through the 20th century. Pre: sophomore standing. DL

LLEA 364 Survey of French Civilizations (3) A historical survey of the development of French and Francophone cultures. The course is interdisciplinary, dealing with politics, music, art, other forms of cultural expression, and daily life. DH

GERMAN
LLEA 320 German Cinema (3) Study of German film history, theory, analysis, and film style. Repeatable one time or take GER 320 one time for different topics. 6 cr. limit on GER/LLEA 320 courses. Sophomore standing only. DH

LLEA 340 Classical German Literature (3) Readings in the major works of Lessing, Goethe, Schiller. Philosophical and aesthetic views of leading writers of the Enlightenment, Storm and Stress, and classical periods. DL

LLEA 342 German Fascism and Propaganda (3) Lecture/discussion. Study of German Fascism and propaganda in German literature, art, and film. Sophomore standing or higher. A-F only. DH

ITALIAN
LLEA 236 Italian Film (3) Study of Italian film history and technique. A-F only. DH

LLEA 334 Italian Literature as Film (3) Exploration of the distinction between literature and film as artistic genres as well as study of major works of literature in respect to the present, from the Middle Ages through the 20th century. A-F only. Pre: sophomore standing or consent. DL

RUSSIAN
LLEA 350 Russian Short Story (3) Origin and development of the short story in Russia. Pre: sophomore standing or consent. DL

LLEA 351 19th-Century Russian Literature (3) Survey in English of major writers from Pushkin through Chlenov. Pre: sophomore standing or consent. DL

LLEA 352 Russian Literature 1900–1950 (3) Survey in English of major Russian writers from 1900–1950. Pre: sophomore standing or consent. DL

LLEA 355 Russian Art and Culture (3) Aspects of culture (literature, film, theater, music, art, etc.) in 20th century Russian society. Pre: sophomore standing or consent. DH

LLEA 354 Russian Literature Today (3) Survey in English of contemporary Russian literature and authors for perspective of reality and poetic representation. Pre: sophomore standing or consent. DH

LLEA 355 Russian Film (3) A study of Russian film from the 1920’s to the present. Pre: sophomore standing or consent. DH

GENERAL AND GRADUATE COURSES
LLEA 270 Freaks and Monsters (3) Monsters, freaks and otherness in literature, film, history and medicine. Suitable for non-literature majors. DL

LLEA 371 Europeans in the Pacific (3) European presence in the Pacific, in relation to literature, art, culture, civilization. Not applicable to language requirement. (Section 1 taught in Hawaiian. Pre: HAW 202 or consent. Section 2 taught in English.) DL

LLEA 376 Alpha World History of World Cinema (3) Film as a reflection of the 20th century’s social, cultural and political upheaval. (A) World Cinema (1890s to 1950s); (B) World Cinema (1960s to present). Pre: sophomore standing or consent. DH

LLEA 390 Teaching Practicum in Large Lecture Courses (1) Supervised undergraduate teaching practicum in LLL courses. Repeatable two times. CR/NC only. Pre: completion of course in which practicum will be done and consent of instructor, no waiver.

LLEA 416 German Literature, Culture and Film: 1900 to Present (3) Study of German literature, culture and film, 1989 to present. Credit cannot be earned for both 416 and GER 416. Sophomore standing or higher. DH

LLEA 470 Freaks and Monsters 2: The Ethics of Otherness (3) An interdisciplinary examination of corporeal Otherness. Unusual real and fictional bodies from fairground history, art, anatomy, literature, natural history and ethnology. Discussion of the moral, medical, philosophical and aesthetic dilemmas of spectacular difference. Pre: 270 or consent. DH

LLEA 471 (Alpha) Fantasy and the Fantastic (3) Cross-cultural study of fantasy and the fantastic in short stories, fairy tales, films and novels from Europe and the Americas in English translation. Discussion of illusion, identity, time, the future, the bizarre and major concepts in fantasy literature. (B) fairies, devils and fantasy; (C) the fantastic, the strange and science fiction. Repeatable one time in different alphabas. Pre: 270 or consent. DL

LLEA 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent. DH

LLEA 630 Seminar in Research Methods (3) Study of basic research methods and tools, including technology. Print and electronic source materials. Information literacy. A-F only. Pre: graduate standing or consent.

LLEA 671 Western Literature and Cultures in the Pacific (3) Impact of and reaction to Western writings and cultural influences in the Pacific as represented in texts from the 16th century to the present. Pre: graduate standing or consent of department chair.

LLEA 680 Topics in Literature (3) Study in English of a topic, period, or genre; aesthetic considerations common to European literatures; (B) the modern novel; (C) European literature as a path to self-knowledge; (D) Middle Ages; (E) introduction to literary theory. A-F only. Pre: consent of department chair.

LLEA 681 Topics in Language (3) Study in English of topics, periods, etc., in the languages taught in the department: (B) comparison of Romance languages; (C) interpersonal communication; (D) social perspectives. Repeatable two times for different alphas (up to 9 credits). Pre: graduate standing or consent.

LLEA 682 Masterpieces of Medieval Welsh Literature (3) Key prose and poetry underlying the Arthurian tradition in Europe. Language instruction leading to reading knowledge of medieval Welsh. Pre: consent.

LLEA 699 Directed Research (V) Repeatable unlimited times. Pre: consent of department chair.

LLEA 700 Thesis Research (V) Repeatable unlimited times.

LANGUAGE COURSES
LLEA 199 Directed Language Study (V) Study in European languages not taught regularly, depending on demand and staff. Pre: consent of department chair.

LLEA 399 Directed Reading (V) Pre: limited to senior majors with a minimum cumulative GPA of 2.7 or a minimum GPA of 3.0 in major, and consent of department chair.

LLEA 499 Directed Reading and Research (V) Independent study of approved reading and research with faculty supervision. Repeatable two times. A-F only. Pre: consent and departmental approval.

Languages, Literatures, and Literature (LLL)

LLL 150 Literature and Social Change (3) Study of works produced in Africa, the Americas, Asia, Europe, and Oceania from prehistory to the present, showing how the spoken and the written word reflect and effect social change. A-F only. FGC

LLL 451 Learning Communities Online and Practical Aspects of Teaching (1) Online course for pre- or in-service teachers of world languages. Topics include online learning environments, creating online communities, curriculum and lesson planning, and assessment. Maximum enrollment of 20. Not open to those who have taken 455. A-F only.

LLL 452 Social Aspects of Learning and Technology in the Classroom (1) Online course for pre- or in-service teachers of world languages. Topics include processes of language teaching and learning, learner characteristics and technology in the classroom. Maximum enrollment of 20. Not open to those who have taken 455, Pre: 455 (or concurrent). A-F only. LLL 455 Second Language Acquisition Theory and Methods (1) Online course for pre- or in-service teachers of world languages. Topics include terminology of language teaching and learning and overview of historical and current approaches. Maximum enrollment of 20. Not open to those who have taken 455. Pre: 455 (or concurrent). A-F only.

LLL 455 Second Language Teaching and Learning Methodology (3) Online course for pre- or in-service teachers of world languages. Combines content from 451, 452 and 453. Maximum enrollment...
Latin (LATN)
College of Languages, Linguistics and Literature
A grade of C- or better in the prerequisite course is required for continuation.

LATN 101 Elementary Latin (3) Grammar and vocabulary, with reading of simple Latin. Pre: CEE 101. HSL

LATN 102 Elementary Latin (3) Continuation of 101. Pre: 101. HSL

LATN 201 Intermediate Latin (3) Development of reading and translation skills. Emphasis on prose. Pre: 102 or equivalent. HSL

LATN 202 Intermediate Latin (3) Continuation of 201: emphasis on poetry. Pre: 201. HSL

LATN 303 Roman Historians (3) Selections from Tacitus, Sallust, and others. Pre: 201 and 202, or consent. DL

LATN 304 Roman Epic (3) Selections from Virgil, Ovid, and others. Pre: 201 and 202, or consent. DL

LATN 325 Roman Philosophy (3) Selections from Lucretius, Cicero, and Seneca. Pre: 201 and 202, or consent. DL

LATN 332 Roman Drama (3) Selections from Plautus, Terence, and Seneca. Pre: 201 and 202, or consent. DL

LATN 333 Roman Lyric (3) Selections from Catullus, Horace, and others. Pre: 201 and 202, or consent. DL

LATN 338 Roman Novel (3) Selections from Petronius and Apuleius. Pre: 201 and 202, or consent. DL

LATN 345 Roman Satire (3) Selections from Horace and Juvenal. Pre: 201 and 202, or consent. DL

LATN 490 Seminar in Roman Studies (3) Study of an author or phase in Roman studies. Repeatable unlimited times with consent. Pre: any two 300-level LATN courses, or consent.

Latin American and Iberian Studies (LAIS)

College of Languages, Linguistics and Literature

LAIS 360 Alpha (Alpha) Studies in Culture (3) Politics of culture and representation. Will consider issues, traditions, movements, texts, and cultural icons for their significance for national and regional identity formation, intercultural relations and global flows of images, people, and capital. (B) Latin America; (C) Iberian Peninsula. Repeatable one time. Pre: sophomore standing or consent. DL

LAIS 362 Latin American Literature (3) Reading and discussion of classic works of Spanish literature. Pre: sophomore standing or consent. DL

LAIS 363 Latin American Literature (3) Reading and discussion of classic works of Latin American literature. Pre: sophomore standing or consent. DL

LAIS 365 U.S. Latino Culture and Literature (3) The culture and history of U.S. Latinos through an analysis of their literature and arts and their socio-political relationship to the U.S. mainstream culture. Pre: sophomore standing or consent. DH

LAIS 365 Spanish Film (3) A chronological survey of films from Spain, from the Silent Era to the present. Conceptually, a cultural history of Spain in the 20th century, as seen through films. Pre: sophomore standing or consent. DH

LAIS 366 Latin American Film (3) A chronological survey of films from Latin America, from the Silent Era to the present. Conceptually, a cultural history of Latin America in the 20th century, as seen through films. Pre: sophomore standing or consent. DH

LAIS 368 Households in Cross-Cultural Perspective (3) Study of cross-cultural patterns in household and community level organizations in Latin America and elsewhere. Topics will include gender relations, kinship structures, political economy, impacts of colonialism, modernization, and globalization on households. Sophomore standing or higher. (Cross-listed as ANTH 368) DS

LAIS 372 Alpha Indigenous Peoples of Latin America (3) Survey of the history and culture of the indigenous peoples of Latin America through a study of their literature, texts and practices. (B) Mesoamerica; (C) Andean South America. Repeatable one time for different alphas. Pre: sophomore standing or consent. (Cross-listed as ANTH 372 (Alpha)) DH

LAIS 380 Studies in Culture: Portugal and Brazil (3) Surveys the cultures of the Portuguese-speaking world from pre-Lusitanian times, including civilizations with Africa, Asia, the U.S., and Hawai‘i. Pre: sophomore standing or consent. DH

LAIS 468 Colonial Latin American History (3) Pre-Columbian civilizations: Spanish and Portuguese colonization; political, economic, social and religious evolution to 1810. Independent. Pre: 360 or consent. (Cross-listed as HIST 478) DH

LAIS 478 New World Rituals and Ideologies (3) Study of cross-cultural patterns in ritual behaviors and creationism of African, indigenous, and Iberian ideological frameworks in the Americas. Topics may include syncretic religions (voodoo, candomble), Andean Christianity, spiritual conquest, conceptions of death, etc. Sophomore standing or higher. Minimum C- required grade for prerequisite. Pre: 360, or consent. (Fall only) (Cross-listed as ANTH 478 and REL 478) DH

LAIS 495 Topics in Latin American and Iberian Studies (3) Combined lecture-discussion on selected themes-political, social, cultural-in Latin American topics. Topics pre-announced. Repeatable one time. Pre: 360 B or C, or consent. (Once a year)

LAIS 683 Hispanic Cultural Studies (3) Critical overview of contemporary theories on Hispanic culture, issues of identity, hybridity, and pluralism will be discussed from a hemispheric perspective. A-F only. Pre: consent.

Law (LAW)

School of Law

LAW 501 Organizing for Social Change (V) Examines conditions that lead people to become active, self-governing agents. Covered are strategies and tactics of organizers, history of social change movements, anti-subordination theories of justice and organizing case studies. Repeatable up to four credits. A-F only. (Once a year)

LAW 503 Historic Preservation Law (V) Introduction to the protection of cultural, archaeological, and historical resources with emphasis on key federal and state laws. (Once a year)

LAW 504 Lawyering Fundamentals I (V) Legal practice is the first part of the training for a lawyer. Pre: 518. Pre: consent.

LAW 505 Lawyering Fundamentals II (V) A practical program that trains students to practice law, read and write legal analysis and scholarship, and reach their maximum potential as a legal thinker and writer.

LAW 506 Negotiation and Alternative Dispute Resolution (V) Lawyers negotiate settlements in all their cases. They must be a "hands-on," skill-building approach to the newest ideas, as well as centuries-old techniques, about the skill lawyers will use most often in their private practice - negotiation. The class also examines the rapidly developing field of alternative dispute resolution (ADR), including mediation, facilitation, arbitration, and court-annexed ADR. (Cross-listed as CEE 614)


LAW 508 Negotiation and Alternative Dispute Resolution (V) Lawyers negotiate settlements in almost all their cases. They must be "hands-on," skill-building approach to the newest ideas, as well as centuries-old techniques, about the skill lawyers will use most often in their private practice - negotiation. The class also examines the rapidly developing field of alternative dispute resolution (ADR), including mediation, facilitation, arbitration, and court-annexed ADR. (Cross-listed as CEE 614)

LAW 509 Contracts I (V) Law of private agreements and contracts. Analysis and application of common law doctrines and, where applicable, relevant provisions of the Uniform Commercial Code. Examines the bases of promissory liability, contract formation, mutual assent, defenses to enforcement, executory obligations, and the rights and interests of third parties. Attention will be paid throughout the course to the role of contracts in a market society and the conflicting interests of certainty, freedom of contract and fairness.

Key to symbols & abbreviations: see the first page of this section.

LAW 510 Contracts II (V) Continuation of 509.

LAW 511 Professional Responsibility (V) Introductory consideration of selected topics relating to functions, structure, and responsibilities of the legal profession and its future role in society. CR/NC only.

LAW 512 Reparations and Reconciliation (V) Seminar addresses a legally and socially important contemporary issue-healing present-day wounds of historic injustice. Considers how to repair the continuing social damage of injustice. (Once a year)

LAW 513 Criminal Law (V) Examination of substantive rules, enforcement procedures, and rationales of criminal law in the U.S.

LAW 514 Children, Parents and the Law (V) Exploration of fundamental concepts of law relating to children, ethical issues, and the role of lawyers in assisting children, and how the child's rights and obligations are balanced with those of parents and family

LAW 515 Business Reorganization in Bankruptcy (V) Examination of the rights and remedies available to a failing business and its creditors when the business seeks to reorganize its business and financial affairs under chapter 11 of the federal bankruptcy code. The course is structured around a case which tracks a single business through restructuring and emphasizes the practical and strategic aspects of lawyering. Recommended: 562.

LAW 516 Civil Procedure I (V) Study of pre-trial, trial, and appellate procedures in the federal and Hawai‘i courts.

LAW 517 Civil Procedure II (V) Continuation of 516. Pre: 516.

LAW 518 Real Property I (V) Basic course in property ownership, development, regulation. Emphasis on theory.

LAW 519 Real Property II (V) Contract of sale, equitable conversion, deed. Pre: 518.

LAW 520 Advanced Legal Studies (V) Faculty members or visiting scholars present selected topics focusing upon subject areas in their area of specialty or expertise. (B) business law; (C) Constitutional law; (D) criminal law; (E) critical legal; (F) education law; (G) health law; (H) intellectual property law; (I) practice of law; (J) public interest law; (K) topic 10; (M) topic 11; (N) topic 12; (O) topic 13; (P) topic 14; (Q) topic 15; (R) topic 16; (S) topic 17; (T) topic 18; (V) topic 19; (W) topic 20. Alphas B-Q, repeatable three times, up to 12 credits; alphas R-W repeatable three times, up to 16 credits.

LAW 521 Law, Aging and Medicine (V) Introduction to basic legal issues at the intersection of law, aging and medicine. Addresses various issues confronting elderly; issues confronting the general population including health care financing, decision-making, and bioethics.

LAW 522 Torts (V) Torts cover the statutory and common law of negligence, causation, defenses, damages, strict liability, intentional torts and tort policy and reform, with emphasis on national and Hawai‘i law. (Spring only)

LAW 523 Law and Psychology (V) Approaches psychology as a problem solving tool that can facilitate legal analysis. Covers a variety of areas including jury decision-making, research methodology, social cognition, culture, and behavioral economics, among others. (Once a year)

LAW 524 Advanced Torts and Insurance Law (V) Advanced study of several areas of tort law and an introduction to insurance law and policy. This course is of considerable interest to those interested in civil litigation and personal injury law. Recent important developments in Hawai‘i tort and insurance law will be included.

LAW 525 Legislation and Statutory Interpretation (V) The interrelationship between the legislative and judicial branches of government is explored through a review of Federal and Hawai‘i law-making processes, direct democracy, legislative drafting, and theories of the legislative process and statutory interpretation.
LAW 526 Group Directed Study (V) Designed for maximum flexibility, this course allows a professor to work with a small number of students on a reading/discussion project of mutual interest. Repeatable up to 15 credits. Pre-conference and consent.

LAW 527 Federal Indian Law (V) Examines Federal Indian Law, including fundamental concepts and the historical evolution of legal doctrines. Considers the implications of Native Hawaiian sovereignty within the framework of Federal Indian Law. (Once a year)

LAW 529 Peacemaking (V) Introduction for lawyers to peace studies and analysis of contemporary armed conflict, pacifism, just war doctrine, historical causes by war, theories of how to peace and conditions for lasting peace. (Once a year)

LAW 530 Second-Year Seminar (V) Seminar required for spring semester of all second-year law students. Substantial paper required. Topics announced in previous fall semester. Placement by lottery.

LAW 531 Business Associations (V) After a brief survey of agency, partnerships, and other forms of business organization, the course will cover the fundamentals of corporations, and securities regulation, including disregarding the corporate entity, management and control, closely held corporations, merger, liability under the federal securities laws, takeovers, public registration, exemptions, and derivative suits.

LAW 532 Health Law (V) Introduction to medical jurisprudence, medical malpractice, informed consent, health care decisions, medical ethics, the health care industry, managed care, financing health care, and the role of government in health care.

LAW 533 Constitutional Law I (V) Introduction to judicial function in constitutional cases, jurisdiction of the U.S. Supreme Court, and discretionary barriers to judicial review.

LAW 534 Constitutional Law II (V) Advanced course in constitutional law with special emphasis on rights secured by the First, Fifth, and Fourteenth Amendments to the Constitution of the U.S. Pre: 533.

LAW 535 Intellectual Property (V) A study of the law relating to property rights resulting from intellectual effort, including patents, copyright, trademarks, and trade secrets.

LAW 536 Current Civil Rights Issues (V) Uses the current U.S. Supreme Court docket to engage in an in-depth study of civil and statutory rights claims in the area of civil rights and civil liberties. Pre: 533. (Once a year)

LAW 537 Constitutional Law: Critical Race Perspectives (V) Seminar considers the impact of racism on American law and ways that individuals trained as lawyers might combat racism in our culture and within the institutions in which we live and work. Pre: 533. (Once a year)

LAW 538 Conflict of Laws (V) Problems respecting the law applicable in transactions or to relationships with elements in more than one state.

LAW 539 Equitable Remedies (V) Examines both practical and theoretical underpinnings of equitable remedies. Frequently, compensatory damages cannot adequately protect clients or provide them with the relief they need. Topics include temporary restraining orders, preliminary and permanent injunctions, restitution and unjust enrichment, specific performance, and equitable defenses such as unclean hands, laches, and estoppel. Practice issues concerning appeal, jury trials, and the relationship of equity to law are also explored. Repeatable unlimited times.

LAW 540 Contract Drafting (V) Hands-on workshop class in drafting contracts, agreement, and similar documents for commercial/business purposes. LAW 540 may be repeated once for credit. Pre: 509 and 510.

LAW 541 Criminal Procedure (V) Issues of free press and fair trial, illegal search and seizure, arrest and confession, speedy trial, double jeopardy are covered through student interactions as defense or prosecution attorneys and as judges.

LAW 542 Advanced Civil Procedure (V) Addresses various aspects of complex litigation and recent criticisms of the civil litigation system itself. Theoretical in emphasis. Developed from two directions: (1) a study of substantive material concerning adversarial dispute resolution, the substance/procedure dichotomy and value-identification; and (2) in-depth analysis of procedural aspects of complex cases with special focus on new procedural rules aimed at reducing waste and delay.

LAW 543 Evidence (V) “Objection, your Honor!” This course examines the rules of evidence that govern trials in both federal and Hawai‘i courts and will focus on such topics as hearsay, witness examination, impeachment, physical and demonstrative evidence, expert testimony, writings, relevance, judicial notice, and presumptions.

LAW 544 Race, Culture, and Law (V) U.S. cases and legal theory emphasizing law in the social construction of racial categories, shifts in race-based anti-discrimination law, and the interaction of culture and law in judicial decision-making.

LAW 545 Licensing Intellectual Property (V) Theory and practice of the law relating to the transfer of rights in other intangibles, examined together with end user license agreements and the structure and negotiation of upstream licensing mechanisms. Repeatable up to three credits. Pre: 535 or departmental approval. (Once a year)

LAW 546 (Alpha) Intercession-J Term (V) January term provides students the opportunity to explore contemporary legal topics with national and international experts. (B) alternative dispute resolution; (C) rule of law; (D) law practice; (E) diversity; (F) access to justice; (G) public law; (H) legal theory; (I) legal practice; (J) trials. Repeatable five times. (Once a year)

LAW 547 Gender and Law (V) Examines the ways in which international law and domestic legal systems address the rights of women, gender identity, and gender identity. Uses comparative approach with an emphasis on case studies from the Asia-Pacific region. (Cross-listed as WS 647)

LAW 548 Immigration Law (V) Introduction to U.S. Immigration and Nationality Law: a brief overview of historical development of immigration law; analysis of exclusion and deportation grounds and remedies; the study of both immigrant and nonimmigrant status, various immigration proceedings, entry into the United States, citizenship issues, and legal issues related to citizenship and naturalization.

LAW 549 Admiralty Law (V) Introduction to U.S. maritime law and admiralty jurisdiction emphasizing development of basic legal rights and laws of seamen and maritime workers.

LAW 550 Corporate and Partnership Taxation (V) Examines tax aspects of formation, operation, reorganization, and liquidation of partnerships and corporations.

LAW 552 Trusts and Estates (V) Deals primarily with the disposition of family wealth including: the making of wills; the creation, enforcement, administration, and termination of trusts; and intestate succession.

LAW 554 Secured Transactions (V) Introduction to Uniform Commercial Code, particularly Article 9—reducing risk of nonpayment by obtaining an interest in borrowers’ property.

LAW 555 (Alpha) Externship Law (V) Legal work for judges and attorney supervisors in public agencies, private law firms, and the legislature. (H) Hawai‘i; (P) Pacific. Repeatable three times for (H). CR/NC only. Pre: consent.

LAW 557 Negotiable Instruments, Payment Systems and Checks (V) A study of the Uniform Commercial Code provisions that deal with commercial paper (Article 3), bank collections and deposits (Article 4), funds transfers (Article 4A) and letters of credit (Article 5), as well as material on alternative payment systems, including credit cards, electronic fund transfers and related federal law.

LAW 558 Corporate Finance (V) Provides an understanding of the basic financial concepts and tools for lawyers with transactional practices, preferred stock, common stock and convertible securities. Pre: 531 (or departmental approval).

LAW 559 Labor Law I (V) Regulation of union-management relations under state and federal laws.

LAW 560 High Growth Entrepreneurship (V) An interdisciplinary (JD-MBA) course examining legal, business, and technology issues related to building high growth companies. Develop company feasibility reports and skills necessary to advise or build high growth businesses. Recommended: 531. Law students only. (Once a year) (Cross-listed as ME 680)

LAW 561 Administrative Law (V) Procedure and remedies for resolving controversies between citizens and government officials exercising administrative power.

LAW 562 Debtors’ and Creditors’ Rights (V) Bankruptcy laws and rules, laws of liens, receivership, and liquidation.

LAW 563 Trial Practice (V) Examination of sequential stages of pre-trial and trial practice in a problem setting. Topics include investigation, pleadings, motions, discovery, voir dire examination, opening statements, direct and cross-examination, closing argument, selected evidentiary problems, post-trial motions, and appellate practice. Students engage in simulated exercises, and their work is critiqued. CR/NC only.

LAW 564 Pre-Trial Litigation (V) Theory and practice of civil pre-trial litigation with focus on pleading, discovery, and pre-trial motions. CR/NC only.

LAW 565 Securities Regulation (V) An introduction to American securities regulation and focuses on the registration and reporting process required of public companies as well as securities litigation. Repeatable three times. Recommended: 531.

LAW 566 Non-Profit Organizations Workshop (V) Examines the meaning, scope, and role of non-profit organizations in contemporary society, and focuses on selected non-tax laws and primary tax issues relevant to non-profits. Law students only. Recommended: 531 and 567. (Once a year)

LAW 567 Federal Income Taxation (V) Surveys the entire federal income tax system, with emphasis on those areas of greatest importance to non-tax lawyers. Students are expected to develop proficiency in the use of the Internal Revenue Code and Treasury Regulations.

LAW 568 Family Law (V) Legal forms of—and responses to—formation, maintenance, and dissolution of the family. Marriage, annulment, divorce, alimony, separation agreements, child custody and adoption, parentage.

LAW 569 Sales (V) In-depth study of Uniform Commercial Code, Article 2—domestic sales of goods, including warranties, manner, time and place of performance, buyers’ and sellers’ remedies for breach of contract, limitations of freedom of contract.

LAW 571 Federal Courts (V) An examination of the jurisdiction and law-making powers of the federal courts, standing issues, appellate jurisdiction of the Supreme Court, federal-question and diversity-of-citizenship jurisdiction, alternative dispute resolution, immunity from suit in the federal courts possessed by governmental entities and officers, intervention by federal courts in state proceedings, and choice of law in federal courts. Emphasis on relevant Federal Rules of Civil Procedure. Pre: 533 (or concurrent).

LAW 572 International Protection of Human Rights (V) The growing body of international human rights law, including international law and role of non-governmental organizations.

LAW 573 Jurisprudence (V) Relationships between the concepts of law and morality with views of legal and moral philosophers.

LAW 574 State and Local Government Law and Finance (V) City, town, county, district government: administrative organization; regulatory.

Key to symbols & abbreviations: see the first page of this section.
powers; police power; local governmental taxation; relationship between local, state, and federal government.

LAW 576 Directed Study and Research (V) Individual research and writing under the direction of faculty.

LAW 579 Legal Research (V) Provides a theoretical understanding of the process of law making and developing and implementing a research plan. LAW majors only.

LAW 580 Land Use Management and Control (V) Survey course on land use management. (Cross-listed as PLAN 680)

LAW 583 Real Estate Development and Financing (V) Federal and state laws in the practice of real estate development and financing law. Condominiums, security, subdivision, consumer protection, and mortgage areas.

LAW 584 Civil Rights (V) Focuses on the civil rights of Americans and introduces alternative remedies and procedures for securing these rights.

LAW 589 Labor and Employment Law (V) Employment law, statutory rights affecting the employment relation, and alternative contract provisions to secure the parties’ intentions. Focus on the practical application of labor and employment law. Materials relating to the unemployment employment relationship, emphasis on laws relating to the collective bargaining process, and possibilities as to issues and topics. To issues and topics. CR/NC only.

LAW 590 (Alpha) Workshops and Clinics (V) (B) prosecution clinic; (C) defense clinic; (D) elder law clinic; (E) environmental law clinic; (G) estate planning workshop; (J) Native Hawaiian rights clinic; (K) family law clinic; (L) entrepreneurship and small business clinic; (M) mediation clinic; (N) lawyer student skills workshop; (P) mediation workshop; (Q) immigration clinic; (R) child welfare clinic; (S) Hawai’i innocence Project I; (T) Hawai’i innocence Project II; (U) medical legal partnership; (W) advanced elder law clinic (S). Repeatable one time for (K), (L), and (J); repeatable two times for (W). LAW majors only for (R), (S), (T), (U), and (W). CR/NC and letter grade option for (J); CR/NC only for (N), (P), (Q), (R), and (W). Pre: 543 for (C); 529 or 561 or LAW 582 for (E); 568 or consent for (J); 548 for (Q); 590D for (W), Co-requisite: 543 for (B). (Once a year for (K)) (Alt. years for (U))

LAW 591 Government Contracts Law (V) A primer on statutory, regulatory, and decisional laws that shape the government procurement process; covers contract relationships between private contractors and federal, state, and local governments; examines the federal acquisition process, bids and proposals, and contract award controversies before judicial and administrative forums; reviews socio-economic contracting provisions and programs and Qui Tam litigation.

LAW 595 Internet Law and Policy (V) A primer on the impact of the development and use of new technologies on global business and social culture. E-commerce, telecommunications, information technology, government regulations, and social policy have all been brought together by the use of the internet. The revolution of the medium of the internet has required legal practitioners to reassess the applicability of current laws and policies that protect and govern members of the global community. Explores the legal implications of the new global economy, copyright law in the workplace, e-commerce, privacy, security, trademarks, domain names, tort liability, criminal activity, regulation in cyberspace, speech, and social and ethical issues.

LAW 599 (Alpha) Independent Study (V) Designed for students not participating in an international exchange program, visiting student program, or independent study while enrolled at UH Mānoa. Student must obtain departmental approval prior to registering. CR/NC only.

Law-Environmental Law (LWEV)

School of Law

LWEV 503 Wildlife and Natural Resources Law (V) Seminar covering federal and Hawai‘i laws that govern the management of wildlife resources, with a particular focus on wildlife conflicts arising in Hawai‘i.

LWEV 504 Conservation Transactions (V) Real estate transactions are an important and growing conservation strategy; examines land transactions within the environment of conservation. (Once a year)

LWEV 512 Environmental Compliance and Regulated Industries (V) In depth study of the federal and state environmental laws that impact modern businesses and industries, and exploration of the compliance issues that arise under the statutes, regulations, and case law.

LWEV 527 (Alpha) Topics in Environmental Law (V) Study of contemporary topics in environmental law to change periodically as to issues and topics. (B) advanced environmental law; (C) regulatory; (D) legislation; (E) policy; (F) judicial. Repeatable six times.

LWEV 528 International Environmental Law (V) Study of the international regulation of activities and processes used to prevent environmental degradation and to preserve resources of environmental value. Pre: LWPA 585 (or concurrent).

LWEV 529 Environmental Litigation Seminar (2) Seminar on the techniques, law, and strategy involved in federal and state court environmental litigation.

LWEV 530 Climate Change Law and Policy (V) Climate change is a core challenge that will influence law and policy well into the future. Will study climate change science, legislation, law and policy at state, national, and international levels. (Once a year)

LWEV 540 Hazardous Waste Law (V) Examination of federal statutes, regulatory and case law, and Hawai‘i counterparts. Policies behind hazardous waste laws and their impact on individuals, community, and businesses.

LWEV 582 Environmental Law (V) Basic statutory law and policy questions and problems concerning the environment. Focus on federal Hawai‘i issues.

LWEV 588 Legal Aspects of Water Resources and Control (V) Legal aspects of water and water rights with focus on Hawai‘i.

LWEV 592 Domestic Ocean and Coastal Law (V) Examination of the history of U.S. and Hawai‘i’s use-sea law; comprehensive coverage of modern issues concerning including special Hawaiian problems. Repeatable one time.

LWEV 593 International Ocean Law (V) Examination of the history of international ocean law, including comprehensive coverage of modern problems and issues concerning the laws of the sea.

Law-Journal and Team Credits (LWT)

School of Law

LWTJ 536 (Alpha) Moot Court Team (V) An honors program for students who prepare for and compete in national advocacy. Travel/registration fees required. (B) Black Law Students Association; (C) client counseling; (D) Hispanic Bar Association; (E) environmental law; (H) Native American; (J) Jessup international; (K) international environmental law; (M) intellectual property; (N) labor; (O) other. CR/NC only. Pre: selection by competition.

LWTJ 545 Law Review (V) Students selected for the Law Review editorial board have responsibility for editorial research, writing, and production of the Law Review published by the School of Law. Repeatable four times. CR/NC only.

LWTJ 546 Asian-Pacific Law Journal (V) Students selected for the Asian-Pacific Law and Policy Journal editorial board have writing, researching, editorial and production responsibility for publication of the journal. Repeatable four times. CR/NC only.

Key to symbols & abbreviations: see the first page of this section.

Law-Legal Writing (LWLW)

School of Law

LWLW 530 Law Thesis (V) Intensive writing that satisfies the law school’s upper division writing requirement and results in advanced law paper of publishable quality, extending over two consecutive semesters of study. Repeatable one time, up to 4 credits. LAW majors only.

LWLW 537 Law Teaching Seminar I (V) Interdisciplinary seminar uses LP I assignments and additional readings to discover and deliver the theoretical and practical underpinnings of substantive law assignments and the methodology used to teach them. Instructor approval required. Repeatable up to eight credits.

LWLW 538 Law Teaching Seminar II (V) Interdisciplinary seminar uses LP II assignments and additional readings to discover and deliver the theoretical and practical underpinnings of appellate advocacy and negotiation the methodologies used to teach them. Instructor approval required. Repeatable one time. (Spring only)

LWLW 539 Legal Casenote Seminar I (V) Study of principles and practices of teaching legal discourse one-to-one, transferring materials from composition theory and linguistics into practical papers and methods to assist students to research and write legal documents. Instructor approval required. Repeatable one time. (Fall only)

LWLW 540 Legal Composition Seminar II (V) Study of principles and practices of teaching scholarly legal discourse and appellate advocacy one-to-one, transferring composition theory and linguistics into individualized methods make the legal writing process efficient and the product effective. Instructor approval required. Repeatable one time. (Spring only)

Law-LLM Master of Law (LWLW)

School of Law

LWLW 570 Introduction to American Law (V) General introduction to the fundamental principles and distinctive aspects of the American legal system and its institutions. Pre: L.L.M. students only.

LWLW 580 U.S. Legal Research and Writing (V) Introduction to the basic principles of American legal research and writing. Students review techniques of case and statutory analysis and learn to write a professional legal memorandum and client opinion letters. LAW majors only.

Law-Pacific and Asian Law (LWP)

School of Law

LWP 506 International and Foreign Law Research (V) Global issues play a significant role in the 21st century practice of law. Introduces students to legal information resources and methods for engaging in international, comparative, and foreign law research.

LWP 514 Law and Society in Japan (V) An extended historical review of the foundations of Japanese law in society; Japan’s adoption and adaptation of Chinese legal doctrines, continental European legal structures and ideas, and American influences. Consideration of the structure of contemporary law in Japan: a look at the various players in the legal system, some important legal doctrines, and the real-world operation of Japan’s laws today.

LWP 553 Asian Pacific Insolvency Law (V) Comparison of corporate insolvency law of selected Asian and Pacific island countries, with a focus on recently enacted laws and the cases that have followed the 1997 Asian Financial Crisis. Law students only. Recommended: LAW 515, LAW 554, LAW 562. (Alt. years)

LWPA 564 International Criminal Law (3) Designed to give an understanding of international criminal law. Will review all aspects of international criminal law from substantive international crimes to criminal liability and sentencing by domestic and international tribunals. LAW majors only.

LWPA 565 Law and Society in Korea (3) Provides students with an understanding of the law, society, and legal systems in Korea. Areas of law including constitutional, administrative, and business are discussed. Emphasis on South Korea. LAW majors only.

LWPA 575 (Alpha) Topics in International Legal Studies (V) Selected topics presented by faculty members or visiting scholars, focusing upon subjects in the Pacific and Asia: (B) law and culture; (C) China; (G) gemini; (H) Philippines; (J) Japan; (K) Korea; (P) Pacific; (S) Southeast Asia. LAW majors only for (B) and (H). Repeatable six times for (C), (J), (K), (P), (S); repeatable five times, up to 18 credits for (B), (H); not repeatable for (G).

LWPA 577 Japanese Business Law (V) Focus on the legal environment facing foreign businesses operating in Japan. Includes consideration of the business environment and culture, issues relating to governmental oversight, contract consciousness, corporate law, and dispute resolution. Uses the example of an actual joint venture between an American and a Japanese company as a tool for studying the relevant issues from a practical perspective.

LWPA 578 Chinese Business Law (V) Introduction to business and commercial law in the People's Republic of China. After a brief overview of China's political and legal systems, the course will examine basic aspects of Chinese commercial law, including torts, ownership, property, and contract law, the regulation of private business, the reform of state enterprises, the development of company and securities laws, and the regulation of land-use and other property rights. More specialized topics, such as arbitration and dispute resolution, the Chinese approach to intellectual property issues, or the role of joint ventures and other foreign investment vehicles, may also be included.

LWPA 579 International Business Transactions (V) An examination of law, rules, and practices relating to transborder commercial transactions. Roughly half of the semester focuses on international sales transactions, the remaining portion focuses on domestic and multinational governance of the international business arena.

LWPA 581 Native Hawaiian Rights (V) Status and evolution of rights of Native Hawaiians to the land and its uses. Potential of utilizing native rights based on statute, custom, and use to develop new and expanded rights.

LWPA 582 (Alpha) Topics-Native Hawaiian Law (V) Specific topic areas will be the subject of focus from year to year, depending upon current developments and issues in Native Hawaiian and Indigenous law in Hawai'i, the nation, and internationally, and expertise of faculty and visiting faculty. (B) policy and governance; (C) business and economic development; (D) law and culture; (E) Indigenous peoples; (F) Indigenous environment and sustainability. Repeatable up to 9 credits. LAW students only.

LWPA 583 Legal History of Hawai'i (V) Designed to acquaint the student with the unique legal history of Hawai'i, emphasizing particular legal controversies that have shaped the law of this island state. LAW majors only.

LWPA 585 International Law (V) Evolving process of formulating rules to govern nations and peoples of the world in their attempts to solve problems recognized as international problems.

LWPA 586 Law and Society in China (V) Overview of the historical foundations of Chinese law and introduction to the present legal system in the People's Republic of China. Repeatable one time. (Cross-listed as ASAN 466)

LWPA 587 Comparative Law (V) Introduction to the civil law tradition, particularly as exemplified by the legal systems of East and Southeast Asia. After a brief review of comparative law study and the historical development of the civil law, the course will examine the structure and role of the courts, judicial process, the legal profession and constitutional law in Western Europe and in the Asian civil law countries.

LWPA 594 Pacific Islands Legal Systems (V) Study of substantive rules of one or more Pacific Islands jurisdictions, development of legal systems, relationship of legal systems to culture and tradition.

LWPA 596 International Intellectual Property (V) Primer on the World Intellectual Property Organization and the treaty it administers. Will cover the various international legislative and judicial developments in intellectual property as well as analyze international methods to harmonize several regional and national laws to protect rights in trademarks, patents, and copyrights. Selected issues: questions of territory and jurisdiction, international autriss (sic) issues, and international dispute resolution, and human rights implications of international intellectual property rights protections. Pre: LAW 553.

Law-Ulu Lehua (LWUL)

School of Law

LWUL 501 Ulu Lehua Seminar (V) Introduces foundational concepts in American legal systems. Engages students in legal analysis and techniques of legal advocacy. Repeatable one time. CR/NC only.

LWUL 502 American Legal Systems II (V) Introduces conceptual and historical foundations of systems of public and private ordering in the United States and its territories. Subjects include federalism, constitutional, statutory, separation of powers, and the common law. Repeatable one time. CR/NC only.

Learning Design and Technology (LTEC)

College of Education

LTEC 112 Technology Resources for Learning (3) Virtual and hands-on analysis of technology resources and utilization in learning.

LTEC 414 Educational Media Technology (3) Introduction to educational technology theory and practice with an emphasis on meaningful integration of technology and media into a variety of face-to-face and online learning environments for diverse populations. Pre: upper division standing.

LTEC 415 Technology for Teachers (3) Introduction to the application of educational technology in teaching and learning using strategies in design, selection, development, integration, and evaluation. Interactive delivery in the education technology classroom. A-F only. Pre: basic teaching certification.

LTEC 430 Video Technology (3) Overview of video uses in educational contexts. Includes video planning, production, and simple editing procedures, as well as selection, evaluation, and integration into learning plans. Pre: upper division standing.

LTEC 442 Computers in Education (3) Planning and implementation of computer systems and applications for effective integration into classroom settings. Emphasis is on methods and strategies for using digital technologies to enhance standards-based learning by K-12 students. Pre: upper division standing.

LTEC 448 Links to Lifelong Learning (3) Focused exploration of the application to effective teaching/learning, including finding, evaluating, using, creating, and sharing materials on the web; exploring and utilizing relevant materials; and publishing a website. Integration with copyright law and educational law. Repeatable one time. CR/NC only.

LTEC 499 Directed Activity (V) Individual work, supervised by instructor. May consist of reading, research, and/or projects. Repeatable two times, up to six credits. Pre: consent.


LTEC 501 Professional Development in Educational Technology: Technology Skills for Educators (1) Exploring technology resources needed for distance learning and classroom integration. Repeatable two times.

LTEC 502 PDET: Technology Skills for Educators (2) Exploring technology resources needed for integration into classroom instruction. Repeatable one time. CR/NC only.

LTEC 511 Professional Development Education Technology I (3) Specialized topics reflecting interests and needs of faculty in current issues of technology integration. Combined lecture, lab and discussion course. Repeatable one time. Pre: consent.

LTEC 512 Professional Development Education Technology II (3) Specialized topics reflecting interests and needs of faculty in current issues of technology integration. Combined lecture, lab and discussion course. Repeatable one time. Pre: consent.

LTEC 513 Professional Development Education Technology III (3) Specialized topics reflecting interests and needs of faculty in current issues of technology integration. Combined lecture, lab and discussion course. Repeatable one time. Pre: consent.

LTEC 514 Professional Development Education Technology IV (3) Specialized topics reflecting interests and needs of faculty in current issues of technology integration. Combined lecture, lab and discussion course. Repeatable one time. Pre: consent.

LTEC 600 Theory and Practice in Educational Technology (3) The profession of educational technology and the role of instructional designers. Theoretical and philosophical foundations underlying practice that includes systems theory, needs assessment, change theory, and relevant learning models. Practical applications of these theories to solve instructional problems in real-life settings. A-F only. Pre: LTEC major or consent.

LTEC 602 Innovations in Educational Technology (3) Innovative technological advances and new media in the field of educational technology and their application in instruction. A-F only. Pre: LTEC major or consent.

LTEC 611 Educational Technology Research and Evaluation (3) Review of existing research in media/ed technology, with activities leading to the preparation of final study or project proposal. Repeatable one time. LTEC majors only or consent. A-F only.

LTEC 612 Introduction to E-Learning (3) Introduction to principles of e-learning and their application in formal and informal instructional settings. LTEC majors only or consent. A-F only.

LTEC 613 Instructional Design and Development (3) Basic concepts and techniques of instructional design and development applied to solving instructional problems in real-life situations. A-F only. Pre: LTEC major or consent.

LTEC 620 Visual Design (3) Theory and practice involved in planning educational/instructional graphic and photographic material for print and computer-based media. LTEC majors only or consent.


LTEC 632 Developing E-Learning Environments (3) Planning, design, and development of e-learning instruction for educational and training settings. Implementation of online learning environments such as student interaction, course management, testing, and content delivery using a learning management environment and open courseware. Repeatable one time. LTEC majors only or consent. A-F only. Pre: 673 or consent.

LTEC 641 Emerging Technologies for K-12 Teaching (3) Exploration and impact of emerging technologies in K-12 classroom teaching and learning and ramifications of these technologies on
LTEC 642 Facilitating E-learning Communities (3) Exploration of tools and design considerations for effective online communication and development of learning communities. Pre: LTEC major or consent.

LTEC 643 Educational Technology in Informal Learning Environments (3) Exploring the nature, application, and use of educational technology in informal learning environments, such as museums, cultural institutions, tourist attractions, and visitor information centers. Focusing on the analysis, selection, and development of various media choices. Pre: LTEC major or consent.

LTEC 647 (Alpha) Learning with Emerging Technologies (3) Exploration and evaluation of new tools and strategies for teaching and learning. (B) mobile learning; (C) free/open software; (D) educational games and simulations; (E) critical trends. Repeatable one time per alpha. A-F only. Pre: LTEC major or consent. (Fall only for (B) and (D)) (Spring only for (C) and (E))

LTEC 651 Interactive Multimedia Production (3) The utilization and application of advanced authoring tools, combining video, animation, graphics, and sound to develop learning. Primarily for advanced LTEC students. LTEC majors only or consent.

LTEC 652 (Alpha) Authoring E-learning Environments (3) Conceptualization of instructional design and its application to the development for e-learning environments: (B) assisted instruction (CAI); (C) management instruction; (D) virtual reality; (E) animation. Repeatable two times. LTEC majors only or consent.

LTEC 654 Programming for Games and Simulations (3) Project-based exploration of the breadth of programming in the context of educational games and simulations. Pre: LTEC major or consent.

LTEC 662 Assessment and Evaluation in Educational Technology (3) Evaluation and assessment processes, sources, and instruments applicable to systematic appraisal of learning with technology. Repeatable one time. A-F only. Pre: LTEC major or consent.

LTEC 665 Research Design: Multiple Methods and Traditions (3) Explores research methods used in educational technology with a focus on developing a design for dissertation research. Emphasis is on the use of digital technologies in data collection and analysis. Repeatable one time. LTEC majors only or consent. A-F only. (Once a year)

LTEC 666 Quantitative Research in Educational Technology (3) Application of methodological and statistical concepts in a projects-based classroom framework. Formative and summative evaluation, measurements, descriptive, and inferential statistics. LTEC majors only or consent. A-F only.

LTEC 667 Qualitative Research in Educational Technology (3) Introduction to qualitative research traditions and designs. Emphasis will be on the use of digital technologies in data collection and analysis. Repeatable one time. LTEC majors only or consent. A-F only. (Once a year)

LTEC 668 Quantitative Research in Educational Technology (3) Application of methodological and statistical concepts in a projects-based classroom framework. Formative and summative evaluation, measurements, descriptive, and inferential statistics. LTEC majors only or consent. A-F only.

LTEC 672 Distance Education Technology (3) Technical and instructional considerations for developing, delivering, and evaluating distance education including voice, video, print, hypermedia and data transmissions. Pre: LTEC major or consent.

LTEC 673 Planning for Technology and Resources (3) Planning, needs assessment, and change theory applied to the development and evaluation of long-range plans and the communication of a vision for technology in education. LTEC majors only or consent.

LTEC 674 (Alpha) Technical Issues in Educational Technology (3) Applying theory of management in instructional technology—support services and delivery systems. (B) management; (C) systems; (D) networks. Pre: LTEC major or consent.

LTEC 676 Social and Ethical Issues in Educational Technology (3) Examination of social and ethical issues as they relate to technology in instructional settings. Focus on social justice and societal impact. A-F only. Pre: LTEC major or consent.

LTEC 686 Information Literacy and Learning Resources (3) Study of information literacy models. Integration of information literacy with K-12 curricular units and lessons. Evaluation of print and multimedia resources and curricular needs. Required for Librarian HDOE licensure. Pre: LTEC major or consent. (Cross-listed as EDCS 686 and LIS 686)

LTEC 687 Instructional Design and Technology Practicum (3) Practicum in instructional design development, and technology in academic and non-academic settings, under close supervision, plus class meetings in seminar format. Repeatable three times. LTEC majors only or consent. A-F only.

LTEC 689 LTEC Training and Evaluation Practicum (3) Practicum in educational technology training and evaluation in formal and informal settings, under close supervision, plus class meetings in hybrid format. Repeatable unlimited times. LTEC majors only or consent. A-F only.

LTEC 690 Seminar in Technology Leadership (3) Supervised activity in application of technology to teaching/training experiences. Repeatable three times. LTEC majors only or consent. A-F only.

LTEC 692 Practicum in E-learning (3) Practicum in e-learning in academic or non-academic settings, under close supervision by master instructors. Repeatable three times. LTEC majors only or consent. A-F only.

LTEC 699 Directed Reading and/or Research (V) Individualized reading and/or research. Repeatable for 3 credit hours maximum each time. Pre: LTEC major or consent.

LTEC 700 Thesis Research (V) Research for master's thesis. Repeatable nine times.

LTEC 701 Instructional Design Studio (3) Covers multiple instructional design models within the context of theory and studio approach to focus on facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources. LTEC majors only. Graduate students only: A-F only.

LTEC 707 Special Topics in Educational Technology (3) Issues of topical interest in educational technology. Concentrates on a topic of current interest, including the new technologies for learning and teaching, and innovative strategies for design and delivery of instruction. Repeatable unlimited times. LTEC majors only. A-F only.

LTEC 710 Seminar in Educational Technology Theory (3) Doctoral level seminar for advanced students examining the theoretical foundations of research in the learning sciences and technology. Repeatable unlimited times. A-F only. (Once a year)

LTEC 781 Technology in Qualitative Analysis (3) Advanced research methods focused on management strategies for preservation of materials in libraries and information centers. Required for Librarian HDOE licensure. Pre: consent. (Cross-listed as EDCS 686 and LIS 698)

LIS 600 Introduction to Reference and Information Services (3) Philosophy, principles, and practice of reference services in libraries, information centers and information literacy. Bibliographic control, reference research, reference interview, online searching, evaluation of bibliographic and Webographic material. Field component. MLISc degree required course.

LIS 605 Metadata Creation for Information Organization (3) Theory and practice of metadata creation for organization of information resources, cataloging code for resource description and access, Library of Congress and Library of Congress classification schemes, use of OCLC. MLISc degree required course.

LIS 606 Advanced Cataloging and Classification (3) Continues 605 with study of authority work, and further study of non-book materials cataloging, including electronic and internet resources. Extensive use is made of OCLC Connexion cataloging client. Pre: 605.

LIS 610 Foundations of the Information Professions (3) Law/ethics, history of librarianship and information sciences. LIS majors only. Pre: departmental approval. (Alt. years)

LIS 612 History of Books and Libraries (3) History of written communication; the record- ing, preservation and transmission of knowledge. Development of libraries through the mid-twentieth century as instruments of society and as centers of learning. Pre: consent. A-F only.

LIS 615 Collection Management (3) Principles and policies of collecting and managing the collection. Criteria and tools for selecting and deselecting materials. Relationships with publishers/producers. MLISc degree required course.

LIS 618 Government Documents (3) Survey of government documents at the federal, state/local and international levels in all formats. Covers methods of acquisition and organization, including depositary arrangements. Current issues of government information dissemination policies and practices discussed. Pre: 601 or consent.

LIS 619 Preservation Management (3) Introduction to preservation management. Focus on management strategies for preservation of materials in libraries and archives. Covers preservation planning, condition surveys, disaster planning, grantmanship, and basic issues relating to deterioration.

LIS 620 Conservation of Library and Archival Materials (3) In-depth exploration of the nature of library and archival materials and factors that cause deterioration. Hands-on approach provides practical experience testing, analyzing basic conservation treatments, understanding the role of conservation in preservation planning. Pre: 619 or consent.

LIS 647 Systems Analysis for Information Management (3) Overview of systems analysis; its techniques, benefits and limitations. Focus on librari-
ies and information agencies, although concepts are applicable to other settings. Structured, top-down solutions stressed throughout. Object-oriented techniques and data modeling tools are reviewed. Pre: 670.

LIS 650 Management of Libraries and Information Centers (3) Theories and principles of administration for effective management of libraries and information centers, with emphasis on planning, resource allocation, team skills, project management, assessment, leadership, outreach, and advocacy. MLISc degree required course.

LIS 652 Introduction to Archives Management (3) Study of archival principles and management theories applicable to all types of archives. Includes policy, appraisal, description, and preservation of archival materials. Pre: 670.

LIS 653 Seminar in Archival Studies (3) Theory of archival studies from historical and contemporary perspectives. Includes public administration, legislation, and relationships to other repositories. Pre: 652 or consent.

LIS 660 Information Sources and Systems in Science (3) Bibliographical structure and sources in the basic and applied sciences, including physics, chemistry, biology, agriculture, and engineering. Field component. Pre: 601 or consent.

LIS 663 Database Searching (3) Techniques and strategies for searching professional online databases and web information resources. Query formulation using controlled vocabularies, free text and specialized functions to match retrieved resources with user needs. MLISc degree required course. Pre: 601.

LIS 665 Teaching Information Technology Literacy (3) Lecture/discussion on history, theories, principles, practices and concepts of library and information literacy instruction, learning theory and user-based research methods. Examines program design, administration and evaluation. Field research component. Pre: 663.

LIS 667 Advanced Database Searching (3) Lecture with demonstrations of advanced features of online information retrieval systems and search engines, including natural language searching, citation-based searching, term mapping, similarity searching, result ranking and clustering for power search Web databases. Pre: 663.

LIS 670 Introduction to Information Science and Technology (3) Survey of topics in information science and technology. Lectures and discussions emphasize practice, problems and theory relating to information storage, retrieval and dissemination provision technology in libraries and information centers.

LIS 671 Digital Librarianship (3) Lecture with demonstrations to introduce the essential types of digital resources and the software tools for finding high quality and relevant information efficiently from digital journal archives and reference databases. Pre: 601 or 620.

LIS 672 Technology for Libraries and Information Centers (3) Survey of theories, concepts, methods and practices relating to the application of information technology to support the administration and use of information resources. Includes digital, printed and audiovisual materials. Pre: 605, 670, or consent.

LIS 674 Database Design and Creation (3) Designing and creating relational and/or directory databases from the viewpoint of information specialists and content providers. Needs analysis, file design, record content and structuring, software choice. Students implement prototype database. Pre: 670.

LIS 675 Database Content Evaluation (3) Lecture discussing and demonstrating the principles and methods of evaluating criteria in evaluating databases used by librarians and information professionals, such as database coverage, source base, currency, accuracy and quality of information. Pre: 601 or 670, or consent.

LIS 677 Human Dimension in Information Systems (3) Lecture/discussion on human element in information systems, including physical, cognitive and affective behavior in interaction with information systems. Information retrieval, human-computer interaction and cognitive science research, qualitative and quantitative research methods. Research component. Pre: 670.

LIS 678 Personalized Information Delivery (3) Study of the components of personalized information systems: information filtering systems with emphasis on modeling and representation of documents, queries, user information preferences, and user-system interaction. Topics include advanced Information Retrieval (IR) models, metadata and markup languages, query operations, thesauri based IR, acquisition of user profiles, and user/system performance evaluation. Pre: 641, 663, 670, 674, ICS 321, ICS 421 or ICS 624; or consent.

LIS 680 Seminar for Beginning School Librarians (1) Series of five seminar meetings on topics, issues for beginning school librarians. Emphasis on building skills and support networks to help entry level professionals create effective school library programs. Repeatable two times. CR/NC only.


LIS 683 Services in Libraries (3) Planning and implementing services and programming in public and school libraries. Trends, issues, networking, public relations, outreach, competencies, services for the disabled and other social groups.

LIS 684 Administration of School Library Media Centers (3) Effective management of school library media centers. Philosophy and objectives, standards, personnel, facilities, resources, budget, services, library instruction, public relations, program planning and evaluation. Required for Librarian HDOE licensure.

LIS 685 Traditional Literature and Oral Narration (3) Analysis of traditional literature including Asian and Pacific Island resources. Selection and evaluation of the charmingly emphasizing cultural values. Introduction to oral tradition, history and techniques of storytelling.

LIS 686 Information Literacy and Learning Resources (3) Study of information literacy models. Integration of technology with K-12 curriculum units and lessons. Evaluation of print and multimedia resources to meet student and curricular needs. Required for Librarian HDOE licensure. (Spring only) (Cross-listed as EDCS 686 and LTEC 686).

LIS 687 Hawaiian Studies Information Resources (3) Survey of reference and research materials in Hawaiian studies. Includes historical and contemporary works, arts, humanities, social and natural sciences, media. Covers approaches to reference service, collection building and management.

LIS 688 Pacific Islands Information Resources (3) Study of reference tools and bibliographic sources for Pacific Islands and criticism of literature found of online catalogues, databases and web sites. Focus on Melanesia, Micronesia and Polynesia (excluding Hawaii). Pre: 601 or consent.

LIS 689 Asian-American Resources for Children and Youth (3) Study of Asian-American information resources for young people, socio-historical roots, evaluation and selection, curricular and program use in a multicultural context.

LIS 690 Internship (3) Field experience in library or information agency settings with supervision of professional library information specialists. Available to classified students only. Selection based on academic advisor approval, application form, interview and possession of required competencies. Students must apply and be accepted before registration. Selection is by agency. CR/NC only. Pre: 601 and 663 (or concurrent).

LIS 693 Special Topics in Librarianship (V) Includes issues of topical interest in the profession. Concentrates on the major topic of current interest, such as library service to the aged, reprography, medical librarianship, knowledge management, art librarianship, cartography and other credits.

LIS 694 Special Topics in Information Technology (V) Includes issues of topical interest in information technology. Concentrates on one major topic of current interest, such as information transfer, networks, library information systems, artificial intelligence, applications, and local area networks.

LIS 696 Practicum School Librarianship (V) Skill development and application of academic study through observation and practice in a fieldwork program with accompanying seminar. Required for school library certification in Hawaii. Repeatable up to six credits. CR/NC only. Pre: 12 credits in LIS degree program and consent of practicum coordinator required.

LIS 699 Directed Reading and/or Research (V) Individualized program of directed reading and/or research outside the scope of regularly titled courses. Enrollment requires approval before end of previous semester, with specification of goals, work requirements, number of credits, rationale. Repeatable up to six credits.


LIS 701 Seminar in International Librarianship (3) International and comparative librarianship; professional organizations; comparative methodology; research; periodicals; international agencies; influence of literacy and social, cultural, political factors.

LIS 705 Asian Research Materials and Methods (3) Literature of Asia in Western and Asian languages; bibliography, reference tools, research methods, sources, published and archival repositories. Repeatable one time. (Cross-listed as ASAN 705)

Linguistics (LING)

LING 102 Introduction to the Study of Language (3) Non-formal introduction to language, emphasizing the everyday use of language, its relevance to contemporary issues in society, and local language issues. Content studied through lecture, readings, and writing; emphasis on writing as a grading criterion. DS

LING 103 Language and Symbolic Reasoning (3) Introduction to language as a formal symbolic system and to the techniques of analysis and reasoning that reveals its workings. A-F only.

LING 105 Language Endangerment, Globalization, and Indigenous Peoples (3) Focus on language endangerment and globalization. Students are introduced to case studies on language endangerment from around the world and throughout history. Offered through the distance-learning Unit Mastery program. A-F only. FGB

LING 120 Language as a Window to the Mind (3) Introduction to language-related phenomena, which gives insight into the organization of the human mind. Combines lecture, discussion and group projects.

LING 150 (Alpha) Language in Hawai’i and the Pacific (3) Introduction to the study of language and language-related issues, with concentration in Hawai’i and the Pacific; (B) unit mastery; (C) lecture discussion. A-F only. DS

LING 201 Language Documentation for Non-Linguists (2) Provides training in the fundamentals of language documentation for non-linguists. Repeatable two times. CR/NC only. Pre: proficiency in a lesser studied language and consent.

LING 320 General Linguistics (3) Introduction to the formal analysis of language, focusing on phonet-
ics, phonology, morphology, syntax, semantics, historical linguistics, language acquisition, and related topics. DS
LING 331 Computer Applications (3) Background: uses for machine translation, dictionary programs, speech recognition, grammar modeling, etc. Pre: 320 (or concurrent) or consent.
LING 344 Languages of the World (3) Survey of major language families: typological classification and language universals; writing systems, “contact” languages. Variety of grammatical structures illustrated by selected languages. Pre: 320 or concurrent. DS
LING 346 The Philippine Language Family (3) Introduction: phonological and grammatical systems; historical developments; emphasis on Filipino, Cebuano, and Ilocano. Pre: grade of B or better in 102 or 320 and experience with a Philippine language, or consent. DH
LING 347Pidgin and Creole Languages (3) Nature, history, structure, and geographic distribution of pidgins and creoles. Pre: 102 or concurrent. (Alt. years) (Cross-listed as IS 347)
LING 410 Articulatory Phonetics (3) Intensive training in recognition, reproduction, and recording of human speech sounds; preparation for fieldwork with unrecorded languages and for clinical work in speech pathology. DH
LING 412 Psycholinguistics (3) The mental processes involved in producing, understanding, and acquiring language. Students will conduct a small psycholinguistic experiment. Open to nonmajors. Pre: one of 102 or 320 or consent. DS
LING 414 Introduction to Linguistic Anthropology (3) Introduction to the ethnographic study of speech and language. Pre: ANTH 152 or consent. (Once a year) (Cross-listed as ANTH 414 and IS 414) DS
LING 415 Language and Gender (3) The role of language in the construction of gender and in the maintenance of the gender order. Field projects explore hypotheses about the interaction of language and gender. No previous knowledge of linguistics required. A-F only. (Cross-listed as ANTH 413) DS
LING 416 Language as a Public Concern (3) How does language serve as a proxy for larger social questions? Focuses on four main themes: language revitalization, discrimination on the basis of accent, gender miscommunication and the English Only Movement. A-F only. Pre: 102 or 320 or consent. DS
LING 420 Morphology (3) Theory of word structure; analysis of various morphological types. Pre: 320 (or concurrent) or consent. DH
LING 421 Introduction to Phonological Analysis (3) Phonological analysis and theory. Pre: 410. DH
LING 422 Introduction to Grammatical Analysis (3) Syntactic analysis and grammatical theory. Pre: 320 or concurrent. DH
LING 423 Cognitive Linguistics (3) Conceptual systems and language from a cognitive science perspective. Linguistic evidence on conceptual structure, reasoning, categorization, and understanding. Open to nonmajors. Pre: 102, 320, ICS 111, or PSY 100; or consent.
LING 430 Animal Communication (3) Investigates animal communication from the perspective of modern linguistics. Dispels common misconceptions about “talking animals” and shows how the cognitive, biological, and environmental needs and opportuni- ties of animals determine what and how they communicate. A-F only. Pre: 102 or concurrent. DS
LING 431 Computational Modeling (3) Hands-on introduction to modeling language. Focuses on con- nectionism, relating between language perception, and motor control. Requires no programming experience. Open to nonmajors. Pre: 102, 320, ICS 111, or PSY 100; or consent.
LING 441 Meaning (3) Theories of how literal and figurative language meaning is processed and meaning encoding and decoding. Open to nonma- jors. Pre: 102, 320, ICS 111, or PSY 100; or consent.
LING 445 Polynesian Language Family (3) Introduction to the language family of Hawaiian, Samoan, Tahitian, Tongan, etc.; models of migration and settlement and linguistic evidence; subgrouping and reconstruction of Proto-Polynesian; linguistic characteristics of present-day languages; language endangerment and conservation in Polynesia. Pre: 320 with a grade of B or better, or consent. DS
LING 451 Induction of Linguistic Structure (3) Phonological and grammatical structures of a previously uncodified language are determined by linguistic analysis of data obtained from speakers of the language. Pre: 102 or 320, or consent. DH
LING 470 Children’s Speech (3) Individual strategies, baby talk, language socialization, language varia- tion including multilingualism. Relation of cognitive to language development. Pre: 320. DS
LING 499 Directed Research (V) Repeatable up to 3 credits. CR/NC only. Pre: consent.
LING 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.
LING 611 Acoustic and Auditory Phonetics (3) Principles of acoustics and audition as they relate to speech sounds, use of computer-based analysis tools to investigate acoustic properties of speech. Pre: 421 or concurrent.
LING 615 The Nature of Language (3) Language as a communication system, current theories of grammar, meaning, sociolinguistics, linguistic change and comparison.
LING 617 Language Acquisition and Language Revitalization (3) Provides training relevant to the study and revitalization of heritage languages and endangered languages. Pre: 320 or equivalent.
LING 621 Phonology (3) Phonological theory and problems of analysis. Pre: 421 or concurrent. (Fall only)
LING 622 Grammar (3) Grammatical theory and problems of analysis. Pre: 422 or concurrent.
LING 623 Semantics and Pragmatics (3) Ways in which the interpretation of sentences in natural lan- guage depends upon the literal meaning of proposi- tions and their logical (semantic) and conversational (pragmatic) inferences. Pre: 422 or concurrent.
LING 630 Field Methods (3) Work with native speakers of lesser-known languages to develop tech- niques for data collection and analysis. Repeatable unlimited times. Pre: 421 and 422 and one of 621 or 622; or consent.
LING 631 Language Data Processing (3) Prepara- tion of data for computer processing; use ready-made programs; write simple language processing programs using SNOBOL4. Application to students’ research. Pre: 422, or consent.
LING 632 Laboratory and Quantitative Research Methods (3) Laboratory and quantitative methods for research on language. Introduction to hard- ware, software, research designs, and basic analysis techniques commonly used in quantitative language research. Combines lecture, laboratory work, and discussion. Pre: graduate standing.
LING 640 (Alpha) Topics in Linguistics (3) History of the discipline, schools of linguistic thought, current issues, etc. Repeatable unlimited times. (E) English linguistics; (F) phonology and phonetics; (G) general; (H) history of the discipline; (S) sociolinguistics; (X) syntax; (Y) psycholinguistics. Pre: consent.
LING 645 The Comparative Method (3) Introduc- tion to historical-comparative linguistics; attention to both Indo-European and languages with few or no written records. Pre: 421 and 422, or consent.
LING 646 The Comparative Method (3) Continuation of 645. Pre: 422 or concurrent.
LING 670 Developmental Linguistics (3) Survey of the literature in language acquisition; emphasis on relation to linguistic theory. Pre: 421 and 422, or consent.
LING 680 Introduction to Language Documenta- tion (3) Covers history, method, and theory behind language documentation, and the role of language endangerment in the field. Discussion on skills required to undertake documentation; topics may vary depending on the emphases of the instructor. Pre: 680 or concurrent.
LING 699 Directed Research (V) CR/NC only. Repeatable unlimited times. Maximum six credit hours. Pre: graduate standing and consent.
LING 700 Thesis Research (V) Repeatable up to 12 credit hours.
LING 710 Techniques of Language Documenta- tion (3) Students learn to conduct best-practice digital language documentation projects, from equip- ment purchase to data collection to data annotation to archival and presentation. Pre: 680 or consent.
LING 720 Language Typology (3) Language typology deals with how and why elements of language interact and function. Students acquire a broad overview of this grammatical make-up of lan- guages in general and understanding of Functional-Typological linguistics. Graduate students only. Pre: 320 and 422 or consent. (Alt. years)
LING 730 Advanced Laboratory Research (3) Advanced laboratory methods for research in linguistics. Specialized and/or advanced uses of hardware, software, research designs, and analysis techniques. Specific topic varies each term. Combines lecture, laboratory work and discussion. Repeatable four times. Pre: 632 or consent.
LING 750 (Alpha) Seminar (3) Reporting and discussion of current research in linguistics. (E) ethnolinguistics; (E) phonology and phonetics; (G) general; (M) semantics; (Q) language acquisition; (R) written language; (S) sociolinguistics; (X) syntax; (Y) psycholinguistics. Repeatable unlimited times. Pre: consent.
LING 770 Areal Linguistics (3) Structures of languages of various areas of the world; diffusion. Repeatable unlimited times. Pre: consent.
LING 779 Apprenticeship in Teaching Linguistics (V) Experience-based introduction to college-level teaching; doctoral students serve as student teachers to professors; responsibilities include supervised teaching and participation in planning and evalua- tion. Repeatable one time. Pre: admission to doctoral program and consent.
LING 800 Dissertation Research (V) Repeatable unlimited times.

Management (MGT)
Shidler College of Business
MGT 320 Fundamentals of Entrepreneurship (3) Covers the role of new ventures and entrepreneur- ship in the world economy, the formation, funding, marketing, structure and implementation of business ventures.
MGT 341 Behavior in Organizations (3) Contributions made by sociology, psychology, and related behavioral sciences to the understanding and prediction of human behavior in organizations. Pre: BUS 315. DS
MGT 342 Multinational Business Management (3) Introduction to the unique problems and chal- lenges in managing multinational business enter- prises. Systems approach to cross-cultural management in such multinational firms stressed. Pre: BUS 315. DS
MGT 343 Comparative Management Systems: United States and Japan (3) Similarities and differ- ences in managers, in process of management, and in relevant environmental constraints in Japan and the U.S. Pre: BUS 315.
MGT 344 Seminar in Management (3) In-depth analysis of selected current practices and trends in administration. May be repeated with change in topic. Pre: consent.
MGT 345 Entrepreneurial Ventures (3) Integrative course in entrepreneurship designed around the development of an original business concept and the completion of a comprehensive business plan for a new venture. Intended as final course for students completing entrepreneurship minor. Pre: 320 or consent.
approaches. Format (lecture/lab/discussion) will vary by topic. Repeatable unlimited times. Graduate students only. A-F only.

MBIO 800 Dissertation Research (V) Research for doctoral dissertation. Repeatable unlimited times. Graduate students only. Satisfactory only.

**Marketing (MKT)**

**MKT 311 Consumer Behavior (3)** Analysis of consumer behavior and motivation; principles of learning, personality, perception, and group influence, with emphasis upon mass communication effects. Pre: BUS 312 or consent. (Cross-listed as PSY 385) DS

**MKT 321 Marketing Research (3)** 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: BUS 310 and BUS 312, or consent. DS

**MKT 331 Marketing Communications (3)** In-depth coverage of the major communication tools used in marketing such as advertising, sales promotion, public relations and the internet. Emphasis on integrated marketing communications. Pre: BUS 312 or consent.

**MKT 332 Integrated Communication Campaigns (3)** Management of marketing communications campaigns. Includes: conducting target market and competitor research, developing creative content and media strategies, production of communication materials and completion of major real world projects. Pre: 331 and BUS 312.

**MKT 341 Retailing Management (3)** Principles, functions, and analysis of opportunities and problems in retailing: location and layout; merchandise planning; buying and selling; organizational forms and design; employee control and coordination of store activities. Pre: BUS 312 or consent.

**MKT 351 Professional Selling (3)** Emphasis on selling technique, social-psychological principles of persuasion, and interpersonal communication. Lecture, discussion, and application of relevant principles and techniques. A-F only. Pre: BUS 312 or consent.

**MKT 352 Sales and Sales Management (3)** Delves into selling and the sales management process. Through a variety of activities, students experience applying selling techniques, sales planning, recruiting and training salespeople, methods of motivating and compensating, territory management and sales team coordination. Pre: BUS 312 or consent.

**MKT 361 Seminar in Marketing (3)** Study and discussion of significant topics and problems in the field of marketing. May be repeated four times with change in topic. Pre: consent and usually senior standing.

**MKT 362 Internet Marketing (3)** Examines use of internet in the marketing of goods and services; for example new product development, marketing research, direct sales and marketing communications on the World Wide Web. Real world projects provide opportunities for application. Pre: BUS 311 and BUS 312, or consent.

**MKT 363 Customer Relationship Management (3)** Focuses on the evolving field of customer relationship management. Students learn how to manage marketing information and decision-making systems that maximize customer retention and build long-term relationships. A-F only. Pre: BUS 311, or consent.

**MKT 372 Marketing for New Ventures (3)** Examines role of marketing in the formation and launch of entrepreneurial ventures within and outside of ongoing businesses. Emphasis on new product development and low cost, high impact marketing activities. Pre: BUS 312 or consent.

**MKT 381 Multinational Marketing (3)** Principles and topics related to international marketing, with emphasis on strategic planning and applications. Pre: BUS 312 or consent.

**MKT 391 Marketing Strategies (3)** Decision-making by the marketing executive; integration of all elements of the marketing program based on actual business situations. Pre: 311, 321, and one other marketing course above 311. A-F only. Pre: BUS 310 or consent. Repeatability unlimited times.

**MKT 399 Directed Reading and Research (V)** Reading and research in a special area of major interest subject to approval of faculty member(s). Project must include statement of objectives, outline of activities planned, results expected, and a format for preparing and evaluating. Must be approved in advance by the department chair and the faculty advisor. Repeatable unlimited times.

**MKT 410 Software Tools in Marketing (3)** Focuses on computer software tools designed to help managers make marketing decisions. Through hands-on experience, students learn software skills useful in marketing management, marketing research, sales and advertising. A-F only. Pre: BUS 310 and BUS 312, or consent.

**MKT 411B Imagination, Entrepreneurship and Business Problem-Solving (3)** Application of creative process to problems encountered in venture creation/growth. Student problem-solving styles are characterized and implications drawn for generation of breakthrough ideas. Tools for facilitating creative solutions to marketing problems are investigated. Pre: junior standing and BUS 312, or consent.

**MKT 651 Advanced Marketing Management (3)** A case course in advanced marketing planning and sales promotion methods. Pre: BUS 623 or consent.

**MKT 652 Japanese Marketing Systems (3)** Specialized study of Japanese marketing systems, considers both global and domestic marketing activities in the context of the Japanese economy. Pre: BUS 623 or consent.

**MKT 653 International Marketing Management (3)** Integrated and comparative approach to international marketing management. Emphasis on the importance of cultural consumer behavior fields. A-F only. Pre: PhD student status in international management or consent.

**MKT 704 Advanced Topics in International Marketing Seminar (3)** Selected topics in any aspect of international marketing to increase exposure to the range of issues researchers commonly confront. A-F only. Pre: PhD student status in international management or consent.

**MKT 799 Directed Research (V)** Research and research in an area of marketing under the direction of faculty member(s). A-F only. Pre: PhD student status in international management or consent.

Key to symbols & abbreviations: see the first page of this section.

**MKT 702 International Cross-Cultural Consumer Behavior (3)** Focuses on consumer behavior theory with a strong emphasis on cross-cultural research issues and methodology. Provides in-depth review of important published work in traditional and cross-cultural consumer behavior fields. A-F only. Pre: PhD student status in international management or consent.

**MKT 703 International Marketing Strategy Doctoral Seminar (3)** Focuses on theories of strategic marketing and planning. Explores the theoretical principles of marketing concepts, tools, and processes that can be used to help an organization develop a sustainable competitive advantage. A-F only. Pre: PhD student status in international management or consent.

**MATH 100 Survey of Mathematics (3)** Selected topics designed to acquaint nonmajors with examples of mathematical reasoning. May not be taken for credit after 215 or higher. FS

**MATH 111 Math for Elementary Teachers I (3)** Understanding, communicating, and representing mathematical ideas, problem solving, reasoning, and using symbolism. Operations and properties of operations with particular attention to sets. Prospective elementary education majors.

**MATH 112 Math for Elementary Teachers II (3)** Understanding, communicating, and representing mathematical ideas, problem solving, and argumentation. Counting, introduction to measurement, the standard operations on the natural numbers, equations, and inequalities. Prerequisite: MATH 111.

**MATH 134 Precalculus: Elementary Functions (2)** Algebra review, functions with special attention to polynomial, rational exponential and logarithmic functions, composed and inverse functions, techniques of graphing. Credit allowed for one of 134 and 140, or 134 and 161. Pre: two years of high school algebra, one year of plane geometry.

**MATH 140 Precalculus: Trigonometry and Analytic Geometry (3)** Studies trigonometric functions, analytic geometry, polar coordinates, vectors, and related topics. This course is the second part of the precalculus sequence. Credit allowed for one of 134, 135, or 140. Pre: 134, 135, or 161 or assessment exam, FS.

**MATH 161 Precalculus and Elements of Calculus for Economics and the Social Sciences (3)** Algebra review, functions with special attention to polynomial, rational, exponential, and logarithmic functions, algebra of functions, graphs of functions, basics of graphing differentiation and integration of algebraic functions, applications in economics and social sciences. Credit allowed for one of 134, 135, or 161. FS

**MATH 190 Introduction to Programming (2)** Introduction to computer programming and structured programming using Fortran, MATLAB, or other appropriate language. Pre: one semester of calculus (203, 215, 241, 242, 243, 244, 251A, 252A, or 253A) (or concurrent), or consent.

**MATH 203 Calculus for Business and Social Sciences (3)** Basic concepts of differential and integral calculus; applications to management, finance, economics, and the social sciences. Pre: 134, 135, or 161, or assessment exam. FS

**MATH 205 Calculus (3)** The calculus of one variable; applications to optimization and integration; applications to management, finance, and economics. Pre: 134, 135, or 161, or assessment exam. FS
MATH 215 Applied Calculus I (4) Basic concepts; differentiation, differential equations and integration with applications directed primarily to the life sciences. Pre: 140 or assessment exam. FS

MATH 216 Applied Calculus II (3) Differential calculus for functions of several variables and curves, systems of ordinary differential equations, series approximation of functions, continuous probability, exposure to use of calculus in the literature. Pre: 215 or concurrent. FS

MATH 241 Calculus I (4) Basic concepts; differentiation with applications; integration. Pre: 140 or 215 or assessment exam. FS

MATH 242 Calculus II (4) Integration techniques and applications, series and approximations, differential equations; functions of several variables and Green's Theorem; surface integrals, Stokes's and Gauss's Theorems. Pre: 243 or concurrent. FS

MATH 243 Calculus III (3) Vector algebra, vector-valued functions, differentiation in several variables, and optimization. Pre: 242 or 252A, or consent.

MATH 244 Calculus IV (3) Multiple integrals; line integrals and Green's Theorem; surface integrals, Stokes's and Gauss's Theorems. Pre: 243 or concurrent. FS

MATH 251A Accelerated Calculus I (4) Basic concepts; differentiation with applications; integration. Compared to 241, topics are discussed in greater depth. Pre: assessment and consent, or a grade of A or better in 241 and 252A, or consent.

MATH 252A Accelerated Calculus II (4) Integration techniques and applications, series and approximations, differential equations, introduction to vectors. Pre: 251A, or a grade of B or better in 241 and consent.

MATH 253A Accelerated Calculus III (4) Vector calculus; maxima and minima in several variables; multiple integrals; line integrals, surface integrals and their applications. Pre: 252A.

MATH 257 History of Mathematics (3) The historical development of mathematical thought. Pre: 216 or 242 or 252A.

MATH 301 Introduction to Discrete Mathematics (3) Symbolic logic, sets and relations, algorithms, trees and other graphs. Additional topics chosen from algebraic systems, networks, automata. Pre: one semester of calculus from mathematics department; or consent. Recommended: one semester programming.

MATH 302 Introduction to Differential Equations I (3) First order ordinary differential equations, constant coefficient linear equations, oscillations, Laplace transform, convolution, Green's function. Pre: 216 or 243 (or concurrent) or 252A (or concurrent), or consent.

MATH 303 Introduction to Differential Equations II (3) Constant coefficient linear systems, variable coefficient ordinary differential equations, series solutions and special functions, Fourier series, partial differential equations. Pre: 302, 311 (or concurrent); or consent.

MATH 304 Mathematical Modeling: Deterministic Models (4) Deterministic mathematical modeling emphasizing models and tools used in the biomedical sciences. Topics include difference equations, qualitative behavior solutions of ODEs and reaction-diffusion equations. A computer lab is included. Pre: 216 or 242 or 252A, or consent.

MATH 305 Mathematical Modeling: Probabilistic Models (4) Probabilistic mathematical modeling emphasizing models and tools used in the biomedical sciences. Topics include stochastic and Poisson processes, Markov models, estimation, Monte Carlo simulation and Ising models. A computer lab is included. Pre: 216 or 242 or 252A, or consent. Recommended: 304.

MATH 307 Linear Algebra and Differential Equations (3) Introduction to linear algebra, application of eigenvalue techniques to the solution of differential equations. Students may receive credit for only one of 307 or 311. Pre: 243 (or concurrent) or 252A (or concurrent), or consent.

MATH 311 Introduction to Linear Algebra (3) Algebra of matrices, linear equations, real vector spaces and transformations. Emphasis on concepts and abstraction and instruction of careful writing. Students may receive credit for only one of 307 or 311. Pre: 243 (or concurrent) or 252A (or concurrent), or consent.

MATH 321 Introduction to Advanced Mathematics (3) Formal introduction to the concepts of logic, finite and infinite sets, functions, methods of proof and axiomatic systems. Learning mathematical expressions in writing is an integral part of the course. Pre: 243 (or concurrent) or 252A (or concurrent), or consent.

MATH 331 Introduction to Real Analysis (3) A rigorous axiomatic development of one variable calculus, Completeness, topology of the plane, limits, continuous functions, differentiation. Pre: 242 or 252A, or 321; or consent.

MATH 351 Foundation of Euclidean Geometry (3) Axiomatic Euclidean geometry and introduction to the axiomatic method. Emphasis on writing instruction. Pre: 243 or 252A and 321 (or concurrent) or consent.

MATH 352 Non-Euclidean Geometries (3) Non-Euclidean geometries. Pre: 351 or consent.

MATH 371 Elementary Probability Theory (3) Sets, discrete sample spaces, problems in combinatorial probability, random variables, mathematical expectations, classical distributions, applications. Pre: 216, 242, or 252A, or consent.

MATH 373 Elementary Statistics (3) Estimation, tests of significance, the concept of power. Pre: 371 or consent.


MATH 403 Partial Differential Equations II (3) Laplace's equation, Fourier transform methods for PDEs, higher dimensional PDEs, spherical harmonics, Laplace series, special functions and applications. Pre: 402 or consent.

MATH 405 Ordinary Differential Equations (3) Systems of linear ordinary differential equations, autonomous systems, and stability theory applications. Optional topics include series solutions, Sturm theory, numerical methods. Pre: 302 and 311, or consent.

MATH 407 Numerical Analysis (3) Numerical solution of equations, interpolation, least-squares approximation, and difference problems, numerical solution of ordinary and partial differential equations. (These topics are covered in the year sequence 407–408.) Pre: 507 or 311, and one semester programming, or consent.

MATH 408 Numerical Analysis (3) Continuation of 407. This is the second course of a year sequence and should be taken in the same academic year as 407. Pre: 407 or consent.

MATH 411 Linear Algebra (3) Vector spaces over arbitrary fields, minimal polynomials, invariant subspaces, diagonalization, similarity, unitary and Hermitian matrices, quadratic forms. Pre: a grade of B or better in 311 and 321, or consent.

MATH 412 Introduction to Abstract Algebra (3) Introduction to basic algebraic structures. Groups, finite groups, abelian groups, rings, integral domains, fields, factorization, polynomial rings, field extensions, quotient fields. Emphasis on writing instruction. (These topics are covered in the year sequence 412–413.) Pre: 311 and 321, or consent.

MATH 413 Introduction to Abstract Algebra (3) Continuation of 412. This is the second course of a year sequence and should be taken in the same academic year as 412. Emphasis on writing instruction. Pre: 412 or consent.

MATH 414 Operations Research: Discrete Models (3) Techniques of mathematical programming. Topics may include linear programming, integer programming, network analysis, dynamic programming, and game theory. Pre: 307 or 311, or consent.


MATH 420 Introduction to the Theory of Numbers (3) Congruences, quadratic residues, arithmetical functions, distribution of primes. Emphasis is on teaching theory and writing, not on computation. Pre: 321 or consent.

MATH 421 Topology (3) Geometric and combinatorial topology. Surfaces, homology, Euler characteristics, winding numbers, Jordan curve theorem. Pre: 321 or consent.

MATH 431 Principles of Analysis I (3) Topology of R^n, continuous functions, Riemann integration, sequences and series, uniform convergence, implicit function theorems, differentials and Jacobians. Emphasis on teaching mathematical writing. (These topics are covered in the year sequence 431–432.) Pre: 311, 321, and 331, or consent.

MATH 432 Principles of Analysis II (3) Continuation of 431. This is the second course of a year sequence and should be taken in the same academic year as 431. Emphasis on writing instruction continues. Pre: 431 or consent.

MATH 442 Vector Analysis (3) Vector operations, wedge product, differential forms, and smooth mappings. Theorems of Green, Stokes, and Gauss, both classically and in terms of forms. Applications to electromagnetism and mechanics. Pre: 244 or 253A, and 307 or 311, or consent.

MATH 443 Differential Geometry (3) Properties and fundamental geometric invariants of curves and surfaces in space; applications to the physical sciences. Pre: 244 or 253A, and 311, or consent.

MATH 444 Complex Analysis (3) Analytic functions, complex integration, introduction to conformal mapping. Pre: 244 or 253A, recommended 307, 311, 321, or 331, or consent.

MATH 449 Topics in Undergraduate Mathematics (3) Advanced topics from various areas: algebra, number theory, analysis, and geometry. Repeatable unlimited times. Pre: consent.

MATH 454 Axiomatic Set Theory (3) Sets, relations, ordinal arithmetic, cardinal arithmetic, axiomatic set theory, axiom of choice and the continuum hypothesis. Pre: 321 or graduate standing in a related field or consent.


MATH 471 Probability (3) Probability spaces, random variables, distributions, expectations, moment-generating and characteristic functions, limit theorems. Continuous probability emphasized. Pre: 244 (or concurrent) or 253A (or concurrent), or consent.

MATH 472 Statistical Inference (3) Sampling and parameter estimation, tests of hypotheses, correlation, regression, analysis of variance, sequential analysis, rank order statistics. Pre: 471 or consent.

MATH 475 Combinatorial Mathematics (3) Finite configurations. Topics may include counting methods, generating functions, graph theory, map coloring, block design, network flows, analysis of discrete algorithms. Pre: 311 or consent.

MATH 480 Senior Seminar (2) Seminar for senior mathematics majors, including an introduction to methods of research. Significant portion of class time is dedicated to the instruction and critique of oral presentations. All students must give the equivalent of three presentations. CR/NC only. Pre: one 400-level mathematics course or consent.

MATH 490 Mathematical Biology Seminar (1) Reports on research in mathematical biology, reviews of literature, and research presentations. Required for Certificate in Mathematical Biology. Repeatable one time. Pre: junior standing or higher and consent. (Cross-listed as BIOL 490)

Key to symbols & abbreviations: see the first page of this section.
MATH 499 Directed Reading (V) Limited to advanced students who must arrange with an instructor before enrolling. Repeatable up to six credits.

MATH 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidacy and consent.

MATH 511 Problem Solving for Teachers (1) Practicing teachers develop and improve their problem-solving skills by working on challenging mathematical tasks. Students improve their mathematics content knowledge by working on problems and learning to design challenge problems for their own classes. Practicing teachers in grades K-12 only. Repeatable unlimited times. CR/NC only. All 600-course prerequisites graduate standing or consent.

MATH 602 Ordinary and Partial Differential Equations (3) Classical existence and uniqueness theory for ODEs and PDEs, qualitative properties, classification, boundary value and initial value problems, fundamental solutions, other topics.

MATH 603 Ordinary and Partial Differential Equations (3) Continuation of 602. This is the second course of a year sequence and should be taken in the same academic year as 602.

MATH 611 Modern Algebra (3) Modules, Sylow theorems, Jordan canonical form, unique factorization domains, Galois theory, algebraic closures, transcendence bases. (These topics are covered in the year sequence 611–612.)

MATH 612 Modern Algebra (3) Continuation of 611. This is the second course of a year sequence and should be taken in the same academic year as 611.

MATH 613 Group Theory (3) Sylow theorems, soluble groups, nilpotent groups, extension theory, representation theory, additional topics.

MATH 615 Ring Theory (3) Ideal theory in Noetherian rings, localization, Dedekind domains, the Jacobson radical, the Wedderburn-Artin theorem, additional topics.

MATH 618 Lattice Theory (3) Introduction with applications to general algebra. Partially ordered sets, decomposition theory, representations of lattices, variational and free lattices, coordinatization of modular lattices.

MATH 619 Universal Algebra (3) Introduction to basic techniques, including subalgebras, congruences, automorphisms and endomorphisms, varieties of algebras, Mal’tsev conditions.

MATH 621 Topology (3) Properties of topological spaces; separation axioms, compactness, connectedness; metricizability; convergence and continuity. Additional topics from general and algebraic topology.

MATH 622 Topology (3) Continuation of 621. This is the second course of a year sequence and should be taken in the same academic year as 621.

MATH 625 Differentiable Manifolds I (3) Differentiable structures on manifolds, tensor fields, Frobenius theorem, exterior algebra, integration of forms, Poincare Lemma, Stoke’s theorem.

MATH 631 Theory of Functions of a Real Variable (3) Lebesgue measure and integral, convergence of improper integrals, Lebesgue-Stieljes integral and more general theory of measure and integration. (These topics are covered in the year sequence 631–632.)

MATH 632 Theory of Functions of a Real Variable (3) Continuation of 631. This is the second course of a year sequence and should be taken in the same academic year as 631.


MATH 637 Calculus of Variations (3) Simple variational problems, first and second variation formulas. Euler-Lagrange equation, direct methods, optimal control.

MATH 644 Analytic Function Theory (3) Conformal mapping, residue theory, series and product developments, analytic continuation, special functions. (These topics are covered in the year sequence 644–645.)

MATH 645 Analytic Function Theory (3) Continuation of 644. This is the second course of a year sequence and should be taken in the same academic year as 644.

MATH 649 (Alpha) Topics in Mathematics (3) (B) logic; (D) analysis; (E) commutative rings; (F) function theory; (G) geometric topology; (H) operator theory; (I) probability; (J) algebra; (K) spectral; (L) lattice theory and universal algebra; (M) non- commutative rings; (O) transformation groups; (P) partial differential equations; (Q) potential theory; (R) algebraic topology; (S) functional analysis; (T) number theory; (U) algebraic geometry; (V) differentiable manifolds II. Repeatable up to nine credits for (U); unlimited times for the other alphabas.

MATH 655 Set Theory (3) Axiomatic development, ordinal and cardinal numbers, recursion theorems, axiom of choice, continuum hypothesis, consistency and independence results.

MATH 657 Recursive Functions and Complexity (3) Recursive, r.e., Prime, and Logspace classes. Nondeterminism, parallelization, alternation, and Boolean circuits. Reducibility and completeness.

MATH 671 Advanced Probability (3) Independence and conditioning, martingales, ergodic theory, Markov chains, central limit theorem. A-F only. Pre: 631 (with a minimum grade of B) or consent. (Alt. years)

MATH 672 Stochastic Processes (3) Stationary, Gaussian, and Markov processes. A-F only. Pre: 671 (with a minimum grade of B) or consent. (Alt. years)


MATH 695 Directed Reading and Research for Plan B Masters Students (V) Maximum of 3 credit hours. Repeatable two times. Graduate standing in MATH. A-F only.

MATH 699 Directed Reading and Research (V) Maximum of 3 credit hours. Repeatable unlimited times.


MATH 799 Apprenticeship in Teaching (V) An optional experiential component. Pre: level teaching; students serve as student teachers to professors; responsibilities include supervised teaching and participation in planning and evaluation. Open to graduate students only. Repeatable up to six credits. CR/NC only. Pre: graduate standing in mathematics and consent.

MATH 800 Dissertation Research (V) Research for doctoral dissertation. Repeatable unlimited times.

Mechanical Engineering (ME) College of Engineering

ME 113 Introduction to Engineering Design I (2) (1 Lec, 1 2-hr Lab) Introductory experience in analysis, synthesis, and design. Teamwork and project required. Pre: high school physics or consent.

ME 211 Introduction to Engineering Design (3) (1 Lec, 1 2-hr Lab) Introductory experience in communication, presentation, professional ethics, social responsibility, engineering economics, quality control, and computer-aided drafting. Teamwork and project required. Pre: MATH 170.

ME 271 Applied Mechanics II (3) Dynamics of particles and rigid bodies; force, acceleration, impulse-momentum, work-energy. A-F only. Pre: C or better in CEE 270; MATH 244 (or concurrent) or MATH 253A (or concurrent). (Cross-listed as CEE 271) DP

ME 311 Thermodynamics (4) Basic laws, closed and open systems. Work, heat, concept of entropy. Properties of pure simple substances. Ideal gases. Introduction to power and refrigeration cycles. Pre: grade of C or better in PHYS 170 and MATH 244 (or MATH 253A). DP

ME 312 Applied Thermodynamics (3) Gas mixtures and generalized thermal relationships, combustion and thermochemistry, chemical equilibrii, power and refrigeration cycles. Pre: grade of C or better in 311. DP

ME 322 Mechanics of Fluids (3) Incompressible and compressible ideal fluids, effects of viscosity, similarity, boundary layer flow, elementary gas dynamics. Pre: grade of C or better in 311 and CEE 271 or ME 271. (Spring only) DP

ME 331 Materials Science and Engineering (3) Electronic, atomic, and crystal structure materials and their effect on the mechanical, electrical, optical, and magnetic properties of engineering metals, ceramics, polymers, and composites. Pre: CHEM 162, MATH 242 and PHYS 170. DP

ME 341 Manufacturing Processes (3) Manufacturing components; selection of manufacturing methods. Selection and design of manufacturing methods to obtain components with desired size/shape/properties. Pre: 331 or consent. DP

ME 342 Manufacturing Processes Lab (2) (1 Lec, 2 1-hr Lab) Manufacturing laboratory: tension/compression tests, cold rolling, welding, casting, statistical process control, programming and milling using a CNC machine. Pre: 341 (or concurrent) or consent. DY

ME 360 Computer Methods in Engineering (3) Numerical solutions for algebraic and transcendental equations, simultaneous linear algebraic equations, integration and differentiation; integration of ordinary differential equations. Engineering applications. Pre: MATH 190 (or EE 160), MATH 244 (or MATH 253A) and MATH 302 (or MATH 307). DP

ME 371 Mechanics of Solids (3) Stress, strain and constitutive relations. Mechanics of shafts, beams, columns and cylinders. Failure theories, statically indeterminate systems. Pre: CEE 270 (grade of C or better), MATH 244 (or MATH 253A) and MATH 302 (or MATH 307). DP

ME 372 Component Design (3) Design, analysis, and selection of machine components: shafts, screws, fasteners, welds, rolling contact bearings, journal bearings, gears, clutches, brakes, belts, and roller chains. Pre: 213, and either 371 or CEE 370. DP

ME 374 Kinematics/Dynamics (3) Velocity and acceleration analysis of planar mechanisms; kinematic synthesis of linkages, cams, and gears; static and dynamic force analysis of mechanisms; balancing of machinery. Pre: CEE 271 or ME 271 (C or better), MATH 244 (or MATH 253A) and either MATH 302 or MATH 307. DP

ME 375 Dynamics of Machines and Systems (3) Lumped-parameter modeling of dynamic physical systems. Methods of analysis, including transform techniques. Time response and frequency response. Modal analysis. Pre: CEE 271 or ME 271 (C or better), and either MATH 302 or MATH 307. DP

ME 402 Dynamics Systems Laboratory (2) (1 Lec, 1 2-hr Lab) Analysis, design, fabrication, testing and characterization of engineering instrumentation. Computer-based data acquisition methods. Techniques and procedures associated with carrying out dynamic measurements within the constraints of cost, time and accuracy. A-F only. Pre: MATH 360, MATH 407, or PHYS 305 (or concurrent for any); and 375 (or concurrent). DY

ME 403 Advanced Mechanics for Engineers (3) Applications of ordinary differential equations, Laplace transform, vector calculus, theory, matrices, line integrals, Pre: MATH 244 (or MATH 253A), and MATH 302 (or MATH 307). DP

ME 404 Computational Fluid Dynamics (3) Basic computational fluid dynamics; four important partial differential equations; introduction to finite element method; Interpolation and Galerkin method; finite element method for transport phenomena; some algorithms for parallel computing. A-F only. Pre:

ME 418 Power and Propulsion (3) Principles, performance, and design of gas turbine power plants and propulsion systems. Pre: 312 and 422 (or concurrent). DP

ME 419 Astronautics (3) The space environment (vacuum, neutral, radiation, and plasma); motion in gravitational fields; orbit transfers; Earth-satellite operations; rocket engine performance and analysis; reentry dynamics; interplanetary trajectories; attitude dynamics and stabilization. A-F only. Pre: 422 or consent. (Spring only)

ME 422 Heat Transfer (3) Steady and unsteady conduction; steady convection and radiation; heat exchangers. Pre: 322. (Fall only) DP

ME 423 Mass Transfer (3) Elementary mass diffusion; diffusion in a stationary medium; diffusion in a moving medium; low and high mass transfer theories; simultaneous heat and mass transfer; condensation, evaporation, and transpiration cooling; species boundary layers; engineering and design of heat and mass exchangers; current refrigerants and environmental regulations. A-F only. Pre: 422 or consent. DP

ME 424 Introduction to Gas Dynamics (3) One-dimensional compressible flow involving change of area, friction, heat transfer. Normal and oblique shocks, Prandtl-Meyer flow. Application to nozzles, diffusers, and supersonic flight. Pre: 312 and 322. DP

ME 425 Thermal Management of Electronic Systems (3) To introduce concepts in the thermal management of electronics, and to develop sound technical tools to approach modern electronic packaging and cooling applications. A-F only. Pre: 422 or consent. (Spring only)

ME 426 Scaling Methods in Engineering (3) Scaling methods and optimization under global constraints; multi-scale optimal design of mechanical, thermal, and natural systems; effectiveness of heat, fluid, and convective trees; theoretical design optimization of manmade and natural power systems; analysis of time dependent structures. A-F only. Pre: 371 and 422 (or concurrent). DP

ME 433 Failures in Materials (3) Analysis of component failures due to imperfections, fatigue, brittle fracture, wear, corrosion, bending, impact, and overload. Fracture mechanics. Case studies. Pre: 331 or consent. DP

ME 434 Materials Selection for Design (3) Methodology for the selection of materials for mechanical applications to prevent mechanical failure and environmental degradation. Design considerations associated with the use of metals, ceramics, polymers, and composites. Pre: 341 and 371, or consent. DP

ME 435 Experimental Methods in Materials Research (3) (1 Lec, 2-2.5 hr Lab) Common experimental techniques in materials testing and research: x-ray diffraction, optical and electron microscopy, thermal and mechanical properties, electrochemical systems—theory and hands-on experience. Pre: 341 and consent.

ME 436 Corrosion Engineering (3) Basics of corrosion processes and emphasis on corrosion control. Thermodynamics and kinetics of corrosion, metal alloys and their behavior, corrosion control techniques (cathodic protection, anodic protection, coatings, and inhibitors). Pre: 341 and 342, or consent. DP

ME 446 Advanced Materials Manufacturing (3) (2 Lec, 2 hr Lab) Introduction to anisotropic systems materials, advanced manufacturing techniques for composite and intelligent materials, joining of composites, thin film processing and stereolithography, rapid prototyping, manufacturing process optimization, open-ended manufacturing projects. Pre: 341, 342, and senior standing; or consent. DP

ME 447 Introduction to Nanotechnology (3) (3 Lec) Tools and techniques of micro- and nanotechnology in design, modeling, simulations, analysis, fabrication, testing and characterization; nano-materials; nano- composites; nano-coating; nano-optics, nano-electronics and nano-biotechnology. A-F only. Pre: senior standing or consent. DP


ME 452 Robotics (3) Principles and design methods for autonomous systems. Pre: senior standing. DP

ME 453 Energy Conversion Systems (3) Energy conversion and its impact on the environment. Convective, hydroelectric, nuclear fission and fusion, solar, wind, ocean, biomass mass power; energy storage, transmission and conservation. Pre: 312, 322, and 422 (or concurrent); or consent. DP

ME 455 Nuclear Power Engineering (3) Nuclear reactor principles. Reactor heat transfer, heat generation and removal; analysis of reactor power systems and plants. Pre: 312 and 422. DP

ME 471 Experimental Stress Analysis (3) (1-3 hr Lab) Techniques of experimental stress analysis: strain and deflection measurement of beams and shafts to stress conversion, principal and maximum shearing stresses, failure in biaxial stress states, stress concentrations, residual stresses, buckling, creep, electrical resistance strain gages, brittle coatings, photoscantool methods, transducers. A-F only. Pre: 371 and departmental approval. (Spring only)

ME 473 Mechanical Vibrations (3) Response of machines and systems to transient and periodic excitation. Vibration isolation and transmissibility. Modal analysis of multi-degree-of-freedom systems. Applications to design. Pre: 371, 375; or consent. DP


ME 480 Thermofluid Measurements and Design (3) Measurement techniques in thermodynamics, heat transfer, fluid mechanics, and heat transfer. Hands-on experience with instrumentation. Open-ended design of thermofluid systems. Contemporary engineering ethics issues. Final report and presentation are required. A-F only. Pre: 422 (or concurrent).

ME 481 Design Project I (3) (1 hr Lab) Basic engineering design methodology, design process, project planning, decision making, materials selection, economic analysis, quality control, finite element analysis, initiation of an open-ended design project. A-F only. Pre: 372 (or consent) and 375 (or concurrent).

ME 482 Design Project II (3) (1 hr Lab) Extension of design project initiated in ME 481. Pre: 422 and either 371, 372, or 375 (or concurrent). DP

ME 482 Convection Heat Transfer (3) Heat transfer in laminar and turbulent boundary layers. Analogy between heat, momentum, mass transfer. Pre: 422 and 626.


ME 492 Special Topics in Mechanical Engineering (3) Specialized topics in thermosciences, mechanics, materials, systems, or design. Pre: consent.

ME 493 Special Topics in Mechanical Engineering (3) Specialized topics in thermosciences, mechanics, materials, systems, or design. Pre: consent.

ME 499 Project X Advanced problems in mechanical engineering design or development. Student must find faculty sponsor before registering. Pre: senior standing.

ME 500 Master's Plan B/C Studies (1) DP


ME 611 Advanced Thermodynamics (3) Introduction to general principles of classical thermodynamics. Main topics include equilibrium conditions, thermodynamic relations, Legendre transformations, Maxwell relations, stability of thermodynamic systems, phase transitions, and critical phenomena. Graduate students only. A-F only. Pre: 311 or consent.

ME 615 Advanced Aerodynamics (3) Advanced topics in aerodynamics, two- and three-dimensional wing theory, slender-body theory, lifting surface methods, vortex and wave drag, analytical and numerical methods, flow for aerodynamic behavior and introduction to flight-dynamics. A-F only. Pre: 322 and 626, or consent. (Once a year)

ME 618 Boiling and Two-Phase Flow (3) Two-phase flow pattern and flow pattern maps; two-phase flow models (homogeneous, separate, drift flux, annular); laminar and turbulent film condensations; boiling incipience; pool boiling heat transfer; flow boiling heat transfer; critical heat flux (CHF). A-F only. Pre: 422 (or equivalent) or consent. (Spring only)


ME 622 Convective Heat Transfer (3) Heat transfer in laminar and turbulent boundary layers. Analogy between heat, momentum, mass transfer. Pre: 422 and 626.


ME 626 Viscous Flows (3) Formulation and properties of the Navier-Stokes equations; exact solutions; creeping flows; lubrication theory; laminar boundary layers; laminar stability, and transition to turbulence; turbulent boundary layers. Pre: 322. (Fall only)

ME 630 Rheology (3) Vector and tensor operations. Consecutive equations. Generalized Newtonian fluids and linear viscoelastic fluids. Rheometry and experiments. Flow of suspensions. Advanced topics and rheology of polymer solutions, particulate materials, and asphalt laboratories. Pre: 626 or consent. (Spring only)


ME 636 Fundamentals of Electrochemistry (3) Thermodynamics of cells, electrode kinetics, mass transfer by migration and electrochemistry, electrode techniques, forced convection, impendence, double-layer structure, and absorbed intermediates in electrode processes. Pre: consent.

ME 645 Clinically Driven Design and Development (3) Exploration of simple, cost-effective alternatives in medicine through different stages of concept generation, design analysis, and prototype validation and investigation of their commercialization potential. Graduate students only. Pre: 342 or consent.

ME 664 Mechanics and Design Composites (3) Introduction to composites; anisotropic elasticity and laminate theory; hygrothermal effects; composite beams, columns, rods, plates, and shells; energy methods; failure theories; joining of composites, computer-aided design in composites. Pre: 371 or consent.
ME 647 Nanoscience and Nanotechnology (3) Science and applications of nanotechnology. Synthesis of nanostructures; nanoscale structure characterization by electron microscopy and Raman spectroscopy; electrical, thermal, and mechanical properties of nanostructures; fabrication of nanodevices; energy, environmental, and biological applications of nanomaterials. A-F only.

ME 650 Surface Phenomena (3) Fundamental and modern concepts of surface and colloid science and surface science. Main topics include surface thermodynamics, capillarity and wetting phenomena, surface forces, surfactants, and particles. Pre: 311 or consent. (Fall only)

ME 651 Automatic Control (3) Linear optimal feedback control, discrete time optimal control, fundamental principles of optimal control, application to motion and force control of robot arms and manipulators. Pre: 451, EE 351; or consent.

ME 660 Introduction to Fuel Cell Technology (3) Working principles of all major fuel cell types, fundamentals of proton exchange membrane (PEM) fuel cells; state-of-the-art theoretical models and diagnostic technologies for PEM fuel cells. A-F only. Pre: 422 (or equivalent) or consent. (Spring only)

ME 671 Continuum Mechanics (3) Cartesian tensors in mechanics, finite deformations, analysis of stress and strain, principal values, invariants, equilibrium and compatibility equations, constitutive relations, field equations. Problems in elasticity. Recommended: Pre: 371 or CEE 370, or consent. (Cross-listed as CEE 671)

ME 672 Finite Element Analysis (3) Introduction to finite element analysis and design in mechanical engineering. Applications to machine design, vibrations, elasticity, heat transfer. Pre: 360, 371; or consent.

ME 678 Advanced Dynamics (3) Lecture on rigid-body dynamics. Topics include: dynamical systems; motion representation and constraints; Newtonian mechanics; Lagrangian mechanics; Hamilton's principle; stability analysis; introduction to multibody dynamics. Pre: 375 or equivalent, or consent.

ME 680 High Growth Entrepreneurship (V) An interdisciplinary (JD-MBA) course examining legal, business, and technology issues related to building high growth companies. Student teams develop company feasibility reports and skills necessary to advise or build high growth businesses. Recommended: Pre: 531. Law students only. (Once a year) (Cross-listed as LAW 590)

ME 691 Seminar (1) Current problems in all branches of mechanical engineering. All graduate students are required to attend; registrants are expected to present talks. Pre: graduate standing.

ME 696 Advanced Topics in Mechanical Engineering (V) Highly specialized topics in thermosciences, mechanics, materials, system, or design. Pre: consent.

ME 699 Directed Reading or Research (V) Directed study on subject of mutual interest to student and a staff member. Student must find faculty sponsor before registering. Repeatable unlimited times. Pre: graduate standing.


ME 799 Directed Instruction (V) Student assists in undergraduate classroom and/or project instruction under the direction and close supervision of faculty member. CR/NC only. Pre: admission to PhD candidacy or consent.

ME 800 Dissertation Research (V) Research for doctoral dissertation. Repeatable unlimited times. Pre: candidacy for PhD in mechanical engineering.

Medical Education (MDED)

MDED 527 Evidence-Based Medicine (1) Critical appraisal track designed to improve the student’s ability to seek and evaluate new medical knowledge. MD majors only. CR/NC only. (Spring only)

MDED 528 Unit 8 Block Electives (V) Through lectures, self--assessments and independent study, second-year medical students will consolidate their knowledge of the application of the biological sciences to patient care. CR/NC only. Pre: 557.

MDED 541 Clinical Skills Assessment (1) Required comprehensive interdepartment multidisciplinary assessment program for fourth-year medical students. CR/NC only. Pre: FMCH, MED, OBGN, PED, SURG. (Fall only)

MDED 545 (Alpha) Senior Interdisciplinary Electives (V) Fourth-year elective in which students study selected interdisciplinary topics. CR/NC only. (B) medical education elective; (C) complementary and alternative medicine; (D) leadership in underserved areas; (E) MD 7. CR/NC only for (D). Pre: FMCH, MED, OBGN, PED, PSTY. SURG 531 or 532. (Spring only for (D))

MDED 551 MD 1 Health and Illness (5) Introduction to concepts of health and disease through lectures, tutorials, and colloquia intended to broaden the learning from MD 1 health care problems in tutorials. MD majors only. CR/NC only. Pre: consent. Co-requisite: 551L. (Fall only)

MDED 551L MD 1 Health and Illness (5) Concepts focusing on cardiovascular and pulmonary systems through integrated basic science lectures, laboratories, and colloquia intended to broaden the learning from MD 1 health care problems in tutorials. CR/NC only. Pre: 551 and 551L. Co-requisite: 552L. (Fall only)

MDED 552 MD 2 CV/Pulmonary (7) Concepts focusing on cardiovascular and pulmonary systems through integrated basic science lectures, laboratories, and colloquia intended to broaden the learning from MD 2 health care problems in tutorials. CR/NC only. Pre: 551 and 551L. Co-requisite: 552L. (Fall only)

MDED 552L MD 2 CV/Pulmonary Tutorials (7) Advanced series of problem-based learning tutorials for first-year medical students focusing on concepts of health and disease through MD 1 health care problems. MD majors only. CR/NC only. Co-requisite: 551L. (Spring only)

MDED 553 MD 3 Renal/Hematology (7) Concepts focusing on renal and hematologic systems through integrated basic science lectures, laboratories, and colloquia intended to broaden the learning from MD 3 health care problems in tutorials. CR/NC only. Pre: 552 and 552L. Co-requisites: 553L. (Spring only)

MDED 553L MD 3 Renal/Hematology Tutorials (7) Advanced series of problem-based learning tutorials for first-year medical students focusing on renal and hematologic health care problems. CR/NC only. Pre: 552 and 552L. CR/NC only. Pre: 553L. (Spring only)

MDED 554 MD 4 GI/Endocrine (7) Concepts focusing on gastrointestinal and endocrine systems through integrated basic science lectures, laboratories, and colloquia intended to broaden the learning from MD 4 health care problems in tutorials. CR/NC only. Pre: 553 and 553L. Co-requisite: 554L. (Spring only)

MDED 554L MD 4 GI/Endocrine Tutorials (7) Advanced series of problem-based learning tutorials for first-year medical students focusing on gastrointestinal and endocrine health care problems. CR/NC only. Pre: 553 and 553L. Co-requisite: 554L. (Spring only)

MDED 556 MD 6 Locomotor System, Nervous System and Behavioral Problems (8) Concepts focusing on the locomotor/neurological systems and behavioral problems through integrated basic science lectures, laboratories, and colloquia intended to broaden the learning from MD 6 health care problems in tutorials. CR/NC only. Pre: 554 and 554L. Co-requisite: 556L. (Fall only)


MDED 557 MD 7 The Life Cycle (7) Concepts focusing on the life cycle through integrated basic science lectures, laboratories, and colloquia intended to broaden the learning from MD 7 health care problems in tutorials. CR/NC only. Pre: 556 and 556L. Co-requisite: 557L. (Spring only)


MDED 563 Third Year Colloquia (2) A series of lecture-discussions intended to broaden the perspectives of the clinical experiences and health care problems. Repeatable one time. CR/NC only. Pre: 551 and 557.

MDED 564 Senior Seminars (4) Review of topics and issues that will prepare senior students for the end of their undergraduate training and the start of their internship. CR/NC only.

MDED 571 Introduction to Clinical Skills (2) Introductory lectures and laboratories on history taking and physical exam skills. Repeatable one time. MD majors only. CR/NC only. Pre: consent. Co-requisite: 551L. (Fall only)

MDED 572 Unit 2 Clinical Skills (2) History and physical exam skills pertinent to the health care problems in Unit 2. MD majors only. CR/NC only. Pre: 571 or consent. (Fall only)

MDED 573 Unit 3 Clinical Skills (2) History and physical exam skills pertinent to the health care problems in Unit 3. MD majors only. CR/NC only. Pre: 572 or consent. (Spring only)

MDED 574 Unit 4 Clinical Skills (2) History and physical exam skills pertinent to the health care problems in Unit 4. MD majors only. CR/NC only. Pre: 573 or consent. (Spring only)

MDED 576 Unit 6 Clinical Skills (3) History and physical exam skills pertinent to the health care problems in Unit 6. MD majors only. CR/NC only. Pre: 574 or consent. (Fall only)

MDED 577 Unit 7 Clinical Skills (2) History and physical exam skills pertinent to the health care problems in Unit 7. MD majors only. CR/NC only. Pre: 576 or consent. (Spring only)

MDED 581 Unit 1 Community Health (2) Field experience placing student in community settings to work with health care professionals as they provide services to patients. Repeatable two times. MD majors only. CR/NC only. Pre: consent. Co-requisites: 551L and 557L. (Fall only)

MDED 582 Unit 2 Community Health (2) Field experience placing students in community settings to work with health care professionals as they provide services to patients. Repeatable two times. MD majors only. CR/NC only. Pre: 581 or consent. (Fall only)

MDED 583 Unit 3 Community Health (2) Field experience placing student in community settings to work with health care professionals as they provide services to patients. Repeatable two times. MD majors only. CR/NC only. Pre: 582 or consent. (Spring only)

MDED 584 Unit 4 Community Health (2) Field experience placing student in community settings to work with health care professionals as they provide services to patients. MD majors only. CR/NC only. Pre: 583 or consent. (Spring only)

MDED 590 (Alpha) Preclinical Electives (V) Elective for first and second year medical students. (B) projects in medical education; (C) healer’s art; (D) introduction to student research; (E) health and wellness; (F) quality improvement. Repeatable one time. CR/NC only. Pre: 551.

MDED 595 (Alpha) Topics in Medical Education (V) Summer selective in medical education for second-year medical students. (B) rural health pre- ceptor; (C) health care of the Pacific Basin; (D) projects in medical education; (E) manikin simulations; (F) learning resources; (G) cardiovascular case maps; (H) pulmonary case maps; (I) clinical skills

Key to symbols & abbreviations: see the first page of this section.
MDED 599 Research in Medical Education (V)
An elective for medical students to work on research projects related to improving medical education, student wellness, and community health under the direction of a faculty member in the Office of Medical Education. Repeatable nine times.

Medical History (MDHX)
School of Medicine
MDHX 699 Directed Research (V) Repeatable unlimited times.

Medical Technology (MEDT)
School of Medicine
MEDT 151 Introduction to Medical Technology (2) Designed to acquaint students to the field of medical technology (clinical laboratory science). Repeatable one time.
MEDT 301 The Clinical Laboratory (3) (2 Lec, 1 3-hr Lab) Theory and clinical application of medical laboratory methods and healthcare professional relationships. MEDT majors only. Repeatable one time. Pre: consent.
MEDT 331 Clinical Lab Management (3) Student will become familiar with fundamental administration of a clinical laboratory to include technical, personnel, and financial management areas. Repeatable one time. CR/NC only. Pre: consent.
MEDT 451 Clinical Parasitology (2) (1 Lec, 1 3-hr Lab) Modern diagnostic practices in parasitology. Repeatable one time. Pre: MICR 351 or consent.
MEDT 451 Hematology (1) (1 3-hr Lab) Fundamental study of blood in normal and pathological states: formation, development, and classification of blood cells. MEDT majors only. Pre: major or consent.
MEDT 451L Hematology Lab (2) (1 Lec, 1 3-hr Lab) Laboratory to accompany MEDT 451. MEDT majors only. Pre: major or consent. Co-requisite: 451.
MEDT 463 Clinical Microbiology II (3) (1 Lec, 2 3-hr Lab) Modern practices in diagnostic microbiology. Repeatable one time. MEDT majors only. A-F only. Pre: 451 or consent.
MEDT 464 Immunohematology (3) (2 Lec, 1 3-hr Lab) Antigen-antibody relationships in human blood, study of blood groups, clinical problems in transfusion. Repeatable one time. MEDT majors only. Pre: MICR 461 or consent. (Spring only)
MEDT 471 Clinical Biochemistry I (4) Biochemical principles in human health and disease states. Repeatable one time. MEDT majors only. Pre: CHEM 273 or consent. (Spring only) DB
MEDT 472 Clinical Biochemistry II (4) Continuation of 471. Repeatable one time. MEDT majors only. Pre: 471 or consent. (Once a year)
MEDT 477 Clinical Lab Methods and Analyses I (3) (1 6-hr Lab) Lab experiments illustrating fundamental principles and methods of clinical laboratory analyses. Repeatable one time. MEDT majors only. Pre: 471.
MEDT 478 Clinical Lab Methods and Analyses II (3) (2 Lec, 1 3-hr Lab) Continuation of 477. Pre: 477.
MEDT 481 Professional Issues in Medical Lab Science (1) Discussions about various professional issues through oral presentations and critiquing of peer presentations. Repeatable one time. MEDT majors only. Pre: 451L.
MEDT 495 Special Topics in Medical Technology (V) Acquaints student with role of the medical technologist as an overlap of major sciences in clinical situations to help student develop qualities unique to med technology. Repeatable one time. CR/NC only. Pre: consent.
MEDT 499 Directed Reading and Research (V) Repeatable one time.

MEDT 531 Advanced Lab Management Concepts and Contemporary Issues (1) Concepts in clinical laboratory management and discussion of contemporary issues for graduates and practicing clinical laboratory scientists. Repeatable one time. Pre: 531 or consent. (Summer session only)
MEDT 551 Advanced Clinical Laboratory Hema-tology and Hemostasis (1) Advanced-level study of hematology and hemostasis through clinical laboratory cases. Repeatable one time. Pre: 451 or consent. (Summer only)
MEDT 591 Clinical Training in Medical Technology (28) Application of theory and simulated laboratory experiences in immuno-hematology, clinical chemistry, microbiology, parasitology, hematology, clinical laboratory analysis, immunology, to meet stated career entry-level competencies. Repeatable one time. Pre: BS in MEDT.
MEDT 690 Seminar in Medical Technology (1) Analysis of research and recent literature pertaining to various aspects of medical technology. Repeatable one time. Pre: consent.

Medicine (MED)
School of Medicine
MED 532 Internal Medicine Longitudinal Clerkship (8) Six-month long clerkship in ambulatory setting, and six-week hospital-based experience. Repeatable one time and concurrent registration in 532 courses.
MED 541 Advanced Medicine Clerkship (6) Required 4 weeks duration for fourth-year medical students. Advanced experiences in ambulatory and hospital-based medical care. Proficiency in this course may be established by examination. CR/NC only. Pre: fourth-year standing and completion of 531, or consent.
MED 545 (Alpha) Electives in Medicine (V) Fourth-year electives in which students study selected topics within field of medicine. (B) allergy/immunology; (C) cardiology; (D) medicine elective in Asia; (E) dermatology; (F) endocrinology; (G) gastroenterology; (H) general internal medicine: ambulatory care; (I) general internal medicine: inpatient; (K) hematology; (M) nephrology; (N) neurology; (O) nuclear medicine; (P) oncology; (Q) pulmonary diseases; (R) research in medicine; (S) rehabilitation medicine; (T) Tropical medicine; (U) other internal medicine sub-specialty. Pre: 532 or 532 for (C), (E), (F), (G), (H), (I), (K), (M), (N), (O), (Q), (R), (S), (T), 541 for (D) and (W).
MED 546 (Alpha) Electives in Medicine (V) Fourth-year electives in which students study selected topics within field of medicine. (B) extraural electives in medicine (miscellaneous); (C) internal medicine seminar; (D) infectious disease; (E) internal medicine sub-specialty; (F) research in bioethics; (G) neurology critical care; (H) medical informatics. Repeatable one time for (B)–(E); not repeatable for (F); repeatable two times for (H); repeatable three times for (G), CR/NC only. Pre: 532 or 532 for (B) and (C); 541 for (E) and (H).
MED 599 Directed Research (V) Pre: consent.

Meteorology (MET)
School of Ocean and Earth Science and Technology (Effective Spring 2016, changes to ATOMO.)
MET/ATMO 101 Introduction to Meteorology (3) For nonscience majors and prospective science teachers. Basic atmospheric physics, sun-Earth-atmosphere interrelationships, pollution, major weather systems, weather forecasting, weather of Hawaii.' DP
MET/ATMO 101L Introduction to Meteorology Lab (1) (1 3-hr Lab) Exercises with meteorological data and measurement systems. Characteristics of Hawaiian winds, temperatures, and rainfall. Pre: 101 (or concurrent) or 200 (or concurrent).

Key to symbols & abbreviations: see the first page of this section.

MET/ATMO 102 Pacific Climates and Cultures (3) Highlights the interface between the observed weather and climate of the Pacific and the past and future culture of the people of the Hawaiian and Pacific islands. A-F only.
MET/ATMO 199 Introduction to MET Under-graduate Directed Research (V) Students gain familiarity with MET/ATMO research. Students can select 1-3 credits per semester for maximum 6 credits over 4 semesters. Students must pre-arrange research and reading content with instructor. Repeatable up to six credits. Freshman and sophomore standing only. CR/NC only. Pre: instructor approval.
MET/ATMO 200 Atmospheric Processes and Phenomena (3) Atmospheric variables, gas laws, radiation processes, thermodynamics, conservation laws, dynamic approximations, clouds and precipitation, convection, atmospheric circulations, midlatitude and tropical weather systems, forecasting, climate. Pre: PHYS 170 and MATH 241. DP
MET/ATMO 302 Atmospheric Physics (3) Energy and thermodynamics, statics and stability, physical processes of cloud formation, radiation and Earth-atmosphere heat balance, kinetic theory, optical effects. Pre: 200, MATH 242, and PHYS 272; or consent. DP
MET/ATMO 303 Introduction to Atmospheric Dynamics (3) Scalar and vector development of basic laws of hydrodynamics, equations of motion, kinematics, divergence, vorticity, viscosity and turbulence, introduction to numerical weather prediction, general circulation. Pre: 502 and MATH 244. DP
MET/ATMO 310 Global Environmental Change (3) Global environmental change problems such as carbon dioxide and the greenhouse effect, acid rain, chlorofluorocarbons and the ozone layer, global deforestation and the effect on climate, etc. Pre: 200, OCN 201, GG 101, GG 103, or GG 170; or consent. (Cross-listed as OCN 310) DP
MET/ATMO 320 Programming for Meteorolo-gists (3) Scientific programming in Fortran 77, graphics software and other mathematical applications. A-F or Audit. Pre: 302 (or concurrent) and MATH 241; or consent.
MET/ATMO 395 Undergraduate Internship (V) Experiential approach to earth science; students serve as interns to field professionals; responsibilities include supervised field work. Open to undergraduate SOEST majors. Repeatable one time. CR/NC only. Pre: junior/senior standing and consent. (Fall only)
MET/ATMO 399 Undergraduate Directed Read-ing (V) Individual reading in Ocean and Earth Sciences. Repeatable one time, up to three credits. MET/ATMO students only. Junior and senior standing only. A-F only. Pre: consent.
MET/ATMO 405 Satellite Meteorology (3) (2 Lec, 1 3-hr Lab) Orbital elements, ephemerides, viewing geometry; radiation, satellite sensors; interpreting satellite data; applications to synoptic meteorology and forecasting. Pre: 302. DP
MET/ATMO 406 Tropical Meteorology (3) His-tory; tropical clouds and hydrometeors; typhoons; monsoons; local and diurnal effects. Pre: 303. DP
MET/ATMO 412 Meteorological Analysis Lab (3) (2 3-hr Lab) Techniques of portraying and analyzing atmospheric structure and weather systems in middle and high latitudes; modern methods of forecasting extratropical systems. Pre: 303 or concurrent. (Alt. years)
MET/ATMO 416 Tropical Analysis Lab (3) (2-hr Lab) Techniques of portraying and analyzing at-
mospheric structure and weather systems in tropical and equatorial regions; forecasting tropical systems. Pre: 303 or concurrent.

MET/ATMO 499 Undergraduate Thesis (3) Capstone for senior Meteorology majors. Undergraduate thesis project includes literature review, experiment or research design, data collection and analysis, technical writing of a final thesis paper and oral presentation of the paper. Junior and senior standing only. A-F only. Pre: MET/ATMO 402, or consent.

MET/ATMO 600 Atmospheric Dynamics I (3) Governing equations for moist atmospheric motions, approximations, basic theoretical models, boundary layer dynamics, atmospheric waves, quasi-geostrophic theory for mid-latitude flow. Pre: 402, and either MATH 402 or MATH 405; or consent.

MET/ATMO 601 Atmospheric Dynamics II (3) Overview of dynamic meteorology, numerical weather prediction, geophysical fluid instabilities, approximate dynamical systems, atmospheric general circulation, stratospheric dynamics. Pre: 600 or consent. (Alt. years)

MET/ATMO 606 Cumulus Dynamics (3) Dynamics of convective systems: tornadoes, waterspouts, squall lines. Interactions with synoptic scale. Pre: 620 or consent. (Alt. years)

MET/ATMO 607 Mesoscale Meteorology (3) Scale analysis. Observational and theoretical aspects of mesoscale circulation systems. Pre: 600 or consent. (Alt. years)

MET/ATMO 610 Tropical Climate and Weather (3) Climate and general circulation of the tropical; El Niño and Southern Oscillation; intraseasonal oscillation; trade winds; tropical weather systems; energy balance; typhoons. Pre: 305 or consent. (Alt. years)

MET/ATMO 611 Satellite Data Applications (3) (2 Lec, 1 3-hr. Lab) Principles and practices of satellite remote sensing as used in the atmospheric sciences, specifically clouds, aerosols, precipitation, ocean and land cover datasets from various satellites. Develop skills in data manipulation, analysis, and visualization using Matlab. A-F only. Pre: 620 or consent. (Alt. years)

MET/ATMO 614 Tropical Cyclones (3) Lecture covering fundamentals of tropical cyclone structure, motion, and impacts on society. Observations from satellites, aircraft, ships and buoys, and numerical simulations focusing on storm structure and track. Some forecasting exercises. Repeatable one time. Pre: 600 and 610, or consent. (Alt. years)

MET/ATMO 616 Meteorology of Tropics (3) Synoptic components of monsoons, regional and temporal variability, numerical models, research exercises. Pre: 610 or consent. (Alt. years)

MET/ATMO 620 Physical Meteorology (3) Molecular kinetics, atmospheric thermodynamics, cloud physics, processes, atmospheric electricity, scattering and absorption of solar radiation, absorption and emission of infrared radiation, radiative transfer. Pre: 302 or consent.

MET/ATMO 628 Radar Meteorology (3) (2 Lec, 1 3-hr. Lab) Principles and practices of doppler radar data analysis, signal propagation and scattering, radar equation, signal processing, precipitation estimation and polarimetric applications, Multi-Doppler wind synthesis, mobile and spaceborne radars. A-F only. Pre:bag as, 302 or consent. (Alt. years)

MET/ATMO 631 Statistical Meteorology (3) Probability; frequency distributions of atmospheric variables; statistical analysis: parameter estimation and hypothesis testing, inequality and time trend; principal component analysis; statistical weather forecasting and verification. Pre: MATH 371. (Alt. years)

MET/ATMO 632 Advanced Statistical Methods in the Geosciences (3) Methods for numerous multivariate analyses will include singular spectrum, extended empirical orthogonal function, singular-value decomposition, canonical correlation, discriminant and cluster analysis. Other advanced topics include wavelet analysis, statistical downscaling and Bayesian analysis. A-F only and audit. Pre: 631 or consent. (Every 3rd year)

MET/ATMO 665 Small-Scale Air-Sea Interaction (3) Observations and theory of small-scale processes which couple the atmosphere and ocean boundary layers, including introduction to turbulence theory and parameterization of turbulent fluxes. Pre: MATH 402 and 403 (or their equivalents) and either 600 or OCN 620; or consent. (Alt. years) (Cross-listed as OCN 665)

MET/ATMO 666 Large-Scale Ocean-Air Interaction (3) Oceanic physics, physical oceanography and meteorology students to the state-of-the-art theories and observations of large-scale ocean-atmosphere interaction, as well as conveying the fundamental understanding that has been developed during the past 30 years. Emphasizes model results in phenomena such as El Niño/Southern Oscillation, the North Atlantic Oscillation, the Pacific Decadal Oscillation, and global climate change. Repeatable one time. Pre: 600 or OCN 620, or consent. (Alt. years) (Cross-listed as OCN 666)

MET/ATMO 699 Directed Research (V) Repeatable unlimited times. Pre: consent.

MET/ATMO 700 Thesis Research (V) Repeatable unlimited times.

MET/ATMO 702 Numerical Weather Prediction (3) (2 Lec, 1 3-hr Lab) Fundamental methods and techniques in numerical weather prediction: time differencing, spatial finite differencing, spectral methods, numerical stability, explicit and implicit methods. Modern operational and research forecast models. Hands-on laboratory includes simple to complex dynamic models, with a term project. Repeatable one time. Pre: 600 or OCN 620; MATH 407 or 408; or consent. (Alt. years)

MET/ATMO 704 Climate and Climate Variability (3) Physical basis of climate, numerical climate models, paleoclimate indicators, modern instrumental climate records, assessment of human impact on climate, prediction of future climate. Repeatable one time. Pre: 600 or OCN 620; MATH 407 or 408; or consent. (Alt. years)

MET/ATMO 706 Tropical Climatic Dynamics and Modeling (3) Overview of current progress in tropical climate dynamics with a particular focus on large-scale atmosphere-ocean interactions; introduction of basic numerical models for students to construct and run immediate tropical atmosphere and ocean models. Pre: 600.

MET/ATMO 708 General Circulation of the Atmosphere (3) Theory, observations, large-scale analyses, and global climate models that describe characteristic large-scale circulation of the Earth’s atmosphere. Includes zonally averaged climatology, asymmetric features of the general circulation, and El Niño-Southern Oscillation. Repeatable one time. Pre: 600 or consent. (Alt. years)

MET/ATMO 752 Special Topics in Meteorology (3) Concentrated studies on selected atmospheric problems. Repeatable two times. Pre: 600 or consent.

MET/ATMO 765 Seminar in Meteorology (1) Participation in departmental seminars and presentation of a seminar on research results. Includes written critiques of departmental seminars. Repeatable three times. Pre: consent.

MET/ATMO 800 Dissertation Research (V) Repeatable unlimited times.

Microbiology (MICR)

College of Natural Sciences

MCR 130 General Microbiology (3) Role of microorganisms; how they affect people, property, and the environment. A basic survey course covering broad aspects of biochemistry, genetics, molecular biology, and physiology of host-parasite relationships, public health, bacterial, mycotic and viral diseases; epidemiology; ecology of soils and water; environmental pollution; food microbiology; industrial applications at an introductory level. Not open to those with credit in 351 or equivalent. DB

MICR 140L Microbiology Laboratory (2) (2 3-hr Lab) Primary students in nursing and dental hygiene. Pre: 130 (or concurrent). DY

MICR 314 Research Ethics (1) Introduction to the ethical issues faced by individuals and institutions involved in scientific research. Based on case studies, students will discuss and write about ethical issues in research. Issues include, but are not limited to, research, mentoring, authorship, ownership of data, genetic technologies and record keeping. This course is designed for students with majors in the natural sciences. A-F only. Pre: BIOL 172 (or concurrent), or MATH 321 (or concurrent), or PHYS 170 (or concurrent), or CHEM 272 (or concurrent); or consent. (Cross-listed as MCB 314) DS

MICR 351 Biological Microorganisms (3) Anatomy, chemistry, physiology, genetics, development, and environmental interactions of microorganisms. Pre: BIOL 171 or equivalent, CHEM 272/272L; or consent. Co-requisite: 351. Recommended: BIOL 275/275L. DB

MICR 351L Biological Microorganisms Lab (2) (2 Lab) Laboratory exercises for 351. Pre: CHEM 272/272L, and BIOL 171, or equivalent. Co-requisite: 351. DY

MICR 361 Introductory Bioinformatics (4) (3 Lec, 1 3-hr Lab) Introductory bioinformatics will provide a basic foundation of biological information (DNA, protein, genome and proteome) by using information technology (IT). A-F only. Pre: BIOL 275 and BIOL 275L, or consent. (Full only)

MICR 401 Marine Microbiology (3) Evolution, ecology, biochemistry, genetics, and physiology of marine bacteria by examining defined systems and organisms. Pre: BIOL 265/265L, and BIOL 275/275L and BIOL 301 (or concurrent)/301L (or concurrent), and OCN 201; or 351/351L; or consent. DB

MICR 401L Marine Microbiology Laboratory (1) (1 3-hr Lab) Laboratory to accompany 401. Pre: BIOL 265/265L and BIOL 275/275L and BIOL 301 (or concurrent)/301L (or concurrent), and OCN 201; or 351/351L and 401 (or concurrent); or consent. DY

MICR 410 Advanced Topics in Microbiology (2) Capstone for (but not limited to) senior microbiology majors. Current and seminal research in microbiology, critical analysis of the methods and logic of experimental design, Lecture and discussion of primary literature. A-F only. Pre: 351 and three other 400-level courses (or concurrent), or consent. (Once a year)

MICR 431 Microbial Physiology (3) Fundamental physiological and metabolic processes of bacteria; emphasis on growth, functions of cell structures, varieties of energy metabolism, metabolic regulation, and differentiation at the prokaryote level. Pre: 351. DB

MICR 431L Microbial Physiology Lab (2) (2 3-hr Lab) Components and metabolism of the bacterial cell; emphasis on techniques of analysis of metabolism and molecular structure. Co-requisite: 431. DY

MICR 461 Immunology (3) Structure and biological actions of antigens and antibodies; fundamentals of antibody synthesis; the relation of immunology to biology and medical sciences. Pre: 351 or BIOL 172; or consent. Recommended: BIOL 275/275L. (Cross-listed as MCB 461) DB

MICR 461L Immunology Lab (2) (2 3-hr Lab) Basic exercises and experiments in immunology, immunocompetency, immuno-biology to illustrate principles of 461. Co-requisite: 461 or consent. (Cross-listed as MCB 461L) DY

MICR 463 Microbiology of Pathogens (3) Host-parasite relationships in microbial diseases of humans and animals with emphasis on bacterial pathogens. Pre: 351 and BIOL 61; or consent. Co-requisite: 463 or consent. DB

MICR 463L Microbiology of Pathogens Lab (2) (2 3-hr Lab) Characterization of bacterial pathogens. Isolation, identification, and diagnosis. Co-requisite: 463 or consent. DY

MICR 470 Microbial Pathogenesis (3) Fundament-
MICR 475 Bacterial Genetics (3) Genetic analysis and molecular basis of transmission replication, mutation, and expression of heritable characteristics in prokaryotes. Pre: 351 or BIOL 275, or consent. (Cross-listed as MCB 475) DB

MICR 475L Bacterial Genetics Lab (2) (2-3 hr Lab) Techniques for study of transfer and expression of prokaryotic genes: transformation, conjugation, transposon mutagenesis, preparation and analysis of plasmid and chromosomal DNA. Pre: 475 (or concurrent). (Cross-listed as MCB 475L) DY

MICR 485 Microbes and Their Environment (3) Distribution, diversity, and roles of microorganisms in terrestrial, freshwater, and marine ecosystems. Importance of bacteria in pesticide degradation, bioremediation, and sewage treatment, biocontrol, food fermentation. Pre: BIOL 172 and CHEM 272, or consent. DB

MICR 485L Microbes and Their Environment Lab (2) (2-3 hr Lab) Techniques for study of interaction of microorganisms with and within their natural habitats; symbiosis between microorganisms and plants and animals; role of microorganisms in element cycling; food fermentation by bacteria. Pre: 485 (or concurrent) or consent. (Alt. years: BIOL 485L) DB

MICR 490 Virology (3) Basic principles of virology. Topics include methods for virus study, virus structure, replication, gene expression, pathogenesis and host response. Pre: 351 or BIOL 275, or consent. (Alt. years: BIOL 490) DB

MICR 490L Virology Lab (2) (2-3 hr Lab) General laboratory techniques and related theories in virology; including isolation, cell culture, assay, purification, and identification of viruses. Pre: 351/351L or BIOL 275/275L and 490 (or concurrent); or consent. DY

MICR 499 Microbiological Problems (V) Directed reading and research. Limited to senior majors with a minimum cumulative GPA of 2.7 or a minimum GPA of 3.0 in the major. Pre: consent. (Alt. years: BIOL 499) DB

MICR 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent. (Alt. years: BIOL 500)

MICR 601 Molecular Cell Biology (3) Provide fundamental concepts and dynamic characteristics of the molecules of the prokaryotic and eukaryotic cell, their biosynthesis and regulation, and the mechanisms that regulate cellular activities. A-F only. Pre: basic course in cell and molecular biology, or consent. (Fall only) (Cross-listed as MBB 601) DB

MICR 614 Research Ethics (1) Introduction to ethical considerations in research and institutions involved in scientific research. Moral reasoning, humans and animals in research, mentoring, authorship, ownership of data and genetic technologies. MICR graduates only. A-F only. Pre graduate standing in MICR or related field, or consent. (Once a year)

MICR 625 Advanced Immunology (3) Detailed reports and discussions on selected advanced topics and current research literature. Pre: 461 or consent. (Alt. years: spring) DB

MICR 630 Microbial Genomic (3) Advanced studies of Microbial genome: relation to functional genomics, structural genomics, and proteomics. A-F only. Pre: 351 and one 400-level MICR course, or consent. (Alt. years: summer)

MICR 632 Advanced Microbial Physiology (3) Selected topics. Pre: 431 or consent. (Alt. years: spring) DB

MICR 646 Plant-Bacterial Interactions (3) Diagnosis, immunity, genetics, and infection mechanisms of bacterial plant pathogens and symbionts. Pre: one of 351, 475, or BIOC 481; or consent. (Cross-listed as PEP 646) DB

MICR 652 Advanced Marine Microbiology (3) Advanced marine microbiology in diverse habitats with consideration of applications of marine microbes, interactions with higher organisms, phylogeny and diversity, and past and current methods. A-F only. Pre: 351 and 401, or consent. (Alt. years: fall) DB

MICR 655 Advanced Virology (3) Detailed reports and discussions on selected advanced topics and current research literature. Pre: 463, 490, BIOC 441; or consent. (Alt. years: fall) DB

MICR 671 Bacterial Genetics (3) Directed study and discussion of research literature on bacterial and viral bacterial mutation, genetic recombination, evolution and control mechanisms. Pre: graduate standing; undergraduates that have taken 475 may register with consent. (Alt. years: BIOL 671) DB

MICR 680 Advances in Microbial Ecology (3) Highlights in microbial ecology; interaction of microorganisms with both biotic and abiotic components of their environments. Modern techniques for study of autecology and synecology of microorganisms. Pre: 485 or BIOL 275, or consent. (Alt. years: BIOL 680) DB

MICR 681 Host-Parasite Relationships (3) Mechanisms of pathogenicity of microorganisms and defense mechanisms of human and animal hosts. Review of contemporary literature. Pre: 463 or consent. (Alt. years: fall) DB

MICR 685 Molecular and Cellular Bacterial Pathogenesis (3) Detailed examination of the molecular and cellular mechanisms of bacterial pathogenesis. Overview of key literature, synthesis of scientific problem proposals. Pre: 451, 463, or 470; or consent. (Alt. years: spring) DB

MICR 690 Seminar (1) Required of graduate students. Repeatable unlimited times; only one credit will count toward the degree.

MICR 695 Research Literature Review (1) Review of primary literature in a selected area of microbiology. Repeatable times; three credit limit. A-F only. Pre: graduate status or consent. DB


MICR 700 Thesis Research (V) Repeatable unlimited times. Pre: consent.

MICR 705 Special Topics in Microbiology (V) Selected topics in any aspect of microbiology. Repeatable unlimited times. Pre: consent.

MICR 800 Dissertation Research (V) Repeatable unlimited times.

Military Science and Leadership (MSL) ROTC Programs

A weekly two-hour laboratory is required for courses numbered 200 and above. This laboratory is optional for courses numbered 100. The laboratory includes practical application of leadership skills, land navigation, basic tactical skills, and physical fitness training.

MSL 100 Introduction to Physical Fitness (1) Hands-on participatory course following the Army’s physical fitness program. Classes conducted three days per week with Army ROTC cadets. Focus is on aerobic conditioning, muscular strength and endurance. Repeatable three times.

MSL 101 Introduction to Military Science I (2) Introduces cadets to personal challenges and competencies critical for effective leadership: personal development of life skills such as goal setting, time management, physical fitness, and stress management related to leadership, officerhip, and the Army profession. Focus on developing basic knowledge and comprehension of Army Leadership Dimensions while understanding the ROTC program, its purpose in the Army, and its advantages for the student.


MSL 301 Leading Small Organizations I (4) (2.5 Lec, 1.5-hr Lab) Challenges cadets to study, practice, and evaluate adaptive leadership skills with demands of the ROTC Leader Development Assessment Course (LDAC). Challenging scenarios related to small unit tactical operations will develop self-awareness and critical thinking skills. Cadets will receive systematic, specific feedback on their leadership abilities, and analyze/evaluate their leadership values, attributes, skills and actions. Pre: 101, 201, 202, or consent.

MSL 302 Leading Small Organizations II (4) (2.5 Lec, 1.5-hr Lab) Intensive situational leadership challenges to build cadet cognitive and skills in leading small units. Decisionmaking, persuading, and motivating team members under fire are explored, evaluated, and developed. Military operations are reviewed to prepare for the ROTC LDAC. Cadets apply principles of Law of Land Warfare, Army training, and motivation to troop leading procedures; and are evaluated on what they know and do as leaders. Pre: 101, 102, 201, 202.

MSL 303 ROTC Advanced Camp (6) Six-week summer field training exercise conducted at Fort Lewis, Washington. Adurous and intensified leadership training is conducted throughout the six-week period. Required for U.S. Army commissioned. Pre: 301, 302, and consent.

MSL 391 History of Military Warfare (3) Lecture/discussion on the art and science of warfare with concentration on U.S. military history from the Colonial Period onward. Generally 70 percent for Army ROTC students, with few exceptions for non-ROTC students. A-F only. Pre: consent.

MSL 399 Directed Reading and Research (V) Limited to military science students who have had at least one previous military science course for which a grade of B or higher was earned and a cumulative GPA of 2.0 or better. Pre: consent.

MSL 401 Leadership Challenges and Goal Setting (4) (2.5 Lec, 1.5-hr Lab) Develops proficiency to plan, execute, and assess complex operations; function as a staff member, provide leadership performance feedback to subordinates. Situational opportunities to assess risk, make ethical decisions, and provide coaching to fellow ROTC cadets; challenged to analyze, evaluate, and instruct younger cadets. Pre: 101, 102, 201, 202, 301, and 302; or consent.

MSL 402 Transition to Lieutenant (4) (2.5 Lec, 1.5-hr Lab) Explores dynamics of leading in complex, contemporary operational environments. Dimensions of cross-cultural challenges of leadership in a constantly changing world are highlighted as cadets prepare to ROTC Army leadership tasks and situations. Cadets develop greater self-awareness as they practice communication and team building skills, and tactics in real world scenarios provides a smooth transition to MSL 301.

MSL 203 ROTC Basic Camp (6) Four-week summer course conducted at Ft. Knox, Kentucky. Substitute for ROTC basic course (101, 102, 201, and 202) and fulfills course requirement for admission to ROTC advanced courses. Credit will be given for 203 or basic courses, but not both. Pre: consent.

MSL 301 Leading Small Organizations I (4) (2.5 Lec, 1.5-hr Lab) Challenges cadets to study, practice, and evaluate adaptive leadership skills with demands of the ROTC Leader Development Assessment Course (LDAC). Challenging scenarios related to small unit tactical operations will develop self-awareness and critical thinking skills. Cadets will receive systematic, specific feedback on their leadership abilities, and analyze/evaluate their leadership values, attributes, skills and actions. Pre: 101, 102, 201, 202; or consent.
principles of war, and rules of engagement in the face of international terrorism. Interaction with non-govern- ment organizations, civilians on the battlefield, and host nation support are examined and evaluated. Case studies, scenarios, and What Ifs. Lieutenant or exercises prepare cadets to lead as commissioned officers in the U.S. Army. Pre: 101, 102, 201, 202, 301, 302, and 401; or consent.

MSL 499 Advanced Military Research (V) Directs the student to conduct detailed research on a military topic and present to the department leadership plus assist MSL 400 series students on a battle analysis. Repeatable up to eight credits. Must be in Military Science and Leadership Program or Military Service member in junior or greater standing. Pre: department approval.

Molecular Biotechnologies and Bioengineering (MBBE) College of Tropical Agriculture and Human Resources MBBE 304 Biotechnology Science and Ethical Issues (3) Introduction to the concepts, goals, ethical issues and consequences of biotechnology using real-life case studies of cloning, DNA fingerprinting, gene therapy and genetic engineering. Pre: BIOL 371 or consent. (Cross-listed as BIOL 304)

MBBE 375 Essential Biochemistry (3) Introduction to basic concepts of cell biochemistry and metabolic pathways as applied to nutritional, medicinal and environmental biochemistry. A-F only. Pre: CHEM 152 or CHEM 272 or BIOC 341, or consent.

MBBE 401 Molecular Biotechnology (3) General principles, applications, and recent advances of the rapidly growing science of biotechnology. Topics include impact of biotechnology on medicine, animal sciences, environment, agriculture, forestry, and economic and socio-ethical issues. Pre: C (not C-) or better in BIOL 275 or consent. (Cross-listed as BIOL 401) DB

MBBE 402 Principles of Biochemistry (4) Molecular basis of inheritance in bacteria, plants and animals; emphasis on metabolism of carbohydrates, lipids, proteins and nucleic acids. Pre: C (not C-) or better in BIOL 275/275L, CHEM 272 and CHEM 273; or consent. (Cross-listed as BIOL 402 and PEPS 402) DB

MBBE 402L Principles of Biochemistry Lab (2) (1 Lec, 3-hr Lab) Principle techniques of biochemical laboratory. A-F only. Pre: 402 or concurrent. DY

MBBE 404 Marine Molecular Ecology and Biotechnology (3) Marine functional genomics, biodiversity of marine natural habitats, marine microbial communities and their ecological functions, interactions of marine microbes and their hosts, climate change and marine biodiversity, marine biotechnol- ogy. A-F only. Pre: OCN 201 or MICR 130, or consent. (Spring only) (Cross-listed as OCN 403)

MBBE 408 Molecular Cellular Biology II (3) Cell structure and function. Structure, chemistry, and functions of organelles and microorganisms. Pre: C (not C-) or better in BIOL 407; or consent. (Cross-listed as BIOL 408 and MCB 408) DB

MBBE 412 Environmental Biochemistry (3) Biochemical and chemical principles of occurrence, distribution, biochemistry of cellular biology, metabolism, and impact of synthetic and natural molecules in the environment. Important pollutants will be used as case studies to illustrate the principles. A-F only. Pre: CHEM 140 and CHEM 162 or CHEM 171; or consent. (Spring only) (Cross-listed as PEPS 412) DB

MBBE 461 Biotechnology for Teachers (3) Principles, methods, classical examples, recent development, benefits and dangers of modern biotechnol- ogy. Pre: BIOL 304 or consent.

MBBE 480 Integrative Genomics and Biotechnology (3) Integration of molecular genetics, virology, plant molecular biology, and bioinformatics. Gene silencing, functional genomics, and the develop- ment of expression systems for the production of heterologous proteins. A-F only. Pre: 401 and BIOL 275/275L; or consent. (Fall only) DB

MBBE 480L Integrative Genomics and Biotech- nology Lab (3) Laboratory to accompany 480. A-F only. Pre: 401 and BIOL 275/275L; or consent. (Spring only) DB

MBBE 483 Introduction to Bioinformatics Topics for Biologists (3) Focuses on the use of computational tools and approaches to analyze the enormous amount of biological data (DNA, RNA, protein) available today. A-F only. Pre: BIOL 171 (or equivalent), or consent. (Once a year) (Cross-listed as BIOL 483)

MBBE 490 Lab Automation: Advanced Tech- niques in Plant Molecular Biology (3) Combined lab lecture on semi-automated systems used to analyze and manipulate nucleic acids and proteins. A-F only. Pre: 401 and BIOL 275/275L; or consent. (Once a year)

MBBE 491 Special Topics in MBBE (V) Study and discussion of specific topics and problems in molec- ular and cellular biology. Pre: consent. MBBE 499 Directed Research (V) Supervised indi- vidual instruction in laboratory research problems in biochemistry, molecular and cellular biology, genomics, and genetics. Repeatable 3 times or up to 16 credits. Limited to qualified undergraduate students. A-F only.

MBBE 601 Molecular Cell Biology (3) Provide fundamental concepts and dynamic characteristics of the molecules of the prokaryotic and eukaryotic cell, their biogeochemical regulation, and the mechanisms that regulate cellular activities. A-F only. Pre: basic course in cell and molecular biology, or consent. (Fall only) (Cross-listed as MICR 601)

MBBE 607 Advanced Food Science I (3) Advanced topics in chemistry and physical characteristics of foods as well as their role in human nutrition. Repeatable one time. A-F only. Pre: graduate student status with undergraduate courses in organic chemistry, microbiology, additional biological sci- ence, physics, and biochemistry. Basic knowledge of food science is expected; or consent. (Cross-listed as FSHN 607)

MBBE 610 Molecular Biosciences Seminar (1) Study and discussion of significant topics and problems in plant physiology, biochemistry, and molecular biology. Repeatable three times. A-F only.

MBBE 620 Plant Biochemistry (3) Comprehensive study of chemical constituents and biochemical pro- cesses unique to the plant kingdom with emphasis on selected aspects of current interest. A-F only. Pre: 402 or consent.


MBBE 625 Biosensor Principles and Applications (3) Elaboration of common biochemical interactions used to quantify biological molecules, and the electric- al technologies used to detect them. Discussion of the desirable properties of biosensors, miniaturiza- tion and applications related to medicine, agricultur- e, bioproduction and environment. Pre: consent. (Cross-listed as BE 625)

MBBE 650 DNA and Genetic Analysis (2) Com- bined lecture-lab for students interested in genetic analysis, working knowledge of UNIX OS, Perl, Java or C. A-F only. Pre: ICS 471 and ICS 491 and ICS 691 (or equivalent), or consent. (Alt. years)

MBBE 687 Advanced Lab Techniques (1) (1 Lec, 2 hr Lab) Advanced laboratory techniques used in life science research. Pre: graduate standing or consent. (Cross-listed as ANSC 687 and FSHN 687)

MBBE 691 Advanced Special Topics in MBBE (V) Study and discussion of advanced special topics and problems in molecular biology and bioengineering. Pre: graduate standing or consent.

MBBE 699 Directed Research (V) Repeatable up to 64 credits.

MBBE 700 Thesis Research (V) CR/NC only.

MBBE 800 Dissertation Research (V) CR/NC only.

Molecular and Cell Biology (MCB) College of Natural Sciences MCB 314 Research Ethics (1) Introduction to the ethical issues faced by individuals and institutions involved in scientific research. Based on case studies, students will discuss and write about ethical issues in research. Issues include humans and animals in research, mentoring, authorship, ownership of data, genetic technologies and record keeping. This course is designed for students with majors in the natural sciences. A-F only. Pre: BIOL 172 (or concurrent), or MATH 251 (or concurrent), or PHYS 170 (or concurrent), or CHEM 272 (or concurrent); or consent. (Cross-listed as MCB 314) DS

MCB 407 Molecular Cell Biology I (3) Relationship between structure and function at macromo- lecular level. Pre: C (not C-) or better in BIOL 275/275L and CHEM 273, or consent. (Cross-listed as BIOL 407) DB

MCB 408 Molecular Cellular Biology II (3) Cell structure and function. Structure, chemistry, and functions of organelles and macromolecules. Pre: C (not C-) or better in 407; or consent. (Cross-listed as BIOL 408 and MCB 408) DB

MCB 408L Advanced Molecular and Cellular Biology Laboratory (2) (2 hr Lab) A laboratory to accompany 407 and 408. Pre: BIOL 407 (or concurrent) or BIOL 408 (or concurrent). (Cross-listed as BIOL 408L) DY

MCB 461 Immunology (3) Structure and biological actions of antigens and antibodies; fundamentals of antibody synthesis; the relation of immunology to bi- ology and medical sciences. Pre: MICR 351 or BIOL 172; or consent. Recommended: BIOL 275/275L. (Cross-listed as MCB 461) DB

MCB 461L Immunology Lab (2) (2 hr Lab) Basic exercises and experiments in cellular physiology, immuno-chemistry, immunology to illustrate principles of 461. Co-requisite: 461 or consent. (Cross-listed as MCB 461L) DY

MCB 472 The Biology of Cancer (3) Integrative, in-depth focus on the genetics, cell biology, and molecular basis of cancer. Combination of classroom
lectures and problem-based discussions in small groups. Addresses ethical implications of cancer research and treatment. A-F only. MCBI or BIOL majors only. Senior standing or higher. Pre: BIOL 407 (or concurrent) and BIOL 408 (or concurrent) or consent. (Spring only) (Cross-listed as BIOL 472) MCB 475 Bacterial Genetics (3) Genetic analysis and molecular basis of transmission replication, mutation, and expression of heritable characteristics in prokaryotes. Pre: BIOL 275, or consent. (Cross-listed as MICR 475) DB MCBL 475B. Bacterial Genetics Lab (2) (3-2 hr Lab) Techniques for study of transfer and expression of prokaryotic genes: transformation, conjugation, transposon mutagenesis, preparation and analysis of plasmid and lambda DNAs. Pre: 475 (or concurrent). (Cross-listed as MICR 475) DY Music (MUS) College of Arts and Humanities Applied music courses appear at the end of this section. MUS 106 Introduction to Music Literature (3) Elements, styles, and forms of music, from listener’s standpoint. DH MUS 107 Music in World Cultures (3) Folk, popular, and art music from major regions of the world, with emphasis upon Asia and the Pacific; representative styles and regional characteristics. FGC MUS 108 Fundamentals of Western Music (3) Fundamental 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. DA MUS 114 University Chorus (1) Performance of choral literature from Renaissance to present. Previous choral experience not required. Repeatable unlimited times. DA MUS 121 (Alpha) Class Instruction I (1) Basic principles of performance; relevant problems in literature. (B) voice; (C) piano; (D) guitar. Cannot be audited. DA MUS 122 (Alpha) Class Instruction II (1) Basic principles of performance; relevant problems in literature. (B) voice; (C) piano; (D) guitar. Repeatable in different sections. Cannot be audited. Pre: 121 or consent. DA MUS 123 (Alpha) Pacific Music Performance Class (1) Basic principles of performance of Pacific music. Relevance in elementary level. (B) slack key guitar; (C) ukelele. Repeatable in different sections. Pre: 121D or consent for (B); 108 or consent for (C). DA MUS 125 First-Level Secondary Piano I (1) Piano as secondary performance field; application of theory to problems in improvising, harmonizing, creating accompaniments, transposing, and sight-reading at keyboard. For music majors. Pre: consent. Co-requisite: 281 or consent. MUS 126 First-Level Secondary Piano II (1) Piano as secondary performance field; application of theory to problems in improvising, harmonizing, creating accompaniments, transposing, and sight-reading at keyboard. Continuation of 125. For music majors. Pre: 125 or consent. MUS 127 (Alpha) Asian Music Performance Class (1) Basic principles of performance of Asian music. Relevant problems in literature at elementary level. (B) koto; (C) shamisen; (E) shakuhachi. Cannot be audited. DA MUS 128 (Alpha) Asian Music Performance Class (1) Basic principles of performance of Asian music. Relevant problems in literature at elementary level. (B) koto; (C) shamisen; (D) South Indian singing; (E) shakuhachi. Cannot be audited. Pre: consent. DA MUS 155 Percussion Techniques (2) Similar to 151 using percussion instruments. A-F only. MUS 156 Brass Techniques (2) Similar to 151 using brass instruments. A-F only. MUS 157 String Techniques (2) Fundamental performance techniques, materials, and teaching skills on string instruments for students preparing to teach instrumental music. A-F only. (Once a year) MUS 158 Woodwind Techniques (2) Fundamental performance techniques, materials, and teaching skills on woodwind instruments for students preparing to teach instrumental music. A-F only. (Once a year) MUS 199 Recital Attendance (0) Attendance at approved department concerts. Required of all music majors (BMus, six semesters; BA and BEd, four semesters). Repeatable unlimited times. CR/ NC only. MUS 225 Second-Level Secondary Piano I (1) Continuation of 125-126; increased emphasis on piano literature up to intermediate level. Pre: 126 or consent. MUS 226 Second-Level Secondary Piano I (1) Continuation of 225. Pre: 225 or consent. MUS 240 Creative Applications of Music Technology (3) Introductory laboratory experience. Teaches musicians fundamental technology concepts through creative projects. Exposes students to a variety of music and audio software. A-F only. Pre: music majors or minors or consent. MUS 250 Introductory Music Education (1) Survey of American education, with an emphasis on music learning, teaching and philosophy, school structure and governance, diversity and multi-cultural education, and professional ethics. Supervised clinical and field experiences required. MUS majors only. A-F only. (Alt. years) MUS 253 Elementary Music in Action (3) (3 LeC, 1-1 hr Lab) Musical concepts, philosophy and pedagogy: use of media, singing, movement, and instruments; as well as resources for an active elementary music classroom. DA MUS 265 History of Western Music to 1750 (3) Development of Western music from its origins to 1750. Styles, schools, composers. Pre: 282 or consent. DH MUS 266 History of Western Music After 1750 (3) Development of Western music from 1750 to the present. Styles, schools, composers. Pre: 282 or consent. DH MUS 270 World of Music: Asia/Pacific (3) Study of music as social process, sound system, aesthetics, and world view. Emphasis on Hawai‘i, Asia, and the Pacific and the ways music creates links across the region and among people. Pre: ability to read music and one introductory music course (108, 114, 121, 126, 151-156) or consent. (Fall only) DH MUS 280 Basic Theory and Aural Skills (3) Fundamentals of music theory, notation, sight-singing, and dictation. Pre: 108 or consent. MUS 281 Theory I (2) Materials and organization of music, analysis, writing, and keyboard application. Pre: 280 or consent. Co-requisite: 283 or consent. MUS 282 Theory II (2) Continuation of 281. Pre: 281 or consent. Co-requisite: 284 or consent. MUS 283 Aural Training I (1) Perception, identification, and notation of musical sounds through dictation and sight-singing. Pre: 280 and ability to sing diatonic melodies at sight, or consent. Co-requisite: 281 or consent. MUS 284 Aural Training II (1) Continuation of 283. Pre: 283 or consent. Co-requisite: 282 or consent. MUS 285 Theory III (2) Detailed study of theory: writing, analysis, keyboard application. Pre: 282. Co-requisite: 287 or consent. MUS 286 Theory IV (2) Continuation of 285. Pre: 285. Co-requisite: 288 or consent. MUS 287 Aural Training III (1) Advanced level of perception, identification of musical sounds through dictation and sight-singing. Pre: 284. Co-requisite: 285 or consent. MUS 288 Aural Training IV (1) Continuation of 287. Pre: 287. Co-requisite: 286 or consent. MUS 289 Introductory Practicum in Music Composition (V) Original composition; specific approaches to creative writing. Repeatable. Pre: 282 and 286; or consent. MUS 311 (Alpha) Ethnic Music Ensembles I (1) Performance of literature for groups of various sizes and kinds at introductory level (B) Hawaiian; (C) Japanese; (D) Chinese; (E) Korean; (F) Okinawan; (G) Philippine; (H) gamelan; (I) gagaku; (J) Tahitian; (K) Oceanic; (M) Sound counts through repeated times. Pre: upper division standing or consent. DA MUS 312 Hula/Chant Ensemble I (2) Ancient style. Pre: upper division standing or consent. DA MUS 321 Diction for Singers (3) Diction and phonetics of English, Italian, Liturgital Latin, German, and French for singers and conductors. Pre: 252B and 281 or consent. MUS 325 Conducting I (Problems in directing instrumental and choral ensembles. Score reading, rehearsal techniques, and basic interpretive problems. Pre: 286 and 288. MUS 326 Advanced Conducting (2) Continuation of 325. Pre: 325 or consent. MUS 340 Electronic Music (3) Basic techniques of electronic sound synthesis. Pre: 240 or consent. MUS 341 Audio Recording/Mixing/Sound Design (3) Preproduction, mixing, setup and recording suitable for film. Mixing techniques in software for small systems. Sound design using original synthesis techniques to enhance film and support stories. Pre: 240 or consent. (Alt. years) MUS 342 Digital Audio Synthesis and Multimedia Applications (3) Advanced digital audio synthesis techniques. Audio control of graphics and video. Introduction of alternate controllers. Pre: 240 or consent. (Once a year) MUS 353 Integrating Music in the Elementary School (3) Application of musical concepts through an integrated approach. This includes strategies, world music, literature, materials and resources for the elementary classroom curriculum. Pre: 253 or consent. MUS 354 General Music Methods (3) Required for K-12 music specialists. Scope and nature of music in the lives of children and adolescents; planning, teaching, learning, and evaluating music in elementary, middle, and high school curriculum. A-F only. Pre: 250, 286, and 288, or consent. MUS 354L General Music Methods Lab (1) Observation, analysis, participation and teaching in the elementary school. Supervised 20 hours of field experiences required. MUS majors only. CR/NC only. Pre: 286 and 288, or departmental approval. Co-requisite: 354. (Every 3rd semester) MUS 355 Instrumental Music Methods (3) Objectives, materials, and procedures of instrumental music in schools. A-F only. Pre: 250, 286, and 326 (or concurrent); or consent. MUS 355L Instrumental Music Methods Lab (1) Observation, analysis, participation and teaching in the elementary school. Supervised 20 hours of field experiences required. MUS majors only. CR/NC only. Pre: 250, 286, and 326 (or concurrent); or consent. Co-requisite: 355. (Every 3rd semester) MUS 356 Choral Music Methods (3) Objectives, materials, and procedures of choral music in schools. A-F only. Pre: 250, 286, or consent. MUS 356L Choral Music Methods Lab (1) Observation, analysis, participation and teaching in the elementary school. Supervised 20 hours of field experiences required. MUS majors only. CR/NC only. Pre: 250, 286, and 326 (or concurrent); or consent. Co-requisite: 356. (Every 3rd semester) MUS 358 Piano Pedagogy (2) Concepts, materials, and procedures for class and individual instruction in piano. Pre: 282. MUS 359 Piano Pedagogy (2) Continuation of 358. Pre: 358 or consent. MUS 360 Music in Film (3) Lecture investigating the role of music in narrative film, and developing critical skills through close study of films and their...
music. Understanding styles and techniques of film music within larger aesthetic trends and historical contexts. Pre: 106 or consent. (Once a year) DH

MUS 370 Music in Modern America (3) Varieties of music, including jazz and other popular forms; relevant antecedents. Pre: sophomore standing; freshmen with consent only. DH

MUS 381 Counterpoint (3) Form, texture, and style in music literature from Renaissance to present. Formal analysis and writing. Contrapuntal textures and forms of various types. Pre: 265, 266, and 286. DA

MUS 382 Form and Analysis (3) Form, texture, and style in music literature from Renaissance to present. Formal analysis and writing. Larger forms with various textures; recent contemporary approaches to style. Pre: 265, 266, and 286. DA

MUS 383 Orchestration (3) Basic principles of scoring for orchestra and band; instrumental ranges, timbres, transpositions; transcribing or composing for band, orchestra, and chorus. Pre: 286 or consent. DH

MUS 386 Theory and Practice of Jazz Improvisation (2) Development of an improvising technique through analysis and performance practice. For instrumentalists only. Pre: 285 and 287.

MUS 399 Directed Study (V) Limited to majors with a minimum cumulative GPA of 2.7 or a minimum of 3.0 in music. Pre: consent.

MUS 400 Topical Music Topics (V) Topics in history, literature, theory, applied music, music education, and ethnomusicology; for music majors. Consult department for topics and specific dates. Repeatable up to twelve credits. Pre: 281 and appropriate lower division music courses; or consent.

MUS 407 Music Cultures of the World (3) Folk, popular, and art music from major regions of the world, with emphasis upon Asia and the Pacific, representative styles and regional characteristics. Pre: junior standing or consent. DH

MUS 410 (Alpha) Ensembles (1) Performance of literature for ensembles and performing groups of various sizes and kinds; (B) Hawaiian; (C) University Chamber Singers; (D) piano-vocal collaboration; (E) composer-performer collaboration; (F) chamber music; (G) guitar; (K) jazz; (M) contemporary music; (N) theater music; (O) percussion; (P) digital and electronic musical arts; (Q) piano-instrumental collaboration. Repeatable unlimited times. A-F only for (E) and (Q). Pre: audition or consent.

MUS 411 (Alpha) Ethnic Music Ensembles II (1) 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) Asian; (J) Tahitian. Unlimited repeatable times. Pre: 311 in same section or consent; DH

MUS 412 Hula/Chant Ensemble II (2) Ancient style. Pre: 312 or consent.

MUS 413 Hula/Chant Ensemble III (2) Ancient style; hâlau protocol. Repeatable nine times. Pre: 412.

MUS 414 University Concert Choir (1) Performance of a capella and mixed choral works. Repeatable unlimited times. Pre: choral experience and consent. DA

MUS 415 Opera Workshop (V) Opera in performance. Styles and characterizations. Performance of scenes and one complete work. Repeatable unlimited times. Pre: upper division or consent. DA

MUS 416 (Alpha) University Symphony Orchestra (1) Performance of orchestra literature, including major works for chorus and orchestra, opera and dance; (B) symphony; (C) chamber orchestra. Repeatable unlimited times. Pre: audition or consent. DA

MUS 417 University Javanese Gamelan (1) Performance of joga and solo gamelan traditions; Ujon-Ujon, Wajang Kult, Wajang Wong. Repeatable unlimited times. Pre: 111F or consent. DA

MUS 419 (Alpha) University Band (1) Performance of literature, including works by contemporary composers. (B) symphonic wind ensemble; (C) symphonic band; (D) concert band; (E) marching band; (F) marching band percussion. Repeatable unlimited times. Pre: audition or consent. DA


MUS 421 Acting V: Musical Comedy (3) Essential training in skills required to perform in musicals. Students present scenes from musical comedies for criticism and review. Repeatable unlimited times. Pre: one of 231B, THEA 321, THEA 322, or consent; and/or audition. (Cross-listed as THEA 421) DA

MUS 422 Piano Repertoire I (1) Focused study on a specific area of piano literature. Extensive score study, analysis, performance practices, technique and listening lists will be studied. A-F only. Pre: 2 semesters of 232C or consent. Repeatable six times for different topics. (Alt. years)

MUS 423 Keyboard Skills I (2) Practical keyboard applications including transposition, keyboard harmonization, figured bass, improvisation, score reading and sight reading. A-F only. Pre: 282 and 2 semesters of 232C or consent. (Alt. years)

MUS 424 Keyboard Skills II (2) Continuation of 423. A-F only. Pre: 423 or consent.


MUS 441 Scoring Techniques for Films (3) Aspects of scoring original music for films. Use of small systems, and software production tools. Music production techniques (including Foley and sound effects) and music for television also covered. Repeatable one time. Pre: 341 or consent. (Alt. years)

MUS 450 Music Technology for Teachers (3) Studio course designed for music education majors or musicians interested in developing and utilizing technology resources to enhance the music teaching or learning process. A-F only. Pre: 286 or consent.

MUS 451 Perspectives on K-12 Music Education (2) Required for K-12 music education majors. Topics include music learning, classroom management, assessment, and national standards. A-F only. MUS ED majors only. Junior standing or higher. Pre: 250, 286, 288, and EDEP 311; or consent. (Fall only)

MUS 452 Advanced String Pedagogy (2) Study of instruction and pedagogical approaches to violin, viola, cello, and double bass in both individual and class settings. A-F only. Pre: 157 or consent. (Alt. years: spring)

MUS 454 Music in Special Education (3) Designed for music educators, elementary, and special education majors, or music educators interested in understanding and preparing to use music with special education students. Will be offered both as a campus and online course. A-F only. Pre: 353 or EDEP 311, or consent.

MUS 457 Asian and Pacific Music in Education (3) C course designed for music educators, elementary, and special education majors or musicians interested in understanding and preparing to use music with special education students. Will be offered both as a campus and online course. A-F only. Pre: 353 or EDEP 311, or consent.

MUS 461 (Alpha) Eras of Western Music History (3) Historical study from Monte-Carlo to the present. Pre: 265 and 266, or consent.

MUS 462 (Alpha) Topics in Music Literature (3) (B) symphonic music; (C) concertos; (D) chamber music; (E) choral music; (F) solo song; (G) wind band literature; (H) guitar literature. Repeatable one time for different alphas. Pre: 265 and 266, or consent.


MUS 465 Piano Literature I (1) Study of the evolution of piano literature from its precursors to the beginning of the 19th century; development of historical styles, intensive listening and analysis. Pre: 265 and 266, or consent.

MUS 466 Piano Literature II (2) Continuation of 465. Study of the evolution of piano literature from the beginning of the 19th century to the present day; development of historical styles, intensive listening and analysis. A-F only. Pre: 465 or consent. (Alt. years)

MUS 467 Music and Ethics (3) Studies music’s roles in religious traditions and politics, as identity formation, and music’s relationship with lyrics in a variety of forms. Readings approach these issues from the question of ethics. A-F only. Pre: 265 and 266, or consent. (Once a year)

MUS 472 Sound Systems of World Musics (3) Musical-theoretical study of world sound as defined by various cultures and development of aural analysis in world music. Pre: junior standing or consent.

MUS 473 History of Rock and Roll (3) An examination of rock and roll from various perspectives including economics, regionalism, freedom of expression. Pre: upper division standing or consent. DH

MUS 476 History of Rock and Roll and Roll (3) An examination of rock and roll from various perspectives including economics, regionalism, freedom of expression. Pre: upper division standing or consent. DH

MUS 478 (Alpha) Musical Cultures (3) The study of a musical culture area. (B) Hawai‘i; (C) China; (D) Japan; (E) Korea; (F) Indonesia; (G) Philippines; (H) India; (I) Polynesia; (P) Africa; (Q) other. Repeatable one time for different alphas. Pre: junior standing or consent. (H) Cross-listed as ASAN 478

MUS 479 Topics in Ethnomusicology (3) Problem-oriented cross-cultural investigation of music and music organization. Pre: junior standing or consent. DH

MUS 480 Composition for Music Major (1) Original composition; specific approaches to creative writing. Intended for music majors not majoring in composition. Repeatable one time. MUS majors only. A-F only. Pre: 286 and 288.

MUS 485 Intermediate Practicum in Music Composition (V) Creative writing beginning with small models. Repeatable unlimited times. Pre: 286 and 288, or consent.

MUS 486 Composition (3) Creative writing in larger forms. Composition majors only. Repeatable one time. Pre: 485 or consent.

MUS 488 Contemporary Techniques (2) Theoretical techniques in music of the 20th and 21st centuries; emphasis on writing as the synthesis of concepts. Investigation of important stylistic movements. Pre: 286 and 288.

MUS 495 Senior Project (1) Capstone project designed by student, who must find and work with faculty advisor before enrolling. Also subject to advance approval by departmental committee. Repeatable up to four credits. A-F only. Pre: senior standing and consent.

MUS 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.

MUS 565 Western Music History Review (3) Online course surveys representative composers, musical styles, and genres from the Western tradition. Repeatable one time. Pre: graduate standing and consent or departmental approval.

MUS 600 (Alpha) Seminar (3) Selected problems in (B) composition; (C) ethnomusicology; (D) music literature; (E) performance; (F) music education; (H) theory. Repeatable nine times. Pre: graduate standing or consent; also 661 for (D) and (E).
MUS 601 Advanced Topics in Music (V) Advanced topics in history, literature, theory, applied music, music education, and ethnomusicology; some in intensive modular format. Repeatable nine times. Pre: appropriate lower division music courses or consent and graduate standing.


MUS 649 College Level Teaching Practicum (1) Practical experience teaching at the college level. Examination of elements for successful college teaching. Repeatable two times. MUS majors only. Graduate students only. A-F only. Pre: consent.

MUS 651 Foundations of Music Education (3) Music teaching in their philosophic, aesthetic, social, historical, and psychological dimensions. Pre: graduate standing and consent.

MUS 655 Music in Childhood Education (3) Principles and programs in teaching music to children in early childhood settings and elementary school. Curriculum development, analysis of research, and current approaches. Pre: 355 or 354, teaching experience, and graduate standing.

MUS 657 World Musics in Undergraduate Education (2) Concepts and materials at junior college and undergraduate levels. Preparation for structuring and teaching courses in non-Western musics. Pre: graduate status in music and 107 or 407 (or concurrent).

MUS 659 Seminar in College Music Teaching (3) Examines components of good teaching, adult learning theories, course organization, methodological issues, and other music issues. For students planning a college teaching career in music. Pre: consent.

MUS 660 (Alpha) Studies in Music Literature (3) Detailed study by chronological period. (B) medieval; (C) Renaissance; (D) Baroque; (E) Classic; (F) Romantic; (G) 20th century. Repeatable in different alphabas. Pre: 670.

MUS 661 Bibliography and Library Resources in Music (3) Basic materials and techniques; includes retrieval techniques from online computer catalog. Pre: graduate standing or consent.

MUS 670 (Alpha) Regional Music (3) Musical content and historicosocial context of principal musical traditions. (B) Asia; (C) Oceania. Repeatable nine times. Pre: consent.

MUS 678 (Alpha) Advanced Problems in Ethnomusicology (3) B transcription of music performed at graduate level; full recital required. (B) voice; (C) piano; (D) organ; (F) recorder; (G) classical guitar; (H) violin; (I) viola; (J) cello; (K) double bass; (M) flute; (N) oboe; (O) clarinet; (P) bassoon; (Q) saxophone; (R) trumpet; (S) French horn; (T) trombone; (U) tuba; (X) euphonium; (Y) percussion; (Z) other. Repeatable two times.

MUS 680 (Alpha) Studies in Music Theory (3) (B) stylistic counterpart to 1700; (C) stylistic counterpart from 1700; (D) advanced analysis; (E) comparative theory; (F) history of theory; (G) contemporary techniques and resources; (H) atonal analysis and set theory; (I) Schenkerian analysis. Pre: 286 and graduate standing.

MUS 685 Intercultural Composition (3) Examination of compositional approaches, techniques, and characteristics of works with East Asian influences in Western compositional practices. Composing idiomatically for East Asian instruments. Repeatable one time. MUS majors only. Graduate students only. A-F only. Pre: graduate standing or consent.

MUS 687 Masters Composition Practicum (3) Original composition in all forms. Masters-level composition students only. Repeatable five times. A-F only. Pre: consent.

MUS 695 Plan B Master’s Project (V) Independent study for students working on a Plan B master’s project. A-F only. A-F only. Pre: consent.

MUS 699 Directed Work (V) Reading and research in ethnomusicology, musicology, music education; reading and practice in theory, composition, or performance. Repeatable unlimited times. Pre: consent of chair and department chair.

MUS 700 Thesis Research (V) Repeatable unlimited times.

MUS 701 (Alpha) Topics in Music (3) Advanced topics in musicology; theory, ethnomusicology, and music education. (B) psychology of music; (C) research in music education; (D) research methods in musicology; (E) advanced dictions for singers. Repeatable in different alphas. Pre: appropriate to topic or consent.

MUS 702 Seminar for Doctoral Students (V) Selected topics centering on areas pertinent to student’s degree needs and research interests. Pre: admission to PhD program in music or consent.

MUS 750 (Alpha) Seminar in Music Education (3) Selected topics in music education. (B) childhood; (C) adolescence/adults; (D) major issues. Pre: graduate standing and consent.

MUS 787 Doctoral Composition Practicum (3) Original composition in all forms. Doctoral-level composition students only. Repeatable five times. A-F only.

MUS 800 Dissertation Research (V) Repeatable unlimited times. Pre: candidacy for PhD degree and consent of dissertation chair.

APPLIED MUSIC

For information on sections, requirements, and costs, consult the music department.

Instruction is given in 14 individual lessons per semester, either one-half-hour lesson per week (1 credit hour) or one full-hour lesson per week (2 or more credit hours). Lessons are not made up unless instructor is notified a reasonable time in advance of the excused absence.

Registration for lessons and choice of teachers must be approved by the department chair.

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 or taken CR/NC.

MUS 230 (Alpha) Elementary Applied Music, Ethnic (V) Instruction in instrumental performance at elementary level. Study of works representative of literature. (B) koto; (C) shamisen; (E) Hawaiian chant; (F) shakuhachi; (I) other. Repeatable for four semesters. Pre: audition or consent.

MUS 231 (Alpha) Applied Music, Western (I) For nonmajors or music majors in secondary performance fields. Individual instruction in solo vocal or instrumental performance at advanced level. Representative works. (B) voice; (C) piano; (D) organ; (F) recorder; (G) classical guitar; (H) violin; (I) viola; (J) cello; (K) double bass; (M) flute; (N) oboe; (O) clarinet; (P) bassoon; (R) trumpet; (S) French horn; (T) trombone; (U) tuba; (X) euphonium; (Y) percussion; (Z) other. Repeatable for four semesters. Pre: audition or consent.

MUS 232 (Alpha) Applied Music, Western (V) For music majors or intended majors. Individual instruction in solo or instrumental performance at first performance level. Representative works. Weekly repertoire laboratory required. (B) voice; (C) piano; (D) organ; (G) classical guitar; (H) violin; (I) viola; (J) cello; (K) double bass; (M) flute; (N) oboe; (O) clarinet; (P) bassoon; (Q) saxophone; (R) trumpet; (S) French horn; (T) trombone; (U) tuba; (X) euphonium; (Y) percussion; (Z) other. Repeatable for six semesters. Pre: audition.

MUS 330 (Alpha) Advanced Applied Music, Ethnic (V) Individual instruction in instrumental and dance performance at advanced level. See 230 for list of sections. Repeatable six semesters. Pre: advancement to PhD program. Conducting. Repeatable for six semesters; repeatable five times, up to 12 credits for E. A-F only for E. MUS majors only for E. Juniors and seniors only for E. Pre: advancement from 231 or consent; any 231 or consent for E.

MUS 332 (Alpha) Applied Music, Western (V) For music majors. Individual instruction in solo vocal or instrumental performance at the junior level. Representative works. Weekly repertoire laboratory required. Half recital required to complete junior level. See 232 for list of sections. Repeatable for three semesters. Pre: four semesters of 232 and promotion by board examination.

MUS 432 (Alpha) Applied Music, Western (3) For music majors. Individual instruction in solo vocal or instrumental performance at the senior level. Representative works. Weekly repertoire laboratory required. Full recital required to complete this performance level. See 232 for list of sections. Repeatable for three semesters. Pre: two semesters of 332 and advancement by board examination.

MUS 635 (Alpha) Graduate-Level Applied Music (3) For students accepted for MMus in performance. Individual instruction in solo vocal or instrumental performance at graduate performance level. Representative works. (B) voice; (C) piano; (H) violin; (I) viola; (J) cello; (K) bass; (M) flute; (N) oboe; (O) clarinet; (P) bassoon; (Q) saxophone; (R) trumpet; (S) French horn; (T) trombone; (U) tuba; (X) euphonium; (Y) percussion; (Z) other. Repeatable two times.

MUS 636 Graduate Recital (V) For students accepted for MMus in performance. Individual instruction in solo vocal or instrumental performance at graduate level; full recital required. (B) voice; (C) piano; (H) violin; (I) viola; (J) cello; (K) bass; (M) flute; (N) oboe; (O) clarinet; (P) bassoon; (Q) saxophone; (R) trumpet; (S) French horn; (T) trombone; (U) tuba; (X) euphonium; (Y) percussion.

Native Hawaiian Health (NHH)

School of Medicine

NHH 450 Applied Health Disparities Research (V) Instruction on social determinants of health, issues of health equity, and how these issues can be addressed through research. Discussions and activities promote a greater understanding of health disparities research. Repeatable unlimited times. Pre: consent.

NHH 499 Directed Reading/Research (V) Individual reading and/or research. Repeatable unlimited times. Junior standing or higher. Pre: consent.

NHH 501 Scientific Basis of Medicine (2) Introduction to medical science stressing key historical figures and significant events to exemplify the development of scientific methods. Special emphasis on writing skills, health, culture and contributions of the Pacific. CR/NC only. Pre: admission to Imi Ho'ola Post-Baccalaureate Program.


NHH 503 Medical Biology I (11) (2 Lec, 2 Tuto- rial, 1 3-hr Lab) Foundation in medical sciences, including anatomy, physiology, microbiology, pathology, and pharmacology (focus on respiratory, cardiovascular, and urinary systems); develop critical thinking and problem-solving skills. Includes lectures, problem-based tutorials, and histology and gross anatomy labs. Pre: admission to Imi Ho'ola Post-Baccalaureate Program.

NHH 504 Medical Biology II (11) (2 Lec, 2 Tuto- rial, 1 3-hr Lab) Continuation of 503. Pre: 503.

NHH 505 Medical Biochemistry I (11) Provide background knowledge of chemistry, biochemistry, and molecular biology with emphasis in principles of biochemical processes as well as clinical correlations to medical conditions; develop critical thinking, standardized testing taking skills, and problem-solving skills. Pre: admission to Imi Ho'ola Post-Baccalaureate Program.

NHH 506 Medical Biochemistry II (6) Continuation of 505. Pre: 505.

NHH 513 Native Hawaiian Health and Traditional Healing (1) Introduction to Native Hawaiian health issues and traditional healing practices. MD majors only. CR/NC only. Pre: MDED 551 or consent.
Natural Resources and Environmental Management (NREM)

College of Tropical Agriculture and Human Resources

NREM 105 Environmental Service Learning I (2) Experiential service learning course for students participating in the Hawai‘i Youth Conservation Corps summer program as team members and leaders. Repeatable one time. Hawai‘i Youth Conservation Corps summer program students only. A-F only. (Summer only)

NREM 200 Environmental Service Learning II (3) Experiential service learning course for students participating in the Hawai‘i Youth Conservation Corps summer program as Hana Hou members. Hawai‘i Youth Conservation Corps summer program students only. A-F only. (Summer only)

NREM 203 Applied Calculus for Management, Life Sciences, and Human Resources (3) (2 Lec, 1 1-hr Lab) Applications of calculus (limits, continuity, derivatives, exponential and logarithmic functions, partials, integrals and integrals in business management, social sciences, and life sciences. Applies symbolic techniques and quantitative methods in problem solving, utilizes concepts of proof as a chain of inference and promotes development of reasoning skills and mathematical logic in bridging theory and practice. FS

NREM 210 Introduction to Environmental Science (3) Analysis of our environment with emphasis on understanding human activities and interactions of physical, biological, technological, and political components using scientific methods of inquiry. Food supply and safety, water quality, pollution control, biodiversity, environmental policy. Open to nonmajors. (Cross-listed as PEPS 210) DB

NREM 220 Agricultural and Resource Economics (3) Introduction to basic economics concepts, including demand, supply, exchange, market price and market equilibrium and policy for the uses of various natural resource endowments, especially in production agriculture, is included. A-F only. DS

NREM 301 Natural Resources Management (3) Biological aspects of natural resource management at local, national, and global scales. Topics covered include resource management of soil, water, forests, wetlands, coasts and wildlife. NREM majors only. A-F only. Pre: 210, CHEM 151 or higher, BIOL 172; or consent. (Spring only) DB

NREM 301L Natural Resources Management Lab (1) (3 1-hr Lab) Laboratory and field methods covering biological and physical principles and concepts in natural resource management. Emphasis on basic field measurement techniques and computer skills commonly used in managing natural resources. A-F only. Co-requisite: 301. (Spring only) DY

NREM 302 Natural Resource and Environmental Policy (3) Introduction to government policies and laws in natural resources and the environment, specifically in production agriculture, is included. Focus on understanding relationships and interactions of physical, biological, technological, and political components using scientific methods of inquiry. Repeatable two times, or up to 27 credits. Pre: consent.

NREM 699 Directed Reading/Research (V) Individual reading and/or research. Repeatable unlimited times. Graduate standing only. Pre: consent. Key to symbols & abbreviations: see the first page of this section.

NREM 202 Natural Resource and Environmental Management of Tropical Soils (3) (2 Lec, 1 3-hr Lab) Origin, development, properties, management of tropical soils; classification of Hawai‘ian soils. A-F only. Minimum prerequisite grade of C or higher. Pre: CHEM 161 and 161L, or consent. (Fall only) (Cross-listed as TPSS 304) DP

NREM 204 Fundamentals of Soil Science (4) (3 Lec, 1 3-hr Lab) Origin, development, properties, management of tropical soils; classification of Hawai‘ian soils. A-F only. Minimum prerequisite grade of C or higher. Pre: CHEM 161 and 161L, or consent. (Fall only) (Cross-listed as TPSS 304) DP

NREM 406 Environmental Ethics (3) Application of traditional moral theories to environmental issues. Development and evaluation of specific environmental ethical theories. Application of ethical theories to environmental management. A-F only. Pre: 210 or BIOL 101 or higher or GEG 101 or GG 101 or higher; and 220 or one ECON course or two DS courses. DS

NREM 304 Fundamentals of Soil Science (4) (3 Lec, 1 3-hr Lab) Origin, development, properties, management of tropical soils; classification of Hawai‘ian soils. A-F only. Minimum prerequisite grade of C or higher. Pre: CHEM 161 and 161L, or consent. (Fall only) (Cross-listed as TPSS 304) DP

NREM 306 Environmental Ethics (3) Application of traditional moral theories to environmental issues. Development and evaluation of specific environmental ethical theories. Application of ethical theories to environmental management. A-F only. Pre: 210 or BIOL 101 or higher or GEG 101 or GG 101 or higher; and 220 or one ECON course or two DS courses. DS

NREM 310 Statistics in Agriculture and Human Resources (3) Theory, applications, and presentation of statistical reasoning. Descriptive, probability, and inferential reasoning for one-variable analysis with extensions to multiple variable cases. A-F only.

NREM 311 Current Topics in Plant Science (1) An undergraduate seminar that provides the presentation and discussion of current research topics and relevance to students preparing for careers in applied plant sciences. Oral focus designation. A-F only. Pre: 210 or TPSS 200, or consent. (Cross-listed as TPSS 311)

NREM 341 Accounting and Financial Analysis (3) Principles and management of agricultural accounting. Preparing and interpreting financial statements. Sources and costs of credit, capital budgeting, tax management, estate planning. Repeatable one time. A-F only. Pre: 220 or ECON 130 or consent. (Spring only)

NREM 351 Enterprise Management (3) Introduction of practical concepts and methods used in business management. Introduce broad range of business strategies. Understand the critical role each strategy plays. Facilitate student’s practice of analytical and critical thinking through case studies. (Cross-listed as TPSS 351)

NREM 358 Basic Environmental Benefit Cost Analysis (3) Fundamentals of cost-benefit analysis with applications to environmental impact and projects; case studies. Pre: 220 or ECON 130 or consent. DS

NREM 380 Tropical Forestry/Agroforestry (3) (2 Lec, 1 3-hr Lab) Biophysical and socioeconomic description of major tropical forestry and agroforestry management systems, including Hawai‘i and the Pacific Basin. The role of traditional land use, pressures from regional and global development, and program creation management. Forest systems for rural communities will be discussed. Pre: CHEM 151 or higher and BIOL 171 or higher. (Alt. years) Spring) DB

NREM 399 Directed Study (V) Limited to exceptional students with qualifications to carry on advanced study. Pre: consent.

NREM 420 Community and Natural Resource Management (3) Theory and tools for working with groups and communities in the management of natural resources is presented using a participatory framework. Topics include sustainable development, extension programming, participatory learning and communication, evaluation, and conflict management. Pre: two social science courses or consent. (Fall only) DS

NREM 429 Spreadsheet Modeling for Business and Economic Analysis (3) Introduction to quantitative decision-making methods for effective management and strategic analysis of supply chain, scheduling, logistics, risk analysis, inventory, and forecasting. Emphasis on problem identification, model formulation and solution, and interpretation and presentation of results. Pre: MATH 150, and 310 or ECON 321; or consent. (Once a year) (Cross-listed as ECON 429 and TPSS 429) DS

NREM 450 Wildlife Ecology and Management (3) Lecture-based overview of the history, ecology, and management of wildlife species (i.e., terrestrial vertebrates) from local to global scales. One or two field trips may be required. Class size limited to 25 students. Pre: BIOL 172 or consent. (Alt. years)

NREM 461 Soil and Water Conservation (3) Past and present issues with soil and water conservation will be examined. Principles of erosion, conservation tillage, irrigation, and drainage will be discussed. Land-based threats to coastal zones and watershed management will also be covered. Pre: 301 or 304. DP

NREM 463 Irrigation and Water Management (3) Basic soil-water-plant relationships, irrigation water requirements, irrigation efficiencies, different methods of irrigation, and management of an irrigation system, fertigation and impact of irrigation on soil and water quality. Pre: 203 (or equivalent) and NREM/TPSS 304 (or equivalent), or consent. (Alternate years) DP

NREM 467 Natural Resources Conservation Planning (3) Combined lecture and hands-on field course on theory and practice of natural resource conservation planning. Includes individual and group projects. Pre: undergraduate junior or senior status or graduate standing. Recommended: at least one upper division course in soils, natural resources, planning, physical geography, or related area; or consent. (Alt. years) DP

NREM 475 Plant Nutrient Diagnosis in the Tropics (3) Designed for students to identify essential nutrients required by plants; diagnose nutrient disorders in plants; and propose environmentally sound solutions to correct disorders. Pre: 304/TPSS 304 (or concurrent) and BIOL 172. (Cross-listed as TPSS 475)

NREM 477 Geographic Information Systems for Resource Managers (4) Combined lecture-lab on the basic concepts and principles of geographic information systems, remote sensing, digital photogrammetry, and spatial positioning system. Practical skills to be developed by solving real natural resources and environmental problems. Pre: either 310 or MATH 140 or MATH 373; and 301; or consent. (Once a year)

NREM 480 Applied Forest Ecology (3) Application of ecological theory to sustainable management of forest resources in Hawai‘i and beyond, including silviculture (production of timber and non-timber forest products), restoration (reestablishing damaged or degraded forests), and conservation (conserving existing forest resources). A-F only. Pre: 301 and 380 or consent. (Alt. years)

NREM 491 Topics in Natural Resources and Environmental Management (V) Study and discussion of current issues and trends in natural resource management with an approved cooperating supervisor/employer. Pre: consent.

NREM 492 Internship (1) Integration and application of academic knowledge and critical skills emphasizing professional development. Placement with an approved cooperating supervisor/employer. Pre: 301.

NREM 492I Internship Experience (3) Internship work experience for NREM majors. NREM majors only. A-F only. Pre: 301 (or concurrent) and consent.

NREM 494 Environmental Problem Solving (3) (2 Lec, 1 1-hr Lab) Senior-level capstone for NREM
and related majors. Ecosystem management within problem-solving context. Applications of research and analytical methods, management tools to case studies. Focus on student teamwork and oral communication. NREM majors only. A-F only. Pre: senior in NREM (or consent) and 310. (Once a year)
NREM 499 Directed Study (V) Repeatable up to four credits. Pre: senior standing and consent.
NREM 500 Master’s Plan B/C Studies (V) Enrollment for degree completion. Repeatable up to 3 credits. Pre: master’s Plan B or C candidate and consent.
NREM 600 Evaluation of Natural Resource Management (3) Critical evaluation of natural resource management approaches. Emphasis on the physical, chemical, and biological aspects within an environmental context. Pre: graduate standing or advanced undergraduate standing, and consent.
NREM 601 Economic Analysis of Natural Resource Management (3) Lecture/discussion providing an economic framework for assessing natural resource management projects and environmental policies. Use of case studies to demonstrate applications of the framework in selected subject areas. (Spring only) Pre: one ECON course.
NREM 605 Research Skills (2) Assists the student in developing and requiring to write a research grant and design a research proposal. NREM majors only. A-F only. (Fall only).
NREM 611 Resource and Environmental Policy (3) Exploration of institutional and policy dimensions of natural resource development, management, allocation, markets and pricing, focusing on their environmental impacts. Emphasis on policy analysis using case studies and empirical findings. Original paper required. A-F only. Pre: ECON 300 or ECON 301, or consent. (Fall only)
NREM 612 Predicting and Controlling Degradation in Human-Dominated Terrestrial Ecosystems (3) Historic, present, and projected trends in understanding and managing human-dominated ecosystems: predicting, measuring and mitigating degradation especially in terrestrial ecosystems with a focus on small volcanic islands in tropical settings. A-F only. Pre: 301 and 304 (or equivalent) and 600. Recommended 461, or consent. (Fall only).
NREM 627 Applied Microeconomic Analysis (3) Economic applications to the agricultural and non-agricultural industries are emphasized. Econometric techniques are used to estimate demand, supply, production and cost functions which are analyzed in terms of economic theory and market information. A-F only. Pre: ECON 302 and ECON 627, or consent.
NREM 631 Sustainable Agriculture Seminar (2) Critical evaluation of existing and alternative cropping systems from a long-term perspective. Value conflicts and resolution. Pre: graduate standing or advanced undergraduate standing, and consent.
NREM 637 Resource Economics (3) Analysis of problems of development and management of natural resources with emphasis on resources in agriculture and role in economic development. Pre: ECON 608 and ECON 629. (Cross-listed as ECON 637)
NREM 652 Information Research Skills (1) Examines the use and information technology for scholarly investigation in support of scientific research; provides experience utilizing and critically evaluating a variety of print and electronic sources in basic and applied research. Pre: consent. (Cross-listed as ANSC 652, FSHN 652, and TPSS 652)
NREM 658 Advanced Environmental Benefit-Cost Analysis (3) Advanced environmental benefit-cost analysis will require that proficiency be demonstrated. Topics and address topics related to sustainability, including income equality, non-market goods, risk, cost of public funds, and the social discount rate.
NREM 660 Hydrologic Processes in Soils (3) (2 Lec. 1-3 hr-Lab) Hydrologic properties in soils and the processes involved in water infiltration drainage and solute transport. Emphasis on key parameters required for modeling. Recommended. CEE 424 or consent. (Fall only) (Cross-listed as BE 664 and CEE 625)
NREM 662 Watershed Hydrology (3) Application of basic hydrologic processes and management practices occurring on small islands watersheds. Pre: 203 or equivalent and 304 or equivalent; or consent. (Once a year)
NREM 664 Small Watershed Modeling (3) Introduction to process-based modeling of watershed with emphasis on model applications. Deals with the characterization of small watersheds, hydrologic and pollutant transport processes. Pre: CEE 424 (or concurrent) or GG 425 (or concurrent) or BS degree from NREM, or consent. (Spring only)
NREM 665 Coastal and Wet and Ecology and Management (3) Mangroves, sea grass beds, and coral reefs. Emphasis on the hydrology, biogeochemistry, productivity, and community dynamics of these systems. Response to perturbations and management strategies will also be discussed. Pre: advanced undergraduate coursework in hydrology, soils, and ecosystem ecology recommended. (Alt. years)
NREM 671 International Agricultural Systems (2) Analysis of trends and strategies in international agricultural research and development. International agricultural research centers (IARC), Food and Agriculture Organization (FAO), university networks and consortia, and private voluntary organizations (PVOs). Pre: graduate standing or advanced undergraduate standing, and consent.
NREM 677 Remote Sensing of the Environment (3) Fundamentals, techniques, and applications of remote sensing for natural resource assessments and environmental monitoring. Lab consisting of field radiometric exercises, computer modeling of energy-matter interaction, processing, and analysis of remotely sensed imagery. Pre: one physics course (e.g. PHYS 151), one calculus course (e.g. 203), and one statistics course (e.g. 406). Consen- mended: either GEOG 470 or GG 460 or one introductory remote sensing course. (Alt. years)
NREM 680 Ecosystem Ecology (4) (2 Lec. 1-3 hr Lab) Principles of ecosystem ecology with emphasis on tropical forests, human impacts, and global environmental change. Factors controlling ecosystem structure, productivity, nutrient cycling, plant-soil-atmosphere interactions, and energy balance. Field and laboratory methods in ecosystem science. Pre: advanced undergraduate coursework in ecology and soil science; graduate standing; and consent. (Alt. years: spring)
NREM 682 Restoration Ecology (3) Graduate seminar on restoration ecology. Application of ecological theory to restoration practice. Emphasis on restoration of structure and function in degraded terrestrial ecosystems using case studies from Hawai‘i and around the world. Pre: advanced undergraduate ecology course and graduate standing, or consent. Completion of 680 recommended, but not required. (Alt. years)
NREM 685 Landscape Ecology (3) Focuses on the history, theories, and contemporary views of landscapes; including scale, land cover, land use, landscape metrics, disturbance regimes, land management, landscape change, the relationship of landscapes to species, and modeling. Pre: graduate students, or consent. (Alt. years)
NREM 690 Conservation Biology (3) Theories and concepts of ecology, evolution and genetics for conservation of biological diversity. Topics will include restoration ecology, management planning, laws and policies, and ecosystems. Pre: 305, 375 and either ZOOL 480 or BOT 462; and either ZOOL 410, 439, 620, 623, BOT 453, 454, 456, or 492. (Cross-listed as BOT 690 and ZOOL 690)
NREM 694 Advanced Topics in Natural Resource and Environmental Management (V) Capstone experience for NREM majors. Pre: 600 (or concurrent), 601, 605 (or concurrent), a graduate methods course, and at least 12 graduate elective credits. (Fall only)
NREM 696 Master’s Plan B Capstone Experience (3) Capstone experience for NREM Master’s Plan B students. NREM majors only. A-F only. Pre: 695 or concurrent.
NREM 699 Directed Research (V) Repeatable unlimited times. Pre: graduate standing.
NREM 700 Thesis Research (V) Repeatable unlimited times.
NREM 701 Research Seminar (I) Presentation and discussion of student research proposals, theses and dissertations, and research presentations by NREM faculty, students, and invited speakers. A-F only. Pre: consent.
NREM 800 Dissertation Research (V) Repeatable unlimited times.

Natural Sciences (NSCI)

College of Natural Sciences

NSCI 101 Natural Sciences and Life-Pulling the Puzzles Apart (1) Journey through the Natural Sciences finding fun, excitement, and success in science, mathematics, engineering, medicine, and all that is the natural sciences. Focus upon challenging worldviews of belief, invention, and systems thinking.
NSCI 501 Seminar for Science Teachers (V) Seminar and discussions of current and significant topics and problems in science where teachers can exchange new and innovative teaching ideas and strategies. Repeatable. Pre: in-service teachers or consent.
NSCI 503 Computers in Classroom (V) Combined lecture, laboratory and discussion on the use of computers as a teaching tool in the classroom. To be taught in a hands-on manner appropriate for the science teachers. Repeatable. Pre: in-service teachers or consent. Repeatable one time.
NSCI 504 Mathematics Workshop for Teachers (V) An in-depth study of topics from intermediate and high school mathematics. Restricted to in-service teachers or consent. Repeatable one time. A-F only.
NSCI 505 Physics Workshop for Teachers (V) Major concepts of physics taught by means of hands-on conceptual activities for elementary and secondary teachers. Restricted to in-service teachers, or consent. Repeatable one time. (Cross-listed as PHYS 505)
NSCI 619 Seminar on Science Teaching (2) Effective teaching methods; organization of courses, lectures, laboratory exercises; development and evaluation of examinations; computers and audio-visual aids. Open to graduate students in various science disciplines. Repeatable one time. (Cross-listed as ZOOL 619)
See also the biology professional development course, BIOL 501, under the Biology (BIOL) course listing in this section of the Catalog.

Nursing (NURS)

School of Nursing and Dental Hygiene

The minimum required grade for undergraduate pre-requisite courses is C or better, unless otherwise specified. Demonstrating knowledge competency in graduate courses requires a passing grade of B- or 80%. A grade of C+ or less will not count towards degree requirements, unless otherwise specified.
NURS 200 Introduction to Professional Nursing I (1) This first level course focuses on nursing practice and education. Professional responsibilities in the practice of nursing are emphasized. NURS majors only. A-F only. Pre: admittance into HS-DEN program. (Fall only)
NURS 201 Introduction to Professional Nursing II (1) This second level course builds on the knowledge and skills gained in the first level and focuses on professional responsibilities in nursing practice and education. NURS majors only. A-F only. Pre: admittance into DEN program. (Spring only)
NURS 210 Health Promotion Across the Lifespan (3) Focuses on a health promotion model of care, assessment, and communication skills. It introduces the nurse’s roles, code of ethics, and evidence-based practice. A-F only. Prerequisite: admission to the School of Nursing and Dental Hygiene, or consent. Co-requisite: 210L, 211, and 212.

NURS 210L Health Promotion Across the Lifespan Lab (6) Clinical course focuses on a health promotion model of care, assessment, and communication skills. Introduces nurse’s roles, code of ethics, and evidence-based practice. NURS majors only. CR/NC only. Co-requisites: 210, 211, and 212.

NURS 211 Professionalism in Nursing (2) Professional responsibilities of nursing practice are examined within the context of nursing practice and education, legal and ethical issues, contemporary issues, and nursing roles. NURS majors only. A-F only. Prerequisite: admission to the School of Nursing and Dental Hygiene, or consent. Co-requisite: 210, 210L, and 212.

NURS 212 Pathophysiology (3) Focuses on pathophysiological concepts that are basic to understanding illness and injury and the corresponding spectrum of human responses, which serve as a foundation for the formulation of clinical decisions and care planning. NURS majors only. A-F only. Prerequisite: admission to the School of Nursing and Dental Hygiene, or consent. Co-requisite: 210L, 210L, and 211.

NURS 220 Health and Illness I (3) Focuses on nursing assessment to support identification of risk factors and detection/prevention of complications from illness. NURS majors only. A-F only. Prerequisite: 210L, 210L, 211, and 212, or departmental approval. Co-requisite: 220L.

NURS 220L Health and Illness I Lab (6) Clinical course focuses on using nursing assessment to support identification of risk factors and detection/prevention of complications from illness. NURS majors only. A-F only. Prerequisite: admission to the School of Nursing and Dental Hygiene, or consent. Co-requisite: 210L, 210L, and 211. Co-requisite: 220L.

NURS 301 Introduction to Evidence Based Practice and Health Promotion (3) Provides an introduction to the HSNC Competencies and spiral of concepts and basis is on the assumption of student responsibility for learning. Focuses on research evidence to support nursing care. NURS majors only. A-F only.

NURS 306 Statistics in Nursing Research (3) Focuses on the basic concepts and applications of statistics as applied to nursing research. NURS majors only. A-F only. Prerequisite: admission to the Executive RN to BS in Nursing Program. (Summer only)

NURS 320 Health and Illness II: Family Health (4) Nursing care and health promotion for maternal-newborn and pediatric clients and families in the acute care and community settings. Utilization of family theories and assessment tools for providing culturally sensitive, client-centered care. NURS majors only. A-F only. Prerequisite: 220 and 220L. Co-requisite: 320L.

NURS 320L Health and Illness II: Family Health Lab (6) Nursing care and health promotion for maternal-newborn and pediatric clients and families in the acute care and community settings. Utilization of family theories and assessment tools for providing culturally sensitive, client-centered care. NURS majors only. CR/NC only. Prerequisite: 220 and 220L. Co-requisite: 320.

NURS 340 Contemporary Ethical Issues in Health Care (3) Explores contemporary ethical issues and their implications for health care. Focus on decision-making in professional practice and social policy formation. Prerequisite: Open to non-nursing majors with consent.

NURS 343 Gerontology: Its Nursing Implications (3) Explores historical, social, psychological, and ethical issues in the aging process. Focus on the impact of age-related differences on individual and community settings. NURS majors only. CR/NC only. Co-requisite: 475 or consent.

NURS 344 Nursing in the Multicultural Milieu (3) Explores elements of values, beliefs, attitudes, family organization, lifestyles, and health practices in different ethnic groups to health-care and nursing practice. Prerequisite: 220L, or consent. NURS majors only. CR/NC only. Co-requisite: 360L.

NURS 360 Health and Illness III (3) Focuses on complex situations requiring strong recognition skills, and rapid decision making. The evidence base supporting assessment and nursing intervention is explored. This course may be taken with 320L or departmental approval. Co-requisite: 360L.

NURS 360L Health and Illness III Lab (6) Clinical course focuses on complex situations requiring application of strong recognition skills and rapid decision making. Evidence base supporting assessment and intervention is explored. NURS majors only. CR/NC only. Prerequisite: 320 and 320L. Co-requisite: 360L.

NURS 361 Health Education and Promotion (2) Provides an overview of the concepts and application of health education and health promotion theories and principles as applies to individuals, groups, and the larger public. Prerequisite: open to non-nursing majors with consent. (Fall only) (Cross-listed as DH 361).

NURS 362 Professionalism in Nursing II (1) Continuation of current issues in nursing and health care and nursing roles. Principles of organizational structure, leadership, decision-making, priority setting, and change will be discussed. NURS majors only. Pre: 320L, or departmental approval. Co-requisite: 360L.

NURS 363 Introduction to Nursing Research (3) Introduction to the research process and understanding of the applicability of the scientific approach to nursing. Repeatable one time. NURS majors only. A-F only. Prerequisite: College-level statistics course.

NURS 399 Directed Reading/Research I, II, (V) Limited to juniors and seniors in nursing.

NURS 402 Student Ambassador Program (2) Focuses on professional leadership development, mentorship, and professional skills for nurses. Students learn to be representatives between the Department of Nursing and alumni, prospective students, and the general public. NURS majors only. A-F only. Prerequisite: one semester as a Nursing Student Ambassador.

NURS 411 NCLEX Review (2) Overview of the NCLEX-RN licensure examination and regular, systematic practice in taking multiple choice examinations. Prerequisite: open to non-nursing majors with consent.

NURS 420 Cooperative Education in Nursing (V) A two-semester cooperative education in professional role development in addition to paid work experience in nursing at a local agency. Upper division NURS majors only. Repeatable one time. CR/NC only. Prerequisite: 360L.

NURS 421 Summer Internship (3) Summer practicum experience for students to learn the role of the professional nurse by building on previously learned knowledge and skills in the nursing program. Repeatable two times. NURS majors only. CR/NC only. Prerequisite: 360L or 360L, or consent. (Summer only)

NURS 431 Complementary and Alternative Therapies (3) Survey of complementary and alternative therapies used for health promotion of individuals and groups. NURS majors only. Prerequisite: Open to non-nursing majors with consent.

NURS 432 Veteran-Military Culture, Education, and Health Care Needs (3) Provides an overview of the Veteran-Military population and their unique culture, educational, and health care needs. Open to non-nursing majors. A-F only.

NURS 439 Management for Health Professionals (3) Explores basic management concepts. Emphasizes problem solving methods as a means of determining situationally appropriate actions in instructional and community settings. Upper division NURS majors only. Senior standing or higher. Co-requisite: 475 or consent.

NURS 450 Community, Public, and Global Health Nursing (2) Theory course focuses on community, public, and global health nursing with an emphasis on strategies applied to improve health and decrease health inequities at the local as well as national and international levels. NURS majors only. A-F only. Prerequisite: 360, 360L, and 363. Co-requisite: 465L.

NURS 450L Community, Public, and Global Health Nursing Lab (3) Clinical course focuses on community, public, and global health nursing with an emphasis on strategies applied to improve health and decrease health inequities at the local as well as national and international levels. NURS majors only. CR/NC only. Prerequisite: 360, 360L, and 363. Co-requisite: 465, 465L, and 465L.

NURS 452 Cultural Aspects of Health Management in Populations Indigenous to Hawai‘i, the Pacific, and Asia (3) Focuses on cultural and social issues that influence health management in indigenous populations of Hawai‘i, the Pacific, and Asia, with an emphasis on development of culturally sensitive strategies to promote and improve health management. Repeatable one time. NURS majors only. Undergraduate majors only. A-F only.

NURS 453 Introduction to Genetics in Nursing Practice (3) Fundamentals of genetics and genomics, including principles of inheritance, mechanisms of cells and development, chromosome structure and function, and implications on health. Includes overview of topics relevant to genetics/genomics in the clinical setting. NURS majors only. A-F only. Prerequisite: 212, 220, 220L, and 363.

NURS 460 Complex Nursing and Leadership (4) Theory course emphasizes the judgments, knowledge, and skills necessary for nursing practice, including case management and quality management experiences. Focuses on complex clinical judgments, interdisciplinary team functioning, and leadership. NURS majors only. A-F only. Prerequisite: 450 and 450L. Co-requisite: 460L.

NURS 460L Complex Nursing and Leadership Lab (6) Clinical course emphasizes the knowledge and skills necessary for nursing practice, including case management and quality management experiences. Focuses on complex clinical judgments, interdisciplinary team functioning, and leadership. NURS majors only. CR/NC only. Prerequisite: 450 and 450L. Co-requisite: 460L.

NURS 461 Advanced Pathophysiology and Neurobiology (3) Provides an advanced understanding of pathophysiological mechanisms in neurological systems underlying human illness across the lifespan. Provides a foundation for formulating clinical decisions and therapeutic plans of care to promote disease prevention and health promotion. NURS majors only. A-F only. (Fall only)

NURS 462 Community Health Nursing for Executive RN (3) Theory course focuses on community health nursing with an emphasis for the Executive RN on strategies applied to improve health and decrease health inequities at the local as well as national and international levels. NURS majors only. A-F only. Prerequisite: 301 and 306. Co-requisite: 363 and 462L.

NURS 462L Community Health Nursing for Executive RN Field Work (3) Field work focuses on community health nursing with an emphasis for the Executive RN on strategies applied to improve health and decrease health inequities at the local as well as national and international levels. NURS majors only. CR/NC only. Prerequisite: 363 and 462L.

NURS 465 Psychiatric-Mental Health Nursing (3) Examination of human responses to psychiatric and mental illness in relation to physiologic, psychological, social, cultural, and environmental factors. Explores self-awareness, therapeutic communication, and holistic, individualized health-related outcomes. NURS majors only. A-F only. Prerequisite: 360, 360L, and 363. Co-requisite: 465L, 450, and 450L.

NURS 465L Psychiatric-Mental Health Nursing Lab (3) Application of the nursing process involving human responses to psychiatric and mental illness in relation to physiologic, psychological, social, cultural, and environmental factors. Emphasis on self-awareness, therapeutic communication, and holistic, individualized health-related outcomes. NURS majors only. A-F only.
majors only. CR/NC only. Pre: 360, 360L, and 363. Co-require: 465, 450, and 450L.
NURS 475 Complex Nursing Practice (2) Examination of continuity of care for clients with complex needs within the health care system. Emphasis on quality and safety management. All required courses scheduled within the full-time or decurricular curriculum plan for a given semester must be successfully completed with credit before progressing to the following courses. NURS majors only. A-F only. Co-require: 439 and 475L.
NURS 475L Complex Nursing Practice Lab (5) Delivery of comprehensive nursing care to clients with complex needs in community and/or acute care settings. Emphasis on quality management, continuity of care, and NURS majors only. A-F only. Co-require: 439 and 475L.
NURS 481 Nursing Honors Research Project (3) Involves directed, mentored research study for SONDH Honors students with their honors advisor. The course grade depends on meeting objectives negotiated each course semester. Repeatable three times. NURS majors only. A-F only. Pre: acceptance into the Honors Program.
NURS 499 Directed Reading and Research (3) Planned individualization of research or specialization area related to interprofessional collaborative practice. Repeatable one time. Senior undergraduate NURS students only. Pre: consent.
NURS 500 Master’s Plan B/C Studies (1) NURS 501 Professionalism in Nursing (2) Introduction to nursing and leadership in the field. Will explore contemporary nursing issues and research. Strategies to foster adherence to a professional code of ethics in practice will be examined. NURS majors only. Admission into GEPN only. A-F only. (Once a year)
NURS 502 Pathophysiology (3) Web-enhanced on pathophysiologic concepts as a basis of illness and injury and the corresponding spectrum of human responses to illness and injury. Preparation for the formulation of clinical decisions and care planning. NURS majors only. Admission into GEPN only. A-F only. (Once a year)
NURS 503 Pharmacology for Nursing Practice (3) Essential principles of pharmacology using a pathophysiologic approach with emphasis on administering medications and evaluating their effects. NURS majors only. Admission into GEPN only. A-F only. Co-require: 501, 502, 504, 504L, 505, 505L. (Once a year)
NURS 504 Health Assessment (2) Concepts/theories of health assessment, data collection, and analysis to distinguish between health/wellness, risk factors or health deviations across the lifespan. Attention to principles of care, ethics, and shared decision-making. NURS majors only. Admission into GEPN only. A-F only. Co-require: 501, 502, 503, 504L, 505, 505L. (Once a year)
NURS 504L Health Assessment Lab (2) Application of assessment skills in drug lab and clinical settings, with attention to principles of communication, interviewing and physical examination skills. NURS majors only. Admission into GEPN only. CR/NC only. Co-require: 501, 502, 503, 504, 505, 505L. (Once a year)
NURS 505 Foundations of Nursing Science (2) Nursing process and scientific based nursing interventions to meet basic human needs using basic psychomotor skills, assessment, intervention, and evaluation activities. NURS majors only. Admission into GEPN only. A-F only. Co-require: 505L. (Once a year)
NURS 505L Foundations of Nursing Science and Practice Lab (5) Application of the nursing process and scientific based nursing interventions to meet basic human needs using basic psychomotor skills to support assessment, intervention, and evaluation activities. NURS majors only. Admission into GEPN only. CR/NC only. Pre: 505, 505L. (Once a year)
NURS 507 Bio-Behavioral Health Nursing (2) Biopsychosocial theories of human behavior related to function, alteration, and/or disruption of mental processes; reviews current knowledge related to nursing care, psychiatric treatment/psychosocial rehabilitation of identified mentally ill adults/children and their families. NURS majors only. Admission into GEPN only. A-F only. Co-require: 507L. (Once a year)
NURS 507L Bio-Behavioral Health Nursing Clinic/Lab (2) Application of current knowledge regarding human behavior related to function, alteration, and/or disruption of mental processes; applies current knowledge related to nursing care, psychiatric treatment/psychosocial rehabilitation of identified mentally ill adults/children and their families. NURS majors only. Admission into GEPN only. CR/NC only. Co-require: 507L. (Once a year)
NURS 508 Nursing Care of Childbearing Families (2) Introduction to the theoretical concepts of holistic nursing care of the perinatal family. Women’s and men’s health issues are discussed. NURS majors only. Admission into GEPN only. A-F only. Co-require: 508L. (Once a year)
NURS 508L Nursing Care of Childbearing Families Clinic/Lab (2) Application of the nursing care of the mother and family. The student will apply clinical and theoretical concepts of holistic nursing care for women experiencing customary and complicated perinatal processes. NURS majors only. Admission into GEPN only. CR/NC only. Co-require: 508L. (Once a year)
NURS 509 Nursing Care of Children and Families (2) Examines the bio/psycho/social response of the child and family to health and illness, as well as nursing care for acute and chronic conditions. Lab course taken concurrently: NURS majors only. Admission into GEPN only. A-F only. Co-require: 509L. (Once a year)
NURS 509L Nursing Care of Children and Families Clinic/Lab (2) Accompanies and supports Pediatric Nursing to provide educational experiences in the hospital and/or community settings. NURS majors only. Admission into GEPN only. CR/NC only. Co-require: 509L. (Once a year)
NURS 513 Acute Care Nursing (4) Addresses the bio/psycho/social human health response to a wide range of conditions. Health promotion, risk reduction and disease detection and nursing care treatment in the acute setting will be covered. NURS majors only. Admission into GEPN only. A-F only. Co-require: 513L. (Once a year)
NURS 513L Acute Care Nursing Lab (5) Application of the bio/psycho/social human health response to a wide range of conditions. Application of health promotion, risk reduction and disease detection and nursing care treatment in the acute setting. NURS majors only. Admission into GEPN only. CR/NC only. Co-require: 513L. (Once a year)
NURS 517 Clinical Immersion to Nursing Practice (3) Examination of continuity of care for clients with complex needs in community and/or acute care settings. Leadership, management, and quality improvement in the clinical setting. Admission to GEPN only. A-F only. Pre: 504, 505, 507, 508, 509, and 513. Co-require: 517L.
NURS 517L Clinical Immersion to Nursing Practice Lab (5) Deliver comprehensive nursing care to clients with complex needs in community and/or acute care settings. Leadership, management, and quality improvement in the clinical setting. Admission to GEPN only. A-F only. Pre: 504, 505, 507, 508, 509, and 513. Co-require: 517L.
NURS 518 Introduction to Community and Public Health Nursing (2) Introduces community and public health nursing with an emphasis on application to nursing care in community and public health settings. Admission to GEPN only. A-F only. Pre: completion of 501, 502, 503, 504, 504L, 505, and 505L (with a minimum grade of B- or better for 501, 502, 503, 504, and 505; CR for 504L and 505L). Co-require: 518L. (Spring only)
NURS 518L Introduction to Community and Public Health Nursing Lab (3) Application of health promotion, risk reduction, and disease prevention and detection and nursing care treatments in the community setting. Admission to GEPN only. CR/NC only. Pre: completion of 501, 502, 503, 504, 504L, 505, and 505L (with a minimum grade of B- or better for 501, 502, 503, 504, and 505; CR for 504L and 505L). Admission into GEPN only.
NURS 560 Epidemiology for Advanced Nursing Practice (3) Introduction to epidemiologic principles and methods, with an emphasis on its application to nursing practice. Students taking for one credit will focus on application of epidemiology to advanced nursing practice. NURS majors only. A-F only. (Once a year)
NURS 565 Health Promotion and Disease Prevention (3) Teaching and learning concepts applied to health promotion and prevention of common health and illness conditions in diverse cultural, ethnic, and spiritual issues surrounding genetic disease, genetic testing, and living with an inherited condition. Repeatable one time. Pre: graduated standing or consent.
NURS 609 Health Policy (3) Review of contemporary national health policies, issues and concerns; and international comparison of health policy evolution; includes didactic and 45 hours of fieldwork experience learning.
NURS 611 Psychiatric-Mental Health Assessment and Diagnosis (3) Identification and synthesis of pertinent biopsychosocial and cultural data to complete advanced psychiatric-mental health assessments and diagnoses.
NURS 612 Advanced Assessment and Clinical Reasoning Lab (1) Clinical lab and practicum for advanced practice nursing. Emphasis on integration of knowledge, skills and outcome evaluation. Masters nursing students only. A-F only.
NURS 613 Pathophysiology for Advanced Practice (3) Provides the base of normal physiologic mechanisms and pathologic processes to serve as a foundation for clinical assessment, decision making, and clinical management across the lifespan. Pre: enrollment as a classified student in a graduate program in the SONDH.
NURS 615 Clinical Skills and Procedures for Advanced Practice Nursing (V) Clinical laboratory that focuses on clinical skills and procedures performed by advanced practice nurses (nurse practitioners and/or clinical nurse specialists). Topics will vary by section and semester. Repeatable up to 12 credits. NURS majors only. CR/NC only.
NURS 616 Psychobiology of Human Behavior and Psychopharmacology (4) Survey of the psychobiological basis of selected human behaviors and mental disorders across the lifespan and psychopharmacologic treatments prescribed by health care providers. Pre: 504L and 505L.
NURS 617 Human Responses to Acute and Chronic Illness (3) The first of two courses that focuses on the delivery of advanced practice nursing in the assessment, diagnosis, and management of common acute and chronic health problems in the acute care setting. NURS majors only. A-F only. Pre: 612L, 612IL, and 613: no waiver. (Once a year)
NURS 618 Human Responses to Acute and Chronic Illness-B (3) Second of two courses that focuses on the delivery of advanced practice nursing in the assessment, diagnosis, and management of common acute and chronic health problems in the acute care setting. NURS majors only. A-F only. Pre: 612L, 612IL, and 613: no waiver. (Once a year)
NURS 629 Child and Adolescent Psychiatric-Mental Health (3) Focuses on the evaluation of acute/chronic care (3) childs and adolescents representing culturally diverse populations. Emphasis on growth and development, assessment and diagnosis, and therapeutic modalities. A-F only. Pre: 620 (or concurrent).

NURS 630 Disciplinary Knowledge I (3) Exploration of a variety of philosophies of science and examination of factors influencing the development of nursing theory and the emergence of nursing as a discipline.


NURS 625 Psychopharmacology (3) Survey of biopsychological bases of and bioterrorists for major mental disorders, including the schizophrenias, affective and personality disorders, pediatric and geriatric problems, and neurological dysfunctions with appropriate applications to health care. Pre: graduate standing or consent.

NURS 624 Adolescent and Family Psychiatric-Mental Health Care (3) Seminar on theory/research in advanced psychiatric-mental health nursing of adolescents and families representing diverse populations. Emphasis on developmental and nursing theories, evidence-based practice, therapeutic modalities and disease management of psychiatric illness. Pre: 611 (or consent). (Spring only)

NURS 625 Advanced Nursing Roles (3) Provides students with an understanding of different roles of the advanced professional nurse; an ability to proactively manage the environment of their specialty practice; includes 45 hours of field work experience. A-F only.

NURS 628 Child Health: Special Health Needs (3) Provides a theoretical basis required for specialized clinical competence in adapting recent findings on child/parent assessments, social and health risk indicators, the role of environment, and multidisciplinary settings in the care of pediatrics. NURS majors only. A-F only. Pre: NURS major, 612/612L and 633, and 3 credits of 675; or consent. Co-requisite: 675. (Once a year)

NURS 629 Pharmacology for Nurses in Advanced Practice (3) Prepares APNs to evaluate, monitor, and prescribe pharmaceuticals to treat acute and chronic illness across lifespan. Emphasis on drug indications, mechanisms, and common adverse effects, interactions, monitoring, education, and cost effectiveness. Enrollment as a classified student in a SONDH graduate degree program. Repeatable unlimited times. Pre: 613 (or concurrent) or consent.

NURS 630 Introduction to Information Technology in Healthcare (3) Introduction to the use of information systems in healthcare. Selected information systems and data sets are explored with application of results to various patient populations and clinical practice settings.

NURS 632 Therapeutic Modalities (3) Therapeutic modalities used in advanced practice psychiatric-mental health nursing with individuals, families, and groups representing culturally diverse populations. Pre: 611.

NURS 633 Child Health: Promotion and Maintenance (3) Presents normal developmental, physiological and social needs of children within the context of family; then focuses on the management of common acute and chronic illnesses of children.

NURS 634 Child Health: Advanced Pediatric Acute/Chronic Care (3) Focuses on the evaluation of pediatric clients with higher acuity and more complex management needs. Emphasis on critical analysis of evidence based research in pediatric health care. Pre: Admission into the PNP and FNP program, 612/612L, 633, and completed 3 credits of 675 and/or consent.

NURS 635 Women’s Health: Promotion and Maintenance (3) Provides a foundation of concepts necessary to maintain and promote women’s health, including developmental, physiological and social needs of women of all ages and the management of common health problems and concerns specific to women. Pre: 612/612L, 613, and 629. Co-requisite: 675.


NURS 641 Advanced Nursing in the Global Health Environment (3) Exploration and analysis of key global health topics of concern for APNs. A-F only.

NURS 645 Advanced Psychiatric-Mental Health Practicum (V) Supervised application of theories, research, and skills for advanced practice psychiatric-mental health nursing with individuals, families, and groups representing culturally diverse populations. Includes the perspective of the client’s experiential approach. Repeatable five times. Pre: 611 (or concurrent). Co-requisite: 611 or 632.

NURS 647 Family Systems in Health and Illness (3) Family systems approach to include selected family theories, family research and family centered culturally sensitive clinical assessment and intervention in health and illness situations. Pre: graduate standing or consent.

NURS 650 Complementary and Traditional Care (3) A review of theoretical systems and approaches to complementary and traditional care in culturally diverse populations with a focus on wellness. Appropriate for all health-care professionals.

NURS 655 Tests and Measurement in Nursing Education (3) Testing and evaluation applied to nursing education. NURS majors only. A-F only. Pre: consent. (Once a year)

NURS 660 (Alpha) Selected Topics in Nursing (3) Advanced study, exploration of special topics in clinical nursing. (1) current issues in professional nursing.


NURS 662 Leadership and Management of Health Organizations (3) Study of theoretical, conceptual and practical knowledge of leadership and management as applied to changing healthcare environments.

NURS 663 Analysis of Healthcare Delivery Models (3) Analysis of various clinical management concepts and health-care delivery systems influencing outcomes, process, and costs in the delivery of care.

NURS 664 Seminar and Practicum in Nursing Executive Leadership (3) Supervised practicum to build knowledge, level of leadership competencies and facilitate change in complex healthcare organizations. Pre: 663 (or concurrent) or consent.


NURS 668 Community Based Participatory Research (CBPR) for Advanced Practice Nurses (3) Online course focuses on use of CBPR methods by Advanced Practice Nurses to address population level issues and health interventions. 15 hours of didactic and 90 hours of field experience are included. A-F only. (Once a year)

NURS 669 Developing Research for Evidence-Based Practice (3) Introduces evidence-based practice methods for improving the quality of nursing practice. Develops skills in differentiating quantitative and qualitative research, statistical methods, and searching, critiquing, and synthesizing literature, pertinent to health care issues. A-F only. Pre: permission of course faculty. (Fall only)

NURS 670 Advanced Practice Nursing During Public Health Disasters (3) The advanced professional nurse in public health preparedness, planning and response. Includes 45 hours of field work where the student will practice emergency response functional roles. NURS majors only. A-F only. Pre: consent. (Summer only)

NURS 671 Biostatistics Application in the Advanced Nursing Practice Setting (3) Includes basic biostatistical techniques and the application of statistical findings to practice programmatic decisions. NURS majors only. Pre: graduate standing in the Department of Nursing or consent. (Once a year)

NURS 672 Advanced Practice Community Public Health Nursing Practicum (V) Student will conduct a complex service project in a community or setting specified by the student and the course faculty. (Once a year)

NURS 673 Implementation and Evaluation Strategies for Evidence-Based Practice (3) Using knowledge of translational science, designs an implementation plan for a practice guideline. Demonstrates evaluation methods and selects outcome variables that best measure success. Discusses institutionalization of, and identifies facilitators and barriers to, practice change. NURS majors only. Graduate standing only. A-F only. Pre: 667. (Fall only)


NURS 680 Cultural Competency in Nursing Education (3) Evaluates the impact on history of the culture of nursing and nursing education. Explores strategies to provide education in a culturally sensitive manner to culturally diverse students. NURS majors only. A-F only. Pre: graduate standing or consent.

NURS 682 Health and Healing Practices of Populations with Health Disparities in Hawai'i and Other Places (3) Teaching and learning concepts applied to health promotion and the prevention of common conditions of disease among populations with health disparities in Hawai‘i and other places; includes didactic and 45 hours of field experience. NURS majors only. A-F only. Pre: 612/612L, 613, and 629 (or concurrent).

NURS 690 Curriculum Evaluation in Nursing Education (3) Current trends of planning for evaluation and critical analysis and application of curriculum evaluation frameworks in nursing education. NURS majors only. A-F only. Pre: 747 or consent.

NURS 692 Methods for Nursing Research (3) Nursing research methods for qualitative and quantitative studies, institutional review board procedures, and how to develop a research proposal. NURS majors only. A-F only.

NURS 693 Advanced Practice Clinical for Clinical Nurse Specialists (V) Application of concepts and principles of education, consultation, research, and management and evaluation of advanced practice clinical practicum for adult health clinical nurse specialist students. Repeatable five times. NURS majors only. A-F only. Pre: 612 (or concurrent), 612L (or concurrent), 613 (or concurrent), and 629 (or concurrent); or consent.

NURS 695 Successful Aging: Physiologic (3) Advanced study of the functional, cultural, psychological, and socioeconomic phenomena that impact the physiology of normal and abnormal aging. Emphasis is on promoting successful aging among.
NURS 696 Nursing Education Capstone (3)
A culminating experience in nursing education program designed for students to integrate, critique, extend, and apply knowledge gained in the program. NURS majors only. A-F only. Pre: consent. (Spring only)

NURS 699 Directed Study or Research (V)

NURS 700 Thesis Research (V)
Research for master’s thesis. Repeatable unlimited times.

NURS 702 Philosophical Thoughts (3)
Introduces the major fields of philosophy for use in research. Frameworks for the evaluation and critique of philosophical approaches will be explored, debated, analyzed, and applied as relevant to the PhD student’s dissertation. NURS majors only. A-F only. (Fall only)

NURS 721 Instrument Development and Evaluation in Research (3)
Theory of testing and evaluation applied to nursing research in culturally diverse populations. NURS majors only. A-F only. Pre: consent. (Once a year)

NURS 730 Principles of Evidence-based Practice for Advanced Nursing (3)
Evaluates concepts, models, and processes of evidence-based practice. Refines skills in searching and critiquing the literature for application to practice change. Synthesizes a body of literature to design interventions pertinent to a practice problem. (Fall only)

NURS 739 Advanced Nursing Science (3)
Provides opportunities to know and practice the process of theory development in nursing and to test concepts, relationships, and models about health behavior in cultural diverse populations.

NURS 741 Quantitative Methods and Measures (3)
Critical analysis of quantitative research methods used to analyze problems of interest to nursing in culturally diverse populations. Repeatable three times. Pre: 620 or equivalent course and an advanced statistics course or consent.

NURS 742 Qualitative Methods I (3)
Introduction to qualitative research methods in the development of nursing disciplinary knowledge related to culturally diverse populations. Pre: 620 or consent.

NURS 743 Qualitative Methods II (3)
Advanced in-depth exploration of the data collection, data analysis and methodological issues in the qualitative research traditions (ethnography, grounded theory, phenomenology) utilized in nursing research. NURS majors only. A-F only. Pre: 742 (or equivalent) or consent. (Once a year)

NURS 744 Seminar on Women and Health (3)
Women’s health and the role of women health professionals. Current literature and research regarding attitudes, roles, rights, and health care. Pre: consent. (Cross-listed as SW 776)

NURS 745 Creative Learning Strategies for Adults (3)
Analysis of forces that affect adult learners. Concept of lifelong learning vis-à-vis development of creative strategies that assist maturing, self-directed persons to develop their potentialities. NURS majors only. (Cross-listed as EDEA 745 and EDEP 745)

NURS 746 Program Evaluation (3)
Principles of and frameworks for program evaluation. Studies development of logic model, evidence evaluation practice for a community program and collect and analyze evaluation data. A-F only. (Spring only)

NURS 747 Curriculum Development (3)
Current theories, issues, and trends of curriculum development in nursing. Application and critiques of related research. NURS majors only.

NURS 748 Supervised Practicum in Teaching (V)
Supervised experience in instructional planning and teaching. Repeatable up to 10 credits. NURS majors only. Pre: 747 (or equivalent) or consent.

NURS 750 Leadership and Management of Healthcare Systems (3)
Integrate scientific findings from various fields of study to the leadership and management of healthcare systems to ensure the delivery of quality and safe care. A-F only. (Fall only)

NURS 751 Concept Development and Analysis (3)
First course offering in-depth analysis of specific concepts and theoretical formulations of nursing and other disciplines pertinent to the student’s area of research interest. Addresses human responses to health in culturally diverse populations. Pre: 739.

NURS 752 Advanced Statistics I (3)
Advanced application of general linear model theory to analyze complex problems of interest to nursing in culturally diverse populations. NURS majors only. A-F only. Pre: 741 (or equivalent) or consent. Once a year.

NURS 753 Advanced Statistics II (3)
Advanced application of multivariate statistics to analyze complex problems of interest to nursing in culturally diverse populations. A-F only. Pre: 741 and 752 or equivalent coursework. Once a year.

NURS 760 Trends in Healthcare (3)
Evaluates the historical foundations of healthcare systems and their relationship to current issues and trends in healthcare services. Analyzes the variations in healthcare delivery systems across nations and the impact on health outcomes. A-F only. (Fall only)

NURS 761 Translation Science (3)
Synthesis and analysis of interventions and variables that influence the rate of adoption of innovations. Application of concepts to extramural and systems of healthcare. A-F only. (Fall only)

NURS 767 Culturally Competent Research Methods (3)
Analysis of concepts, issues, and methods in conducting culturally competent research. Pre: graduate methods course or consent.

NURS 768 Advanced Clinical Economics and Finance (3)
Theory and practice of financial management to achieve high quality and cost effectiveness in healthcare. Hybrid course which combines face-to-face with online learning. NURS majors only. A-F only. Pre: 665, no waiver. (Alt. years)

NURS 774 Best Practices in Leading Healthcare Patient Safety and Quality (3)
Examination of quality of health care and managing health-care outcomes and costs in the delivery of care through the interdisciplinary process.

NURS 775 Capstone Field Study (3)
Supervised experience in executive nursing leadership to address important health issues for high-risk or under-served populations utilizing an interdisciplinary systems-based approach. Pre: 664 and 774 (or concurrent), or consent.

NURS 777 Doctor of Nursing Practice Scholarly Inquiry Project (V)
Under the guidance of their academic advisor, students will synthesize, integrate, and translate newly acquired knowledge and skills in the implementation and evaluation of their selected project over the course of their program. Repeatable unlimited times. CR/NC only.

NURS 777 Nursing Research Practicum (3)
Faculty guided research opportunity to gain mastery of research skills and techniques through participation in mentored research. Repeatable one time. A-F only. Pre: 741 (with a minimum grade of B-), 742 (with a minimum grade of B-), 751 (with a minimum grade of B-) and a quantitative methods course.

NURS 796 Grant Writing and Grant Management (3)
Designs strategies to • apply for grants, • grant writing, and grant management. Combined lecture discussion, seminar, and exercises on grants, grant writing, and grant management for health sciences. Open only to students who complete a grantsmanship workshop. Repeatable one time. NURS majors only. Pre: instructor consent.

NURS 800 Dissertation Research (V)
Dissertation research for Advanced Nursing. Repeatable three times. Pre: consent. (Once a year)

OBGN 532 Obstetrics and Gynecology Longitudinal Clerkship (5)
Year-long clerkship in outpatient setting, covering assessment, diagnosis, treatment, and/or management of common gynecologic problems and normal and complicated pregnancies. Emphasis on prevention and health maintenance. Repeatable two times. Pre: third-year standing, and concurrent registration in 532 courses.

OBGN 545 (Alpha) Electives in OB/GYN (V)
Opportunities for advanced study of selected topics. B-, C-, D, or DP. Pre: third-year standing, and concurrent registration in 532 courses. Repeatable twice for each alpha. CR/NC only. Pre: 531 or 532.

OBGN 599 Directed Reading/Research (3)
Pre: consent.

Ocean and Earth Science and Technology (OEST)
School of Ocean and Earth Science and Technology
The following courses are not part of a specified department’s curriculum. These courses are highly interdisciplinary in nature, drawing on faculty expertise from throughout SOEST and the Mānoa campus. They are not based in any of the departments but are administered and coordinated by the associate dean’s office.

OEST 735 is a key element of the graduate ocean policy certificate program.

OEST 099 International Exchange Study/Research (V)
Study overseas in an approved international exchange or similar program. Repeatable three times. CR/NC only. Pre: consent of academic advisor.

OEST 100 The College Experience (0)
Required for entering SOEST majors to develop skills and applications for a successful college experience. Students will examine academic goals and implement strategies to achieve goals including time management and career exploration. SOEST majors only. CR/NC only.

OEST 101 Natural Hazards (3)
Science of natural hazards: impact on human civilization of events in the lithosphere, atmosphere, biosphere, and hydrosphere (e.g., earthquakes, hurricanes, red tides, and floods), and impact of human behavior on their exposure to and mitigation of the hazards. DP

OEST 109 Contemporary Issues in Energy Systems (3)
Introductory experience in energy systems including current status of fossil fuel, renewable energy technologies, energy utilization and conservation; environmental and policy aspects. A-F only. (Fall only)

OEST 230 Ethics in Scientific Research (4)
Introduction to issues in ethical and scientific misconduct. GG, GES, or MET/ATMO majors only. (Spring only)

OEST 510 Earth Sciences Professional Development Education (V)
Specialized Earth Science topics workshops designed for in-service teachers who wish to learn new approaches and content areas in geology and geophysics, meteorology and oceanography. Repeatable up to 12 credits. Credits earned cannot be applied for graduate degrees.

OEST 696 Communicating Ocean Sciences (2)
Application of current learning theory and pedagogical practices in formal and informal learning environments to improve communication and instructional skills. Graduate students from multiple disciplines may participate. Course covers knowledge of biological, earth sciences, and/or chemistry. Pre: at least one course in introductory biology, geology, earth science, chemistry or marine science, an interest in ocean science, and enthusiasm for teaching science; or consent. (Spring only)

OEST 699 Directed Reading/Research (V)
Selected interdisciplinary ocean/earth-related topics involving science, technology, engineering, and/or policy. Repeatable one time. Pre: consent.

Key to symbols & abbreviations: see the first page of this section.

OBGN 532 Obstetrics and Gynecology Longitudinal Clerkship (5)
Year-long clerkship in outpatient setting, covering assessment, diagnosis, treatment, and/or management of common gynecologic problems and normal and complicated pregnancies. Emphasis on prevention and health maintenance. Repeatable two times. Pre: third-year standing, and concurrent registration in 532 courses.

OBGN 545 (Alpha) Electives in OB/GYN (V)
Opportunities for advanced study of selected topics. B-, C-, D, or DP. Pre: third-year standing, and concurrent registration in 532 courses. Repeatable twice for each alpha. CR/NC only. Pre: 531 or 532.

OBGN 599 Directed Reading/Research (3)
Pre: consent.
ORE 330 Mineral and Energy Resources (3) Hard mineral and petroleum origins, exploitation and exploration. Renewable and non-renewable resources distribution. Political and scientific constraints. A-F only. Pre: 202 or OCN 201, or consent. (Cross-listed as OCN 330) DP

ORE 411 Buoyancy and Stability (3) Ship nomenclature and geometry, hydrostatic principles of surface ships and underwater vehicles in free-floating, partially waterborne, and damaged conditions. Subdivision of ships. Launching. Pre: CE 270 or equivalent. DP

ORE 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B candidate and consent.

ORE 601 Ocean and Resources Engineering Laboratory (3) Design, construction, and evaluation of an engineering system. Laboratory and field experience and data analysis supplemented with appropriate theory. Pre: 603 and 607, or consent.

ORE 603 Oceanography for Ocean Engineers (3) Physical, chemical, and geological ocean environments for engineers. Introduction to ocean dynamical processes and general circulation. Ocean measurement techniques, theory of underwater acoustics, Sonar, swath bathymetry, and tomography applications. Pre: consent.

ORE 607 Water Wave Mechanics (3) Governing equations in free surface flow, deterministic and probabilistic wave theories, wave transformation, wave-induced coastal current, tides, ocean engineering operational sea state, and design wave criteria. Pre: consent.

ORE 608 Probability and Statistics for Ocean Engineers (3) Probability and statistical analysis including distribution, multiple regression and correlation, autocovariance, cross-spectra, and practical applications in ocean engineering. Pre: 607 or consent.


ORE 612 Dynamics of Ocean Structures (3) Response of floating platforms and vessels to wave action, spectral analysis in sea keeping. Frequency and time domain analyses of rigid body motions in six degrees of freedom. Pre: 411 or consent. Co-require: 609 or consent.

ORE 630 Structural Analysis in Ocean Engineering (3) Structural and finite element analyses and design of ocean structures to withstand hydrostatic and hydrodynamic loading of the sea. Considerations include material type, safety factor, stress concentration, and fatigue. Pre: consent. Co-require: 411.

ORE 641 Environmental Fluid Dynamics (3) Fluid dynamics for coastal and estuarine environments. Turbidity currents in homogeneous and stratified fluids. Buoyancy driven flows, internal hydraulic, topographic effects and estuarine circulation. Spill and pollutant dispersion. Pre: 603 or consent.

ORE 654 Applications in Ocean Acoustics (3) Using sound to observe the ocean. Fundamentals of propagation. Topics include marine mammals, navigation and communication, seismics, ships, wind and rain, ocean dynamics, flow and biological imaging and measurement, seafloor mapping, and the forward/reverse problem. Pre: consent. (Once a year)

ORE 661 Coastal and Harbor Engineering (3) Planning and design of seawalls, groins, jetties, breakwaters, and layout of ports. Design requirements for harbor entrances and channels. Littoral drift and sedimentation problems. Navigation and mooring requirements. Pre: 607 or consent.

ORE 664 Nearshore Processes and Sediment Transport (3) Sediment transport by waves and currents in coastal areas and through morphological processes. Effect of man-made structures on littoral drift and shoreline. Pre: 607 or consent.

ORE 677 Marine Renewable Energy (3) Ocean thermal energy conversion (OTEC) systems: applicability, thermodynamics, design challenges; wave energy converters: floating devices, oscillating water column, optimal hydrodynamic performance; current, tidal, and offshore wind power. Pre: 607; basic knowledge of thermodynamics desirable.

ORE 678 Marine Resources Engineering (3) Activities in marine minerals development are examined in a multidisciplinary systems approach involving engineering, Earth and environmental sciences and economics in standing consent.

ORE 695 Plan B Master’s Project (3) Independent study for students working on a Plan B master’s project. A grade of Satisfactory (S) is assigned when the project is satisfactorily completed. Pre: master’s candidacy in ORE.

ORE 699 Directed Reading or Research (V) Repeatable unlimited times. Pre: graduate standing and consent.

ORE 700 Thesis Research (V) Repeatable unlimited times. Pre: candidacy for MS in ocean and resources engineering. DP

ORE 707 Nonlinear Water Wave Theories (3) Higher-order theories. Forced oscillations. Stoke’s theory. Nonlinear shallow-water wave equations and hydraulic jumps; effects of rotation. Internal waves. Analytical techniques necessary will be developed as course progresses. Pre: 607 with a B- grade.


ORE 783 (Alpha) Capstone Design Project (3) Major design experience based on knowledge and skills acquired in earlier coursework and incorporating realistic constraints that include economic, environmental, ethical, social, and liability considerations. Emphasis is placed on teamwork and consultant-client relationship. (B) coastal engineering; (C) offshore engineering; (D) ocean resources engineering. Pre: 411, 601, 603, and 607; or consent.

ORE 791 Special Topics in Ocean and Resources Engineering (V) Course topics will reflect special interests of visiting and permanent faculty. Pre: consent.

ORE 792 Seminar in Ocean and Resources Engineering (1) Attendance at 15 approved seminars will continue along with submission of notes.

ORE 800 Dissertation Research (V) Repeatable unlimited times. Pre: successful candidacy for PhD in ocean and resources engineering.

Oceanography (OCN) School of Ocean and Earth Science and Technology

The minimum required grade for undergraduate prerequisite is a C (2.0) or better, and graduate prerequisite is a B (3.0) or better.

OCN 100 Global Environmental Science Seminar (1) Seminar to introduce new GES majors to the research interests of GES faculty and the research facilities available within SOEST. Restricted to GES majors. CR/NC only. (Fall only)

OCN 105 Sustainability in a Changing World (3) Examines how environmentally sustainable and non-sustainable practices have affected the development and spread of human culture and societies from pre-history to the 1500s in Asia, Africa, Europe, the Americas, and Hawai’i/Oceania. (Fall only) FGA

OCN 120 Global Environmental Challenges (3) Scientific approach to evaluating human-caused environmental challenges and their potential solutions. Open to non-majors. (Spring only) DP

OCN 199 Introduction to Directed Research (V) Reading and research in any area of Oceanography, under the direction of a faculty member. Repeatable up to six credits. CR/NC only.

OCN 201 Science of the Sea (3) Structure, formation, and features of ocean basins; seawater properties and distributions; currents; waves; tides; characteristics of marine organisms; marine ecological principles; man and the sea. Field trip required. DP

OCN 211 Science of the Sea Laboratory (2) (2-1/2 hr laboratory) to supplement OCN 201. Quantitative aspects of global environmental change will be addressed through problem-solving and computer modeling. A-F only. Pre: MATH 242, PHYS 170/170L, CHEM 161/161L, and OCN 310 or consent. DP

OCN 310 Marine Renewable Energy (3) Global environmental change problems such as carbon dioxide and the greenhouse effect, acid rain, chlorofluorocarbons and the ozone layer, global destratification and the effects of climate change, etc., will be discussed. Pre: 201, MET/ATMO 200, GG 103, or GG 170; or consent. (Cross-listed as MET/ATMO 310) DP

OCN 310L Global Environmental Change Laboratory (2) (2-1/2 hr lab) to supplement OCN 310. Quantitative aspects of global environmental change will be addressed through problem-solving and computer modeling. A-F only. Pre: MATH 242, PHYS 170/170L, CHEM 161/161L, and OCN 310 or consent. DP

OCN 312 Geomathematics (3) Mathematical methods of geologic and geophysical science. Emphasis on application to earth-science problems using linear algebra, vector calculus, ordinary differential equations, and numerical solutions. Pre: MATH 242 or consent. (Cross-listed as GG 312)

OCN 315 The Role of Models in Global Environmental Science (3) Introduction to philosophy of science for those with some background in the natural sciences. Special emphasis on issues arising from model construction and model application. Prereq: any course 200 or above in PHIL or any course 200 or above with either DB or DP designation, or consent. (Alt. years: spring) (Cross-listed as PHIL 315)

OCN 320 Aquatic Pollution (3) Pollution of freshwater and marine systems by human activities. Causes, consequences, and corrective. Pre: 201 or consent. DP

OCN 330 Mineral and Energy Resources of the Sea (3) Hard mineral and petroleum origins, exploration, and exploitation. Renewable and non-renewable resources distribution. Political and scientific constraints. Pre: 201, ORE 202; or consent. (Cross-listed as ORE 330) DP

OCN 331 Living Resources of the Sea (3) Marine fisheries, aquaculture, and law of the sea. Principles of management of renewable resources. Political and scientific constraints and limitations. DB

OCN 363 Earth System Science Databases (3) Combined lecture, discussion, and laboratory on global Earth system database development and satellite instrumentation, including computer laboratory. A-F only. Pre: 310/310L, and MATH 244; or consent. DP

OCN 395 Undergraduate Internship (V) Experiential approach to earth science; students serve as interns to field professionals or research institutions. Include supervised field work. Undergraduate SOEST majors only. Open to GES majors. Repeatable one time. CR/NC only. Pre: junior/senior standing and consent.
OCN 399 Directed Reading (V) Directed reading in earth system science, oceanography, or environmental science. Repeatable up to 6 credits. Pre: consent.

OCN 401 Biogeochemical Systems (3) Relationship of biogeochemical cycling in the atmosphere, lithosphere, and biosphere to global chemical cycles and planetary climatic conditions. GES degree foundation and capstone course. A-F only. Pre: 201, 310/310L, or OES 310/310L, BIOL 172/172L, CHEM 162/162L, GG 101/101L, MATH 241, MATH 243 & 252A, MATH 373 (or ECON 321), MET/ATMO200, PHYS 170/170L, and PHYS 272/272L or consent. (Fall only) DP

OCN 403 Marine Functional Ecology and Biotechnology (3) Marine functional genomics, biodiversity of marine natural habitats, marine microbial communities and their ecological functions, interactions of the host with the environment, change and marine biodiversity, marine biotechnol- ogy. A-F only. Pre: 201 or MICR 130, or consent. (Spring only) (Cross-listed as MBRE 405)

OCN 423 Marine Geology (3) Sediments, structure, geophysics, geochemistry, history of ocean basins and margins. Pre: GG 200 and GG 302, or consent. (Cross-listed as GG 423) DP

OCN 430 Introduction to Deep-Sea Biology (3) (1.5 Lec, 1.5 Discussion) Biology and ecology of deep-sea environments. Topics including benthic-pelagic coupling, depth zonation, energetics, diversity, adaptations, hydrothermal vents, seamounts, abyssal plains, deep-sea resource extraction and global climate change. A-F only. Pre: 201 and BIOL 265, or consent. (Alt. years)

OCN 435 Climate Change and Urbanization (3) The following topics will be addressed: How are cities impacted by, and impacting climate change? How do urbanization, alteration of atmospheric processes, and extreme weather events affect urban systems and populations? A-F only. Pre: 363 or consent. (Fall only)

OCN 444 Plate Tectonics (3) (2 Lec, 1.5-h Lab) Quantitative geometrical analysis techniques of plate tectonics theory: instantaneous and finite rotation poles; triple-junction analysis; plate boundary stresses. Pre: GG 200 or consent. (Alt. years) (Cross-listed as GG 444) DP

OCN 450 Aquaculture Production (3) Theory and practice of aquaculture: reproduction, yield trials, management, economics, and business case studies of fish, crustaceans, and molluscs. Field classes held at commercial farm and hatchery. Pre: ANSC 321 and ANSC 427/427L and CHEM 162/162L or higher. (Cross-listed as ANSC 450) DB


OCN 480 Dynamics of Marine Ecosystems: Physical-ecological Interactions in the Oceans (3) Combined lecture and discussion examining biological and physical interactions in the oceans and their impacts on the functioning of marine ecosystems. GES majors only. A-F only. Pre: 201/201L, 310/310L, and PHYS 272/272L or consent. (Alt. years)

OCN 481 Introduction to Ocean Ecosystem Modeling (3) Introduction to modeling biogeo-chemical and biophysical oceanic processes by building a coupled model of the Pacific to investigate physical effects on plankton blooms. Students learn ecosystem dynamics, basic numerical methods, and Matlab programming. A-F only. GES majors only. Pre: 310 or PHYS 272, and OCN/GG 312 (with a minimum grade of B-). (Spring only)

OCN 490 Communication of Research Results (2) Lecture/discussion to provide instruction and experience in oral and written presentation of scien- tific results and material. Registration limited to GES majors in their final semester. A-F only. Pre: consent.

OCN 496 Topics in Global Environmental Science (V) Lecture and discussion or seminar. Current topics in environmental science explored in detail. (Typically 8-10 special interests, or developed in response to student interest. GES majors only. Repeatable one time or up to six credits. Pre: consent.

OCN 499 Undergraduate Thesis (V) Directed research in which the student contributes to a scientific project of small to moderate scope with one or more chosen advisors. The student must complete a document in the style of a scientific journal article. Repe- atable one time or up to six credits. Pre: consent.

OCN 601 Marine Environments and Organisms (4) (3 hr Lec, 3 hr Lab) Introduction to the diversity of marine organisms and the many special- ized coastal, reef, and oceanic habitats in which they live. Lab and field research exercises will complement lectures and discussions. Graduate standing in Marine Biolo- gy graduate degree program only. A-F only. Pre: consent. (Fall only) (Cross-listed as MBB 601)

OCN 602 Marine Biology-Processes and Impacts (4) (3 Lec, 3 Lab) Investigation of biological phenomena and interactions to productivity and food webs, community structure and ecology, adaptations, and physiology, and impacts of human activities and fisheries. Graduate standing in Marine Biology graduate degree program only. A-F only. Pre: 601. Minimum prerequisite grade of B. (Spring only) (Cross-listed as MBB 602)

OCN 620 Physical Oceanography (3) Introduction to properties of seawater, oceanographic instruments and methods, heat budget, general ocean circula- tion, regional oceanography, waves, tides, sea level. Formation of water masses, dynamics of circulation. Repeatable one time. Pre: MATH 242 (or concur- rant), or consent.

OCN 621 Biological Oceanography (3) Factors governing productivity, population dynamics, distribution of organisms in major ecosystems of the ocean, emphasis on ecology of pelagic zone. GES majors only. Pre: consent.


OCN 623 Chemical Oceanography (3) Chemical processes occurring in marine waters; why they occur and how they affect oceanic environment. Pre: CHEM 171.

OCN 625 Aquatic Photosynthesis (3) Biochemical and biophysical concepts of photosynthesis. Application and interpretation of ecological processes of photosynthesis in aquatic systems. Open to nonmajors. A-F only. Pre: consent. (Spring only)

OCN 626 Marine Microplankton Ecology (4) (3 Lec, 1.5 Lab) Distribution, abundance, and ecology of marine microplankton, including bacteria, al-gae, and protozoans, with an emphasis on metabolic rates and processes. Pre: consent. (Fall only)

OCN 627 Ecology of Pelagic Marine Animals (4) (3 Lec, 1.5 Lab) Ecology of pelagic animals including feeding, energetics, predation, and anti- predation tactics. Life-history strategies, vertical flux of materials, population dynamics, fisheries. Pre: consent. (Spring only)

OCN 628 Benthic Biological Oceanography (4) (3 Lec, 1.5 Lab) Processes controlling the structure and function of benthic communities, including organism-sediment-flow interactions, sediment geo- chemistry, feeding strategies, recruitment, succession, and population interactions. Pre: consent.

OCN 629 Molecular Methods in Marine Ecol- ogy (3) Molecular methods for studying marine functional ecology and in the method-on-tools for ecological and biogeochemical processes of microbes; developing practical skills for research project in ma- rine microbial ecology and biological oceanography. A-F only: Pre: 403, 626, 627, or 628; or consent. (Fall only)

Key to symbols & abbreviations: see the first page of this section.
topographic waves, equatorial waves. Pre: 660 or consent.


OCN 665 Small-Scale Air-Sea Interaction (3) Observations and theory of small-scale processes which couple the atmosphere and ocean boundary layers, including introduction to turbulence theory and parameterization of turbulent fluxes. Pre: MATH 402 and MATH 403 (or their equivalents) and either 620 or MET/ATMO 660. Consent. (Alt. years) (Cross-listed as MET/ATMO 665)

OCN 666 Large-Scale Ocean-Atmosphere Interactions (3) Lecture/seminar introduces physical oceanography and meteorology to students who are used to the state-of-the-art theories and observations of large-scale ocean-atmosphere interaction, as well as conveying the fundamental understanding that has been developed during the past 30 years. Emphasis will be on phenomena such as El Nino/Southern Oscillation, the North Atlantic Oscillation, the Pacific Decadal Oscillation, and global climate change. Repeatable one time. Pre: 620 or MET/ATMO 660, or consent. (Alt. years) (Cross-listed as MET/ATMO 666)

OCN 667 Advanced Geophysical Fluid Dynamics I (3) Basic concepts to describe large-scale ocean circulation; numerical models; boundary layers; models of wind-driven circulation of a homogeneous ocean. Pre: 620 and 662, or consent.

OCN 668 Advanced Geophysical Fluid Dynamics II (3) Thermodynamics of stratified fluids; convection; mixing; models of the thermohaline circulation; the role of eddies in the large-scale ocean circulation. Pre: 667 or consent.

OCN 674 Paleooceanography (3) Study of the paleooceanographic and climate evolution of the Earth’s oceans, atmosphere, and biosphere. Repeatable one time. Pre: consent. (Alt. years) (Cross-listed as GG 674)

OCN 680 Dynamics of Marine Ecosystems: Biological-Physical Interactions in the Oceans (3) Combined lecture/discussion examining biological and physical interactions in the oceans and their impacts on the functioning of marine ecosystems. A-F only. Pre: previous course in marine science, or consent. (Alt. years)

OCN 681 Introduction to Ocean Ecosystem Modeling (3) Introduction to modeling biological and physical oceanic processes by building a coupled model of the Pacific to investigate physical effects on biological productivity. Students will learn biological-physical dynamics, basic numerical methods, and Matlab programming. Pre: 620, 621, or consent. (Alt. years)

OCN 682 Introduction to Programming and Statistics in R 3 (hrs Lec/Lab) Introduces project management, data analysis, and mathematical and statistical modeling using R as a platform. Students will learn principles and benefits of programming languages to apply skills to their own research. (Spring only)

OCN 699 Directed Research (V) Repeatable unlimited times. Pre: consent. CR/NC only.


OCN 750 Topics in Biological Oceanography (V) Seminar. Literature and concepts in several of the major intertidal and limnetic activities considered in detail. Repeatable up to 12 credits. Pre: consent.

OCN 760 Topics in Physical Oceanography (V) Near-shore processes, advanced mathematical techniques, remote sensing, computational techniques. Typically given by visiting professors in their specialties, or in response to student interest. Repeatable up to 12 credits. Pre: consent.

OCN 770 Seminar in Chemical Oceanography (1) OCN 780 Seminar (1) Oceanographic topics of current interest. Repeatable unlimited times.

OCN 791 Proposal Development (2) Introduction to the organization and functioning of oceanography funding agencies, the peer-review process, and the design and development of a research proposal. Repeatable one time. CR/NC. Pre: OCN 790 or the following: 621, 626, 627 (or concurrent), or 628 (or concurrent); or consent.

OCN 800 Dissertation Research (V) Research for doctoral dissertation. Repeatable unlimited times.

**Pacific and Asian Studies (PAS)**

- **Pacific and Asian Studies (PAS)**
- **School of Pacific and Asian Studies**
- **PAS 999 Overseas Study (V)** Registration allows students to maintain enrolled status at UH Mānoa while taking courses abroad. CR/NC only. Pre: consent.

**Pacific Islands Studies (PACS)**

- **PACS 108 Pacific Worlds: An Introduction to Pacific and Asia**
  - **Introduction**
  - **Dissertation**
  - **Coursework**
  - **Research**
  - **Proposal Development**
  - **Directed Research**
  - **Thesis Research (V)**
  - **Proposal Development (2)**
  - **Directed Research (V)**
  - **Thesis Research (V)**

**School of Pacific and Asian Studies**

**PAS 108 Pacific Worlds: An Introduction to Pacific and Asia**

- **Introduction**
- **Dissertation**
- **Coursework**
- **Research**
- **Proposal Development**
- **Directed Research**
- **Thesis Research (V)**

**Key to symbols & abbreviations:** see the first page of this section.
PATH 515 Unit V Concurrent Elective (1) Elective course for second-year medical students. CR/NC only. Pre: BIOM 551 and consent.

PATH 525 Unit V Block Elective (V) Required elective for second-year medical students, objectives to be determined by contract. One option is a review of USMLE Part I. CR/NC only. Pre: BIOM 551.

PATH 541 Pathology Practicum (V) Required autopsy experience involving dissection and microscopic examination of tissues and detailed evaluation of disease process. CR/NC only. Pre: third- or fourth-year standing.

PATH 545 (Alpha) Unit VII Electives in Pathology (V) Individualized instruction in laboratory medicine for the practicing physician, clinical and anatomical pathology, advanced topics in clinical immunology; (A) anatomic pathology; (B) clinical pathology; (E) pathologic aspects of aging, nutrition, and/or alcoholism; (F) extramural elective in pathology. Repeatable four times. CR/NC only. Pre: BIOM 551.

PATH 595 Introduction to Pathology and Laboratory Medicine (1) Provides an introduction to the practice of pathology and laboratory medicine and the role pathologists and the laboratory play in the diagnosis and management of disease. MD students only. CR/NC only. Pre: MDEd 554 or consent. (Fall only)

PATH 599 Electives in Pathology (V) Individualized instruction in clinical and/or anatomic pathology. Third-year elective. Repeatable unlimited times. Pre: consent.

PATH 699 Directed Research (V) In-depth study of pathology of aging, nutrition, alcoholism, and immunology. Open to medical students and selected graduate students. Repeatable unlimited times. Pre: consent.

Peace Studies (PACE)

College of Social Sciences

PACE 247 Survey of Conflict Management (3) Survey of contemporary conflict management and resolution; negotiation, mediation, conciliation, ombuds, fact-finding, facilitation techniques, arbitration, and litigation. Pre: any social science 100- or 200-level course or consent. DH

PACE 310 Survey Peace and Conflict Studies (3) Survey of basic concepts, relationships, methods, and debates in conflict research and conflict resolution studies. Pre: any social science 100- or 200-level course or consent. DS

PACE 315 Personal Peace: Stories of Hope (3) Interviewing, writing, and publishing stories of those who have overcome great difficulties to find personal peace. Pre: grade of B or better in ENG 100 or Pre: consent. HSL

PACE 345 Aggression, War, and Peace (3) Biocultural, evolutionary, and cross-cultural perspectives on the conditions, patterns, and processes of violence, war, nonviolence, and peace. Pre: ANTH 152. (Cross-listed as ANTH 345) DS

PACE 373 Nonviolent Political Alternatives (3) Exploration of scientific and cultural resources for nonviolent alternatives, both moral and political. Pre: any 100- or 200-level POLS course or consent. (Cross-listed as POLS 396) DS

PACE 399 Directed Reading (V) Directed reading in peace and conflict resolution. Repeatable three times. Pre: consent.

PACE 410 History of Peace Movements (3) Examination of two centuries of U.S., European, Australian, and Hawaiian peace, thought, and action. Also surveys early Christian and secular attitudes to war. Open to nonmajors. Pre: any DS course, or consent. DH

PACE 412 Gandhi, King, and Nonviolence (3) Life and thought of Mahatma Gandhi and Martin Luther King, Jr. Pre: any Social Science 100 or 200-level course, or consent. DH

PACE 413 Terrorism (3) Multidisciplinary approach to the origins, dynamics, and consequences of international terrorism, including the psychological, legal, ethical and operational concerns of counterterrorism. Pre: any 200-level DS course, or consent.

PACE 420 Introduction to Human Rights: International and Comparative Perspectives (3) Introduction to international, regional, and domestic human rights. Focus on theoretical origins of human rights and policy debates on the protection of human rights, dispute resolution, and enforcement mechanisms. Pre: any 100- or 200-level course, or consent.

PACE 429 Negotiation (3) Negotiation theory, negotiation skills and application of negotiation in conflict prevention, conflict management and conflict resolution. Pre: any Social Science 100 or 200-level course, or consent. DH

PACE 430 Leadership for Social Change (3) In-depth study of current models and emerging theories of ethical leadership in community service; development of tangible leadership skills, including communication, conflict resolution, team-building, and management skills. Sophomore standing or higher. A-F only. Pre: any 200-level DS course. DS

PACE 447 Mediation Skills: UH Basic (3) Basic mediation skills training course. Completion of course requirements qualifies student to be listed as a mediator for the co-mediation or on mediation panel. Pre: either 247, 310, or consent.

PACE 477 Culture and Conflict Resolution (3) Conflict resolution techniques for major world culture. Emphasis on cultures of the Pacific Basin, Pacific Islands, and Asia. Pre: any DS course, or consent. DS

PACE 478 International Law and Disputes (3) Management, prevention, resolution of international disputes and the role of international law. Pre: any Social Science 100 or 200-level course, or consent. DS

PACE 485 Topics in Peace and Conflict Resolution (3) Recent issues, practices in peace and conflict resolution. Repeatable one time. Pre: any DS course, or consent. DS

PACE 489 Hiroshima & Peace (3) 10-day intensive course at Hiroshima City University, Japan, in the 2-weeks before the annual August 6 commemoration of the atomic bombing. Home-stay with Japanese family. Sophomore standing. A-F only. Pre: any 200-level social science course, or consent. DH

PACE 495 Practicum and Internship (3) The practicum and internship in Peace and Conflict Resolution provides an opportunity for students to apply the skills and concepts learned in earlier courses. Pre: any other PACE course consent. DS

PACE 629 Advanced Negotiation (3) Mastery of advanced negotiation skills for strategic dispute resolution, non-routine problem-solving, creating partnerships and alliances, and crafting optimal minimizers. Faculty and staff in educational organizations and acquire personal and professional skills vital for leadership. Graduate standing only. Pre: one of the following courses: 429, 447, 477, 647, 652, or 668; or PLAN 627; or COMG 455 or SOC 736; or LAW 508; or MGT 660.

PACE 647 Mediation: Theory and Practice (3) Combined lecture, discussion, and mediation simulations. Theory of ADR field. Theory of major different models of mediation, both in the U.S. and internationally. Application of mediation process to categories of disputes, family, workplace, and international. A-F only. Pre: graduate standing, or departmental approval. Resettable one time or up to three credits. A-F only. Pre: consent.

PACE 668 Facilitation: Facilitating Community and Organizational Change (3) Advanced conflict resolution course. Covers key issues in the prevention, management and resolution of multiparty conflicts. Combined lecture, discussion, and simulations. A-F only. Pre: graduate standing, or departmental approval. (Once a year)

PACE 690 Topics: Conflict Theory (V) Recent issues of policy and practice in peace and conflict management theory. Repeatable up to 12 credits. A-F only. Pre: graduate standing or consent.

PACE 695 Conflict Resolution Practicum (V) Practice in conflict resolution skills. Open to candidates for Certificate in Conflict Resolution. Repeatable one time or up to three credits. A-F only. Pre: consent.

PACE 699 Directed Reading and Research (V) Repeatable up to 9 credits. A-F only. Pre: departmental approval or consent.

PACE 790 Advanced Topics: Conflict Theory (3) Advanced seminar in issues of policy and practice in peace and conflict management theory. Repeatable one time. Graduate standing only. Pre: consent.

Pediatrics (PED)

School of Medicine

PED 531 7-Week Pediatric Clerkship (10) 7-week basic pediatric clerkship. Repeatable one time. Pre: third-year standing.

PED 532 Pediatrics Longitudinal Clerkship (5) Year-long clerkship in ambulatory setting, covering evaluation, diagnosis, and treatment of childhood diseases. Emphasis on primary prevention, normal growth and development of the neonate to adolescent, and arrangement of pediatric care, including outpatient, inpatient, and emergency room experiences. Repeatable two times. Pre: third-year standing and concurrent registration in 532 courses.

PED 545 (Alpha) Electives in Pediatrics (V) Fourth-year elective in pediatric sub-specialty areas in which medical students may receive clinical experiences and an in-depth understanding of specialty areas within the field of pediatrics. (A) Adolescent medicine; (B) ambulatory pediatrics; (C) clinical genetics; (D) Sub-Internship in neonatology; (E) Sub-Internship in pediatric cardiology; (F) Sub-Internship in pediatric emergency medicine; (G) Sub-Internship in pediatric hematology/oncology; (J) Sub-Internship in infectious diseases; (K) Sub-Internship in pediatrics-general ward in pediatrics; (M) extramural electives in pediatrics; (N) pediatric rheumatology; (P) developmental behavioral pediatrics; (Q) pediatric international peerceptorship; (R) Sub-Internship in pediatric critical care; (S) Pediatric radiology; (T) pediatric ultrasound; (U) pediatric nephrology. CR/NC only. Repeatable two times per alpha, not repeatable for (Q). Pre: 531 or 532.

PED 599 Directed Reading/Research (V) Repeatable unlimited times. CR/NC only. Pre: consent.

Persian (PERS)

College of Languages, Linguistics and Literature

PERS 101 Beginning Modern Persian I (4) Listening, reading, writing, speaking skills, language structure, and culture integrated in a variety of communicative and creative activities. HSL

PERS 102 Beginning Modern Persian II (4) Continuation of 101. Pre: 101 or consent. HSL
PHRM 111 Intensive Beginning Modern Persian (6) Combined content of 101 and 102 covered in one intensive course. HSL.

PHRM 201 Intermediate Modern Persian I (4) Continuation of 101. Listening, reading, writing, speaking in Persian structure, and culture integrated in a variety of communicative and creative activities. Pre: 102, 111, or consent. HSL.

PHRM 202 Intermediate Modern Persian II (4) Continuation of 201. Pre: 201 or consent. HSL.


PHRM 302 Third-Level Modern Persian II (3) Continuation of 301. Pre: 301 or consent.


PHRM 402 Fourth-Level Modern Persian II (3) Conducted in Persian. Advanced reading, writing, and conversations. Cultural contemporary and historical topics. Pre: 401 or consent.

PHRM 451 Structure of Modern Persian (3) Introduction to phonology, morphology, syntax, and semantics of Modern Persian. Pre: 202 or consent.

Pharmacology (PHRM)

School of Medicine

PHRM 202 Introduction to General Pharmacology (2) Drug discovery focused on emphasis on sites and mechanism of action, toxicity, fate, and uses of major therapeutic agents. Pre: mammalian physiology and dental hygiene major. DB.

PHRM 203 General Pharmacology (3) Similar to 202 but wider in scope of drugs discussed. Intended for undergraduates in the health sciences and related fields. Pre: mammalian physiology. DB.

PHRM 499 Directed Reading and Research (V) Directed reading and research in experimental pharmacology. Repeatable unlimited times. Pre: consent.

PHRM 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Repeatable unlimited times. Pre: master’s Plan B or C candidate and consent.

PHRM 590 Selected Topics in Pharmacology (V) Elective for medical students in Pharmacology. Repeatable up to 12 credits. CR/NC only. Pre: MDED 551.

PHRM 595 Principles of Pharmacology (1) Pharmacology elective course for medical students. MD students only. CR/NC only. Pre: MDED 554 or consent. (Fall only.)

PHRM 599 Research in Pharmacology (V) Pharmacology research elective for medical students. MD majors only. CR/NC only. Pre: MDED 551 or consent.

PHRM 601 General Pharmacology (3) Pharmacodynamics, receptor theory, modeling, clinical trials and the FDA will be covered. Concepts in ADME/T and clinical research are also considered. Pre: consent.

PHRM 602 Systemic Pharmacology (9) Provides instruction at an organ system/functional level covering major organ and functional systems of the human body. Concepts in pharmacological research at the animal, organ system and whole human level will also be considered. Repeatable one time. Pre: consent.

PHRM 640 Neuropharmacology (2) Physiology and pharmacology of central and peripheral nervous systems, focusing on synaptic chemistry and signaling. A-F only. Pre: CMB 606, or consent from the course director. (Cross-listed as CMB 640).

PHRM 699 Directed Research (V) Repeatable unlimited times.

PHRM 700 Thesis Research (V) Repeatable unlimited times.

PHRM 800 Dissertation Research (V) Repeatable unlimited times.

Philosophy (PHIL)

College of Arts and Humanities

PHIL 100 Introduction to Philosophy: Survey of Problems (3) Introduction to the kinds of problems that concern philosophers and some of the solutions that have been advanced to them. DH.

PHIL 101 Introduction to Philosophy: Morals and Society (3) Philosophical attempts to evaluate conduct, character, and social practices. DH.

PHIL 102 Asian Traditions (3) Universal themes and problems from Asian perspective. DH.

PHIL 103 Introduction to Philosophy: Environ- mental Philosophy (3) A critical examination of environmental issues; analyzing the nature of the human being, the nature of nature, and the relationship of the human being to nature. DH.

PHIL 110 Introduction to Deductive Logic (3) Principles of modern deductive logic. FS.

PHIL 111 Introduction to Inductive Logic (3) Introduction to the theory of arguments based on probabilities and to the theory of decision-making in the context of uncertainty. A-F only. FS.

PHIL 211 Foundations of Philosophy (3) An introduction to the history of philosophy based on translations of texts originally written in classical Greek or Latin. DH.

PHIL 212 Between Ancient and Modern Philo- sophy (3) Introduction to the history of philosophy based on translations of ‘modern’ works, that is works originally written in the late post-classical Latin or Arabic. DH.

PHIL 213 Modern Philosophy (3) Introduction to the history of philosophy based on texts or translations of ‘modern’ works. Pre: any course 100 or above in PHIL or WS, or consent. (Alt. years) DH.

PHIL 300 Business Ethics (3) Case studies and critical analyses of ethics in business. Readings from business, philosophy, law, etc. Pre: any course 100 or above in PHIL or BUS or BLAW, or consent. DH.

PHIL 301 Ethical Theory (3) Problems and methods in theory of moral conduct and decision. Pre: any course 101 or above in PHIL or 100 in POLS or SOC, or consent. DH.

PHIL 302 Political Philosophy (3) Problems and methods in philosophical theories of political legitimacy. Pre: any course 101 or above in PHIL or 100 in POLS or SOC, or consent. DH.

PHIL 303 Social Philosophy (3) Problems and methods in examination of contemporary life, values, and institutions in light of traditional philosophical problems of freedom, justice, authority, equality. Pre: any course 101 or above in PHIL or 100 in POLS or SOC, or consent. DH.

PHIL 304 Metaphysics (3) Problems arising from attempts to categorize rationally what is, and what appears to be. Among others, topics may include universals and particulars, personal identity, freedom and determinism, and time. Pre: any course 100 or above in PHIL, or consent. DH.

PHIL 305 Philosophy of Religion (3) Problems and methods. Nature of religious experience, alternatives to theism, existence of god, relation between faith and reason, nature of religious language. Pre: any course 100 or above in PHIL or REL, or consent. DH.

PHIL 306 Philosophy of Art (3) Problems and methods in aesthetic evaluation and in appreciation, creation, and criticism of art. Pre: any course 100 or above in PHIL or ARCH or ART or MUS or any DL course 100 or above; or consent. DH.

PHIL 307 Theory of Knowledge (3) Problems and methods in epistemology. Nature of knowledge, its varieties, possibilities, and limitations. Pre: any course 100 or above in PHIL, or 200 or above with either DB or DP or DS designation; or consent. DH.

PHIL 308 Philosophy of Science (3) Problems and methods. Domains of inquiry, methods of validation, and attendant moral concerns. Pre: any course 100 or above in PHIL, or 200 or above with either DB or DP designation; or consent. DH.

PHIL 310 Ethics in Health Care (3) Ethical issues in application and organization of biomedical resources; professional responsibility, confidentiality, euthanasia, experimentation in humans, etc. Pre: any course 100 or above in PHIL or MED or NURS or with a DB designation; or consent. DH.

PHIL 311 Philosophy and Aesthetics of Film (3) Aesthetics andontology of film and video, based on readings in the philosophy of film and the viewing of a number of films per semester. Pre: one course in PHIL or THEA, drama or film; or consent. See department for list of approved courses.

PHIL 312 Ethics in Practice (3) Team-taught exploration of five contemporary ethical issues using a variety of philosophical approaches and methods. Pre: any 101 course or above in PHIL or above 100 in POLS or SOC; or consent. (Once a year)

PHIL 313 Philosophy and Evolution (3) Explores the ethical and epistemological implications of the theory of evolution. Pre: any course in PHIL or BIOL, or consent. (Alt. years)

PHIL 314 Critical Thinking Pre-Medicine (3) Scientific and social perspectives on the nature of disease and their impact on medical practice. Exploration of these topics through reading, writing, and critical inquiry. Pre: any course in PHIL, 100 or above; or any two BIOL, CHEM or PHYS courses; or consent.

PHIL 315 The Role of Models in Global Environmental Science (3) Introduction to philosophy of science for those with some background in the natural sciences. Special emphasis on issues arising from the construction and use of models. Pre: any course 200 or above in PHIL or any course above 100 with either DB or DP designation, or consent. (Alt. years: spring) (Cross-listed as OCN 315).

PHIL 316 Science, Technology, and Society (3) Investigation of some of the complex interconnec-tions between science, technology, and society. Pre: any course 100 or above in PHIL or in a course with either DB or DP or DS designation, or consent. DH.

PHIL 317 Critical Thinking Pre-Law (3) Intro-duction to concepts and techniques for evaluating arguments with special emphasis on their application both to questions of law as well as issues in jurisprudence. Pre: any course 100 or above in PHIL or POLS or SOC, or consent. DH.

PHIL 318 Philosophy of Law (3) Historical and contemporary issues in law and legal theory. Law and morality; legal responsibility, justice, rights, punishment, judicial reasoning. Pre: any course 101 or above in PHIL or above 100 in BLAW or POLS or SOC, or consent. DH.

PHIL 319 Ethical Issues in the Law (3) Exploration of ethical issues that have come before (mainly U.S.) courts, including but not confined to, medical and criminal justice ethics. Repeatable one time. A-F only. Pre: 101 or a course numbered 200 or above in PHIL or HIST or ENGL or with a DS designation; or consent.

PHIL 320 American Philosophy (3) Survey of major philosophers and schools in development of American thought up to modern times. Pre: any course 100 or above in PHIL or ARAB, or consent. DH.

PHIL 330 Islamic Philosophy (3) Survey of major Islamic philosophers and schools. Pre: any course 100 or above in PHIL or ARAB, or consent. DH.

PHIL 350 Indian Philosophy (3) Survey of major orthodox and heterodox systems: Vedas, Upanishads, Bhagavad Gita, Vedanta, Jainism, Hinduism, Pre: any course 100 or above in PHIL or PALI or SNSK, or consent. DH.

PHIL 360 Buddhist Philosophy (3) Survey of central thinkers and schools. Pre: any course 100 or above in PHIL, CHN, JPN, PALI, SNSK, or TIB; or consent. (Cross-listed as ASIAN 360) DH.

Key to symbols & abbreviations: see the first page of this section.

480 Courses 2015-2016
PHIL 370 Chinese Philosophy (3) Survey of important schools and thinkers in classical Chinese traditions: Confucianism, Daoism, Mohism, Legalism. Pre: any course 100 or above in PHIL or CHN; or consent. DH

PHIL 380 Japanese Philosophy (3) Survey of central thinkers and schools from ancient to modern. Pre: any course 100 or above in PHIL or JPN, or consent. DH

PHIL 399 Directed Research (V) Repeatable up to a maximum of 6 credits. Pre: consent.

PHIL 402 Introduction to Phenomenology (3) Methods of analyzing the structures of experience, as developed by Husserl, Heidegger, Merleau-Ponty, Sartre, etc. Pre: any course 200 or above in PHIL, or consent. DH

PHIL 403 Introduction to Zen (Ch'an) Buddhist Philosophy (3) Development and philosophical significance of basic precepts, explored through translations of Chinese and Japanese sources. Pre: any course 200 or above in PHIL or CHN or JPN, or consent. DH

PHIL 414 (Alpha) Western Movements and Periods (3) (B) Greek; (C) late antiquity; (D) medieval; (E) Renaissance; (F) continental rationalism; (G) British empiricism; (H) German idealism; (I) 19th-century realism. Repeatable two times in different alphabets, not in same alphabet. Pre: any course 200 or above in PHIL or consent. DH

PHIL 417 Philosophy in Literature (3) Philosophical themes in the literary mode in world literature. Pre: any course 200 or above in PHIL or any DL course 200 or above, or consent. DL

PHIL 418 Feminist Issues in Philosophy (3) Examination of basic feminist issues in philosophy, and of responses to them. Pre: any course 200 or above in PHIL or WS or consent. (Cross-listed as WS 419) DH

PHIL 422 Philosophical Psychology (3) Classical and modern theories of mind, cognition, and action. Pre: any course 200 or above in PHIL or PSY, or consent. DH

PHIL 436 Philosophy of Language (3) Contem- porary theories in semantics and syntax; problems of meaning, reference, speech acts, etc. Pre: any course 200 or above in PHIL or LING, or consent. DH

PHIL 438 Gender and Environmental Philosophy (3) Introduction to women's perspectives and roles on ecological and environmental issues; critical analysis of eco-feminism as a social and political movement; cross-cultural comparison of women's roles in human ecology. Pre: any course 200 or above in PHIL or any course 200 or above with a DB or DP designation, or consent. (Cross-listed as WS 438) DH

PHIL 445 Symbolic Logic (3) Intermediate-level course covering proof techniques for classical, first-order predicate calculus, and an introduction to meta-theory. Pre: 110 or any course 200 or above in ICS or MATH; or consent. DH

PHIL 448 Individual Philosophers/Topics (3) Examination of work of a major Eastern or Western philosopher, or topic of philosophical concern. Repeatable three times. Pre: 100, 101, 102, 103, 211, 212, 213, or consent. DH

PHIL 449 Undergraduate Capstone (3) Capstone seminar for undergraduate majors. Concentration on a topic of current philosophical concern. Repeatable one time with consent. Pre: declared major in PHIL with at least six courses 200 or above in PHIL, or consent. DH

PHIL 492 Philosophy with Children (3) Examines the theories and practice of teaching philosophy in elementary, middle, and high school classrooms. Pre: any course 200 or above in PHIL or EDUC, or consent. DH

PHIL 493 Teaching Philosophy (3) Supervised work in elementary, middle, and high school classrooms, facilitating philosophical inquiry with students. Repeatable one time. Pre: 492 or consent.

PHIL 500 Master's Plan B/C Studies (1) Enrollment for degree completion. Pre: master's Plan B or C candidate and consent.

PHIL 611 Studies in Ethics (3) Key issues in contemporary philosophical debates about ethics. Repeatable one time with consent. Pre: graduate standing or consent. Recommended: 301.

PHIL 614 Studies in Metaphysics (3) Key issues in ontological and cosmological theory. Problems of materialism, idealism, phenomenalism, etc. Repeatable one time with consent. Pre: graduate standing or consent. Recommended: 304.

PHIL 615 Studies in Philosophy of Religion (3) Key issues in theory of religious experience, language, reasoning, Pre: graduate standing or consent. Recommended: 305.

PHIL 616 Studies in Aesthetics (3) Key issues in contemporary aesthetics, against background of traditional Western and Eastern theories. Repeatable one time with consent. Pre: graduate standing or consent. Recommended: 306.

PHIL 617 Studies in Epistemology (3) Key issues in contemporary philosophical debates about knowledge. Repeatable one time with consent. Pre: graduate standing or consent. Recommended: 307.

PHIL 622 Studies in Hermeneutics (3) Important debates concerning the methodology of textual interpretation. Pre: graduate standing or consent.

PHIL 630 History and Theory of Science (3) Exploration of problems at the intersection of historical studies of science as a process and philosophical analysis of basic concepts of the sciences. Pre: graduate standing or consent. Recommended: 368 or 371.

PHIL 670 Confucianism (3) Ethical, social, institutional problems in classical theory. Repeatable one time with consent. Pre: graduate standing or consent. Recommended: 370.

PHIL 671 Neo-Confucianism (3) Logic, epistemology, metaphysics, and ethics of major Chinese Neo-Confucian philosophers, 11th–16th century. Repeatable one time with consent. Pre: graduate standing or consent. Recommended: 370.

PHIL 672 Daoism (3) Critical examination and evaluation of major philosophical ideas in Lao Zi, Zhuang Zi, and the Neo-Daoists. Repeatable one time with consent. Pre: graduate standing or consent. Recommended: 370.

PHIL 699 Directed Research (V) Repeatable up to 30 credits. Pre: master's Plan A candidate and consent. DH

PHIL 700 Thesis Research (V) Repeatable up to six credits. Pre: master's Plan A candidate and consent.

PHIL 720 Seminar on Individual Philosophers (3) The most significant texts of an important philosopher. Repeatable three times in the MA program; an additional four times in the PhD program. Pre: graduate standing or consent.

PHIL 725 Seminar in Philosophical Topics (3) Close study of a topic of important philosophical controversy. Repeatable two times in the MA program; an additional three times in the PhD program. Pre: graduate standing or consent.

PHIL 730 Seminar in Islamic Philosophy (3) Major philosophical problems in Islamic thought. Focus either on a specific topic or one author. Repeatable one time. Pre: graduate standing or consent. (Once a year)

PHIL 735 Seminar on Philosophical Periods (3) Close study of a period of significant and connected philosophical activity within a philosophic tradition. Repeatable two times with consent. Pre: graduate standing or consent.

PHIL 740 Seminar in Philosophical Texts (3) Reading, analysis, and critical discussion of one (or of several closely related) philosophical text in its original language (sometimes in conjunction with established translations). Repeatable two times with consent. Pre: graduate standing or consent.

PHIL 750 Seminar in Indian Philosophy (3) Major philosophical problems in the development of Indian thought during its formative period. Repeatable two times with consent of instructor and Graduate Chair. Pre: graduate standing or consent. Recommended: 350.

PHIL 760 Seminar in Buddhist Philosophy (3) Major philosophical problems in the development of Buddhist thought during its formative period. Repeatable one time with consent. Pre: graduate standing or consent. Recommended: 360.

PHIL 770 Seminar in Chinese Philosophy (3) Fundamental issues, problems, movements, and schools of Chinese philosophy, such as classical Confucianism, Daoism, Legalism, Chinese logic, and Neo-Confucianism. Repeatable one time with consent. Pre: graduate standing or consent. Recommended: 370.

PHIL 771 Seminar in Yi Jing (3) Metaphysical, epistemological, ethical, and axiological views of Yi Jing and its claims as foundational work for classical Confucianism, Daoism, and Neo-Confucianism. Pre: graduate standing or consent.


PHIL 790 Seminar in Comparative Philosophy (3) Comparison of wide-ranging philosophical traditions. Specific topic changes each semester. Consult department for more information. Repeatable two times with consent. Pre: graduate standing or consent.

PHIL 800 Dissertation Research (V) Repeatable unlimited times.

Physics (PHYS)

College of Natural Sciences

A grade of C (not C-) or better is required in all prerequisite courses. Credit toward the degree is given for either 151L/152L or 170L/170/170L and similarly for either 152L/152L or 272/272L. However, the courses may come from different sequences.

PHYS 100 Survey of Physics (3) Mechanics, electricity and magnetism, waves, optics, atomic and nuclear physics. Only algebra and geometry used. For non-science majors. DP

PHYS 100L Survey of Phys 100 Lab (1) (3 hr Lab) Hooke's law, falling bodies, collisions, Boyle's law, electric and magnetic fields, induction, waves, optics. Pre: PHYS 100.

PHYS 109 Physics in the Arts (3) Introduction to physics of sound and light, with applications to music and visual arts: sound perception, harmony, musical scales, instruments; lenses, cameras, color perception and mixing. Uses algebra and geometry. Intended primarily for non-science majors, DP.

PHYS 121 How Things Work: Physics for Everyday Life (3) Introduction to physics and science in everyday life. It considers objects from our daily environment, and focuses on the principles such as motion, forces, heat, electromagnetism, optics, and modern physics. A-F only. DP

PHYS 151 College Physics I (3) Non-calculus physics. Mechanics, wave motion, heat. Pre: MATH 140, or 215 or higher; or qualifying score on math assessment exam. DP

PHYS 151L College Phys I Lab (1) (3 hr Lab) Introduction to experimental analysis, physical observation and measurement, experiments on conservation laws, fluid friction, oscillations. Pre: 151 (or concurrent). DY

PHYS 152 College Physics II (3) Electricity, magnetism, optics, modern physics. Pre: 151 or 170. DP

PHYS 152L College Phys II Lab (1) (3 hr Lab) Optics, electric and magnetic fields, DC and AC circuitry. Pre: 151L or 170L, and 152 (or concurrent). DY

PHYS 170 General Physics I (4) Mechanics of particles and rigid bodies, wave motion, thermodynamics and kinetic theory. Pre: MATH 242 (or concurrent) or MATH 252A (or concurrent). MATH 216 may be substituted with consent. DP
PHYS 170A Honors General Physics I (4) Special format for topics: mechanics of particles and rigid bodies, wave motion, thermodynamics and kinetic theory. Pre: MATH 242 (or concurrent) or MATH 252A (or concurrent). MATH 216 may be substituted with consent. Co-requisite: 170L. DP

PHYS 170L General Physics I Lab (1) (3-3 hr Lab) Similar to 151L but at 170 level. Pre: 170 (or concurrent) or 170A (or concurrent). DY

PHYS 272 General Physics II (3) Electricity and magnetism, optics, X-rays, X-ray spectroscopy. Pre: 151 or 170 and MATH 242 or MATH 252A. MATH 216 may be substituted with consent. Co-requisite: 272L. DP

PHYS 272L General Physics II Lab (1) (3-3 hr Lab) Similar to 152L but at 272 level. Pre: 151L or 170L and 272 (or concurrent) or 272A (or concurrent). DY

PHYS 274 General Physics III (3) Relativity, introduction to quantum mechanics, atomic and nuclear physics, and physical optics. Pre: 152 or 272 and MATH 243 (or concurrent) or MATH 253A (or concurrent); or consent. DP

PHYS 274L General Physics III Lab (1) (3-3 hr Lab) Experiments illustrating selected concepts of 274, including diffraction and interference of light, wave nature of matter, photoelectric effect, atomic spectra, and semiconductors. Pre: 152L or 272L, and 274 (or concurrent). DY

PHYS 305 Computational Physics (4) (3 Lec, 1-3 hr Lab) Analysis of physical systems and problem solving using computers and numerical methods. Pre: 152 or 272 or 272A, and MATH 244 (or concurrent) or MATH 253A (or concurrent); or consent. DP

PHYS 310 Theoretical Mechanics I (3) Particle dynamics, rigid-body dynamics, planetary motion. Pre: 151 or 170 and MATH 244 (or concurrent) or MATH 253A (or concurrent); or consent. DP

PHYS 311 Theoretical Mechanics II (3) Rigid-body mechanics continued, fluid dynamics, wave motion, theory of relativity. Pre: 310. DP

PHYS 350 Electricity and Magnetism (3) Electrostatic and magnetostatic fields in vacuum and in matter; induction; Maxwell’s equations; AC circuits. Pre: 152 or 272 or 272A; and MATH 244 (or concurrent) or MATH 253A (or concurrent); or consent. DP

PHYS 399 Individual Work in Advanced Physics (V) Limited to students with a minimum cumulative GPA of 2.7 or a minimum GPA of 3.0 in physics. Pre: 400. DP

PHYS 400 Applications of Mathematics in Physical Sciences (3) Mathematical methods, techniques; applications to problems in physical sciences. Pre: MATH 244 or MATH 253A, and MATH 307 or 311; or consent. Recommended: upper division mathematics course. DP

PHYS 430 Thermodynamics and Statistical Mechanics (3) Laws of thermodynamics, heat transfer, kinetic theory, statistical mechanics. Pre: 274 and MATH 244 or MATH 253A. DP

PHYS 440 Solid-State Physics I (3) Crystal structure: lattice vibrations; phonon effects; electronic processes in solids (metals, semiconductors, and superconductors). Pre: 274 and 350 (or concurrent). DP

PHYS 441 Solid-State Physics II (3) Energy-band calculations, optical processes, Josephson effect, theories of direct and indirect transitions, physics of color centers, order-disorder transformation. Pre: 440. DP

PHYS 450 Electromagnetic Waves (3) Field equations, plane, spherical and guided waves. Pre: 350. DP

PHYS 600 Physical Optics (3) Fundamentals of classical physical optics emphasizing linear systems theory, including optical fields in matter, polarization phenomena, temporal coherence, interference and diffraction (Fourier optics). Specialized applications include Gaussian beams, laser resonators, pulse propagation, and nonlinear optics. Pre: 450 (or concurrent with a minimum grade of C) or EE 372L (or concurrent) or MATH 242 or MATH 252A, MATH 216 may be substituted with consent. Co-requisite: 475. DP

PHYS 475 Electronics for Physicists (4) (3 Lec, 1-3 hr Lab) Investigation of Kirchhoff’s Laws, electromagnetic circuit theory. Fourier analysis and stability concepts. Circuits. Applications to physical measurements are stressed. Pre: junior standing, and 152L or 272L. DP

PHYS 476 Modern Electronics for Physicists (3) Introduction to high performance solid state instrumentation by means of practical research electronics: printed circuit board construction; complex, programmable logic design/verification; integrated circuit SPICE simulation. Detector fabrication and test emphasis during final project. Pre: 475 (or equivalent) or consent. (Spring only)

PHYS 480 Quantum Mechanics I (3) Wave mechanics, Schrodinger equation, angular momenta, potential problems. Pre: 274 or 310, 350, 400 (or concurrent); either MATH 244 or 253A; and either MATH 311 or 307; or consent. DP

PHYS 480L Advanced Physics Lab (2) Advanced experiments including angular correlations in positron annihilation, optical polarization phenomena, chaos, measurements of c and the muon lifetime, crystal diffraction and the Mossbauer effect. Numerical simulations of particular physics experiments are included. Pre: 274L and 480 (or concurrent), or consent. DY

PHYS 481 Quantum Mechanics II (3) Continuation of 480; atomic physics, scattering, perturbation theory. Pre: 480. DP

PHYS 481L Advanced Physics Lab (2) Advanced experiments including angular correlations in positron annihilation, optical polarization phenomena, chaos, measurements of c and the muon lifetime, crystal diffraction and the Mossbauer effect. Numerical simulations of particle physics experiments are included. Pre: 274L, 480L, and 480L; or consent. DY

PHYS 485 Professional Ethics for Physicists (1) Student seminar on ethical principles and their application to research in physics and astronomy and closely-related fields. Historical examples will be presented and discussed by the participants. PHYS majors only. A-F only: Pre: 310 or ASTR 300 (or concurrent), or consent. DP

PHYS 490 Modern Physics (3) Introduction to nuclear and elementary-particle physics. Pre: 480 (or concurrent). DP

PHYS 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.

PHYS 505 Physics Workshop for Teachers (V) Major concepts of physics taught by means of hands-on conceptual activities for elementary and secondary teachers, Restricted to in-service teachers, or consent. Repeatable one time. (Cross-listed as NSCI 505)

PHYS 600 Methods of Theoretical Physics (3) Mathematical tools of theoretical physics. Continuation of 400 but with an independent selection of topics. Pre: 670 or 671; or consent. DP

PHYS 610 Analytical Mechanics (3) Dynamics of particles, particle systems; rigid bodies; Lagrangian and Hamiltonian equations; special relativity. Pre: 600 (or concurrent), or MATH 402. DP

PHYS 650 Electrodynamics I (3) Potential theory, Maxwell’s equations, electromagnetic waves, boundary value problems. Pre: 450 and 600 (or concurrent) or MATH 402. (Alt. years)

PHYS 651 Electrodynamics II (3) Relativistic electrodynamics, radiation by charged particles. Pre: 650L. (Alt. years)

PHYS 660 Advanced Optics (3) Contemporary advanced applications in optics including nonlinear optics and optical parametric oscillators, atomic lasers and laser systems, and free-electron lasers. Pre: 460. (Alt. even years)

PHYS 670 Quantum Mechanics (3) Physical basis of Schrödinger’s equation and applications. Approximation methods. Applications to atomic, nuclear, and molecular physics. Pre: 400 or 481 and 400 or MATH 402.


PHYS 690 Seminar (V) Discussion and reports on physical theory and recent developments. CR/NC only. Pre: graduate standing or consent.

PHYS 694 Condensed Matter Seminar I (3) Results and discussions of current topics in condensed matter physics. Repeatable six times with consent.

PHYS 695 Seminar on Atomic and Solid-State Physics (1) Reports and discussion on recent developments in atomic, surface, and solid-state physics. Repeatable with consent.

PHYS 696 Seminar on Elementary Particle Physics (1) Reports and discussion on recent developments in elementary particle physics. Repeatable four times. Pre: consent.

PHYS 699 Directed Research (V) Repeatable unlimited times. Pre: consent.


PHYS 711 Topics in Particles and Fields (3) Topics in current theoretical research; e.g., unified field theories, general relativity, gravitation, and cosmology. Repeatable four times. Pre: consent.

PHYS 712 Special Topics Experimental Physics (3) Topics in current experimental research in low-energy physics, high-energy physics, cross-disciplinary physics. Repeatable in different topics. Pre: consent.

PHYS 730 Statistical Physics I (3) Equilibrium thermodynamics; Gibbs ensembles; quantum statistics; ideal and non-ideal Fermi; Bose and Boltzmann gases; phase transitions; and critical phenomena. Pre: 670. (Alt. years)

PHYS 731 Statistical Physics II (3) Nonequilibrium thermodynamics, transport theory, fluctuation dissipation theorem, many-body Green’s function methods, normal Fermi and Bose liquids, superfluidity, superconductivity. Pre: 670 and 730. (Alt. years)

PHYS 772 Quantum Field Theory I (3) Relativistic wave equations and their solutions. Dirac’s theory of the electron, propagator techniques. Applications to quantum electrodynamics. Pre: 671. (Alt. years)

PHYS 773 Quantum Field Theory II (3) Local gauge invariance, Yang-Mills theory; quantum chromodynamics, spontaneous symmetry breaking and Goldstone bosons; the standard electroweak theory; grand unified theories. Pre: 772. (Alt. years)

PHYS 777 Nuclear and Particle Physics (3) Nuclear physics; electrodynamics; hadron structure and partons. Techniques of particle physics. Pre: 481 and 671. (Alt. years)

PHYS 778 Nuclear and Particle Physics II (3) Quantum chromodynamics; electroweak interactions; the standard model. Techniques of particle physics. Pre: 777 or consent. (Alt. years)

PHYS 785 Solid-State Theory (3) Crystal symmetry, electronic excitations in solids, transport theory, optical properties, cohesive energy, lattice vibrations, electron-phonon interaction, electron-electron interaction, magnetism, superconductivity. Pre: 670. (Alt. years)

PHYS 786 Solid-State Theory (3) Crystal symmetry, electronic excitations in solids, transport theory, optical properties, cohesive energy, lattice vibrations, electron-phonon interaction, magnetism, superconductivity. Pre: 785. (Alt. years)

PHYS 800 Dissertation Research (V) Research for doctoral dissertation. Repeatable unlimited times.
PHYSIOLOGY (PHYL)
School of Medicine
The minimum grade required for undergraduate prerequisites is D or better, and graduate prerequisites is C (not C-) or better.

PHYL 103 Human Physiology and Anatomy (5)
Introduction to human physiology and anatomy designed to serve the needs of dental hygiene students and others interested in pursuing health-related careers. (Cross-listed as KRS 113) DB
PHYL 103L Physiology and Anatomy Lab (1)
Laboratory to complement 103. Co-requisite: 103. DY

PHYL 141 Human Anatomy and Physiology (3)
Anatomy, histology, physiology, biochemistry, genetics of human systems presented in integrated anatomy-physiology format. Priority to students in nursing. Pre: high school chemistry. DB

PHYL 141L Human Anatomy and Physiology Lab (1) Anatomy, histology, physiology, biochemistry, genetics of human organ systems presented in integrated anatomy-physiology format. Priority to students in nursing. Pre: 141 (or concurrent) or consent. DY

PHYL 301 Human Anatomy and Physiology (4)
Integrated presentation of human anatomy and physiology. An optional laboratory (PHYL 301L) is available separately. Pre: BIOL 171 and BIOL 172, or any PHYL course; and CHEM 161 (or higher) or any BIOL course; or consent. DB

PHYL 301L Human Anatomy and Physiology Lab (1) Laboratory study of human anatomy and physiology by means of models, histology slides, experiments, and demonstrations. Co-requisite: 301 or consent. DY

PHYL 302 Human Anatomy and Physiology (4)
Continuation of 301. Pre: 301/301L or consent. DB

PHYL 302L Human Anatomy and Physiology Lab (1) Continuation of 301L. Pre: 301/301L or consent. Co-requisite: 302. DY

PHYL 401 Human Physiology: Organ Systems (4)
Basic function of the major organ systems in man. Covers cardiovascular, respiratory, renal, acid-base, and gastrointestinal physiology. Pre: 302 or equivalent with consent. DB

PHYL 402 Human Physiology: Integrative Systems (4) Senior-level course in integrative systems (central nervous system and endocrinology). Complements 401. Pre: 401 and either BIOL 341 or CHEM 152, or consent. DB

PHYL 403 Environmental Physiology (3) Animal (including human) responses to environmental challenges such as heat, cold, altitude, diving, physical work, etc. Human adaptation in a comparative context. Pre: 302, or 401, or ZOOL 430; or consent. DB

PHYL 403L Environmental Physiology Lab (1) Laboratory experiences in measuring human physiological responses to environmental stress. Complements 403. DY

PHYL 405 Applied Muscle Physiology (3) Science and technology of strength training. Anatomy, kine- siology, physics, and physiology applied to development of muscular strength and mass. Repealable one time. Pre: 302; or consent. DB

PHYL 450 Physiological Anthropology (3) Study of ecological factors in human variation. Human populations and their biological and cultural responses to the environment. Pre: ANTH 215 or consent. DB

PHYL 451 Human Biology (4) Introduces upper division students in the social or non-biological sciences to the basic concepts of physiology, anatomy, and biochemistry. Repeatable two times. Pre: upper division standing. DB

PHYL 499 Directed Research (V) Repeatable unlimited times. Pre: junior or senior undergraduate status.

PHYL 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Repeatable unlimited times. Pre: master’s Plan B or C candidate and consent.

PHYL 545 Topics in Medical and Applied Physiology (V) Fourth-year elective for medical students; in-depth study of selected topics in physiological basis of medical practice.

PHYL 604 Human Physiology (4) Graduate level lecture overview of major organ system physiology in humans, including (but not limited to) basic cell physiology, cardiovascular, pulmonary, renal, gastric, intestinal, endocrine, and neurophysiology. A-F only. Pre: 301 and 302 or consent. (Spring only)

PHYL 606 Human Neurophysiology (2) Physiology of human nervous system with emphasis on special senses and control and coordination of movement. Repeatable one time. Pre: 302 or 604, or consent.

PHYL 609 Cardiovascular Diseases (3) Selected topics in cardiovascular physiology. Emphasis on dynamic aspects of the heart and circulation. Pre: 604 or consent.

PHYL 610 Experimental Physiology (2) Biophysical approach to selected techniques of quantitative experimental physiology. Pre: 604 or consent.

PHYL 710 Special Topics: Water and Electrolytes (1)

Plant and Environmental Protection Sciences (PEPS)
College of Tropical Agriculture and Human Resources
A grade of C or better is required in a prerequisite course.

PEPS 210 Introduction to Environmental Science (3) Analysis of our environment with emphasis on understanding relationships and interactions of physical, biological, technological, and political components using scientific methods of inquiry. Food supply and safety, water quality, pollution control, biodiversity, environmental policy. Open to nonmajors. (Cross-listed as NREM 210) DB

PEPS 250 The World of Insects (3) Biology/ecology of insects with emphasis on relationships to plants, animals, and especially people in Hawai‘i and the tropics. Open to nonmajors. A-F only.

PEPS 310 Environment and Agriculture (3) Overview of environmental conditions associated with agriculture, specifically pest management issues, and options for environmentally responsible management and amelioration of these impacts. Pre: 210 or consent.

PEPS 350 Invasive Pest Species (3) Ecological, economic and sociological impacts of invasive pest species on tropical ecosystems; characteristics of invasive species and nature of vulnerable habitats; management of invasive species or eradication options; impacts on evolution, biological diversity and ecological stability. Open to nonmajors. (Alt. years: spring) DB

PEPS 363 General Entomology (3) Biology, diversity, and ecology of insects and arthropods with emphasis on Hawaiian fauna. Classification to order level. A-F only. Pre: BOT 101 or ZOOL 101 or BIOL 171; or consent. DB

PEPS 363L General Entomology Laboratory (1) Laboratory in classification of primarily student level of Hawai‘i’s insects and arthropods. A-F only. Pre: 363 (or concurrent) or consent. DY

PEPS 371 Genetics: Theory to Application (3) Fundamentals of genetic theory using biotechnological procedures and techniques. Plant and animal breeding as practical applications. Repeatable one time. A-F only. (Cross-listed as TPSS 371)

PEPS 402 Principles of Biochemistry (4) Molecular basis of living processes in bacteria, plants, and animals; emphasis on metabolism of carbohydrates, lipids, proteins, and nucleic acids. Pre: BIOL 275/275L and CHEM 273, or consent. (Cross-listed as BIOL 402 and MBBE 402) DB

PEPS 405 Plant Pathogens and Diseases (4) (3 Lecs, 1-3 hr Lab) Classification, morphology, ecolog- y, and biology of bacteria, fungi, nematodes, and viruses that attack economic crops. Epidemiology and control of plant diseases. Pre: 210 or BOT 101 or MICR 130, or consent. (Fall only) DB

PEPS 410 Sustainable Soil and Plant Health Management (2) Provides knowledge and understanding of soils, agroecology, and sustainable approaches for plant health management that prepares students for applied research in various tropical cropping systems. A-F only. Pre: 210 or TPSS 220 or consent. (Alt. years: spring) DB

PEPS 412 Environmental Biochemistry (3) Biochemical and chemical principles of occurrence, distribution, biotic and abiotic conversion, fate, and impact of synthetic and natural molecules in the environment. Important pollutants will be used as case studies to illustrate the principles. A-F only. Pre: CHEM 152 or CHEM 272, and CHEM 162 or CHEM 171; or consent. (Spring only) (Cross-listed as MBBE 412) DB

PEPS 418 Turfgrass Pest Management (4) Provides students with knowledge and real world experiences in turfgrass management. Common cool-season turfgrasses and pest management are also discussed. Repeatable unlimited times but credit earned one time only. A-F only. Pre: 210 or consent. (Fall only) (Cross-listed as TPSS 418) DB

PEPS 421 Foundations of Pest Management (4) (3 Lecs, 1-3 hr Lab) Principles and concepts of insect pest management using biological, ecological, cultural, behavioral, legislative, microbial and chemical methods. A-F only. Pre: one of the following: 250 or 363, BIOL 171, BIOL 172, or BOT 101; or consent. (Spring only) DB

PEPS 422 Biocontrol of Invasive Species (3) Biological control of arthropods, weeds, plant pathogens, and vertebrates. Pre: 363 or consent. DB

PEPS 430 Plant Disease Management (3) Diagnosis, epidemiology, and integrated management of important plant diseases. Important crops for key plants and cultivated crops in various agroecosystems in Hawai‘i, the Pacific, and the global tropics. Pre: 405. (Spring only) DB

PEPS 451 Environmental Law (3) Exploration of federal laws, regulations and precedents that govern our interaction with the environment. Analysis of laws regulating air, water, toxins, pests, endangered species, and environmental justice. Pre: junior or senior standing.

PEPS 463 Urban Pest Management (3) (2 Lecs, 1-3 hr Lab) Biology, ecology, and management of pest organisms associated with people, structures and the urban environment. Pre: 363 or consent. DB

PEPS 481 Weed Science (3) (2 Lecs, 1-3 hr Lab) Weed classification, edaphic factors for weediness; principles of weed control; properties, uses, and action of herbicides. Lab: pesticide application equipment and techniques, no-till farming, greenhouse and field experiments. Pre: CHEM 152 and TPSS 200, or consent. (Fall only) (Cross-listed as TPSS 481) DB

PEPS 486 Insect-Microbe Interactions (3) Multi-disciplinary treatment of medical entomology, vector entomology, insect pathology and symbiosis. Topics are addressed on evolutionary, ecological and molecular levels. Pre: BIOL 172 or MICR 130; or consent.

PEPS 491 Topics in Plant & Environmental Protection (V) Study and discussion of significant topics and themes. May be offered by visiting faculty, extension faculty or research faculty. Repeatable two times.

Key to symbols & abbreviations: see the first page of this section.
PEPS 495 PEPS Capstone (4) Integration and application of academic knowledge and critical skills emphasizing professional development, Directed Research, field studies, employment with cooperating businesses, government or schools are all options. A-F only. Pre: consent.

PEPS 499 Directed Research (V) Conduct original research in environmental protection sciences. Limited to qualified undergraduate students. Repeatable two times. CR/NC only.

PEPS 601 Agrosecurity and Food Safety (2) Concepts of agrosecurity and food safety (including plant and animal biosecurity), global impacts of introduced pests and diseases, and current mechanisms for interception of pests and mitigation of disease. A-F only. Pre: 402 or BIOC 441; consent. (Fall only)

PEPS 605 Biology of Plant Pathogens: Fungi and Nematodes (4) (2 Lec, 2-3 hr Lab) Principles and concepts in pathogen biology, epidemiology and management of plant diseases caused by fungi, oomycetes, and nematodes. Laboratory techniques for isolation and identification of pathogens and diseases. A-F only. Pre: 605 (with a minimum grade of B). (Spring only)

PEPS 616 Plant Nematology (3) (2 Lec, 1-3 hr Lab) Study of nematode biology (taxonomy, genetics, behavior), interactions with plants and animals, and sustainable management practices in an integrated lecture-laboratory setting. Pre: graduate standing or consent.

PEPS 630 Plant Virology (4) (2 Lec, 2-3 hr Lab) Isolation, identification, and molecular biology of plant viruses; biological and physical properties. Pre: 402, 405; or consent.

PEPS 641 Insect Physiology (2) (2 Lec) Study of the principal physiological and biochemical functions in insects, with emphasis on hormonal interactions. Pre: 402 or consent.

PEPS 646 Plant-Pathogen Interactions (3) Diagnosis, molecular biology, genetics, and infection mechanisms of bacterial plant pathogens and symbionts. Pre: one of BIOC 481, MICR 351, MICR 475; or consent. (Cross-listed as MICR 646)

PEPS 652 Molecular Plant-Fungal Interactions (3) Focus on interactions between plant pathogenic fungi/oomycetes and their host responses at the molecular and cellular level. Current genetic and genomic approaches to study plant-fungal interactions will be discussed. Graduate standing only. Pre: consent. (Every 2 years) (Cross-listed as MBBE 652)

PEPS 660 Seminar in Plant Pathology (1) Seminar on research and topics in plant pathology. Repeatable unlimited times. A-F only. Pre: graduate standing or consent.

PEPS 661 Medical and Veterinary Entomology (3) (2 Lec, 1-3 hr Lab) Vector control; insects and other arthropods in relation to human and animal diseases. Pre: 363 or consent.

PEPS 662 Systematics and Phylogenetics (3) (2 Lec, 1-3 hr Lab) Classification and study of diversity among insects and other life forms. Use of morphological and molecular characters to reconstruct evolutionary histories. A-F only. Pre: graduate standing or consent.

PEPS 671 Insect Ecology (3) (2 Lec, 1-3 hr Lab) Insects as living units in an environment of physical and biotic factors. Pre: consent of instructor.

PEPS 675 Biological Control of Pests (3) (2 Lec, 1-3 hr Lab) Fundamental concepts. Critical study of major biological control projects. Pre: 421 or consent. Recommended: 662; and ZOOL 631 or 632.

PEPS 681 Pesticide Toxicology (3) Principles of toxicology: chemical and biochemical mechanisms of pesticide toxicity. A-F only. Pre: 402 or BIOC 441; CHEM 272; or consent. (Fall only)

PEPS 686 Insect Transmission of Plant Pathogens (3) (2 Lec, 1-3 hr Lab) A multidisciplinary treatment of insect transmission of plant pathogens. Insect-plant and cellular insect-pathogen interactions and management strategies will be emphasized. Pre: 609 or consent.

PEPS 690 Seminar in Entomology (1) Seminars on research and topics in entomology. Repeatable unlimited times. Pre: graduate standing or consent.

PEPS 691 Special Topics (V) Study and discussion of significant topics and problems in plant and environmental protection sciences at an advanced level. Offered by visiting or existing faculty as a special course. Repeatable unlimited times. Pre: graduate standing or consent.

PEPS 695 Plan B Master’s Project (3) Independent study for students working on a Plan B master’s project. A grade of at least A is required when the project is satisfactorily completed. A-F only. Pre: graduate standing in entomology or tropical plant pathology.

PEPS 699 Directed Research (V) Directed research, critical reviews in environmental protection sciences, entomology, or plant pathology. Repeatable unlimited times. CR/NC only.


PEPS 800 Dissertation Research (V) Research for doctoral dissertation. Repeatable unlimited times.

Political Science (POLS)

College of Social Sciences

Either a 100 level or 200 level course is a prerequisite to all 300 level courses except with the consent of the instructor.

POLS 110 Introduction to Political Science (3) Discussion of politics as an activity and of political problems, systems, ideologies, processes. A-F only. Pre: consent.

POLS 120 Introduction to World Politics (3) Power and contemporary world politics since 1945 with emphasis on the U.S. role. DS

POLS 130 Introduction to American Politics (3) American political processes and institutions, as seen through alternative interpretations. Emphasis on opportunities and limitations for practical political participation. DS

POLS 150 Introduction to Global Politics (3) Foundations in global politics from political, historical, and multicultural perspectives. A-F only. FGB

POLS 170 Politics and Public Policy (3) Perspectives on the role of government in guiding economies and civil societies with particular emphasis on the recent U.S. DS

POLS 171 Introduction to Political Futures (3) Introduction to political future studies. Using science fact and fiction, shows how past and present images of the future influence people’s actions. DS

POLS 190 Media and Politics (3) Influences and effects of media on politics. Setting public agendas, interpreting events, using the political process, political learning through popular culture. DS

POLS 200 Reading and Writing Politics (1) Develop skills needed to read and write political texts. Weigh competing views; read and analyze texts for what they do and do not say; craft and defend evidence-based arguments; practice writing mechanics and style. Repeatable two times. POLS majors only or consent. A-F only.

POLS 201 Problems of War and Peace (3) Introduction to the problems individuals and political communities currently face with respect to war, peace, and international conflict. Includes questions of human nature, economy, morality, nuclear deterrence, arms control and disarmament, and alternatives to war. DS

POLS 241 Political Design and Futuristics (3) Possible social and political alternatives for the future. Conditions likely if present trends continue, formulation of visions of better futures, means for their achievement. DS

POLS 271 Race and Politics (3) Racial inequality in the U.S.; mechanisms of institutional racism in employment, education, criminal justice, electoral politics. DS

POLS 301 Hawai‘i Politics (3) Introduction to and critical study of institutions, governments, and political processes in Hawai‘i. Attends to race, class, gender, sexuality, indigeneity and nationality. Grounded in Native Hawaiian perspectives, with an emphasis on comparative study and dialogue. Pre: any 100- or 200-level POLS course, or consent.

POLS 302 Native Hawaiian Politics (3) Critical study of issues in contemporary Native Hawaiian politics, with an emphasis on application and active engagement. Pre: any 100- or 200-level POLS course or consent.

POLS 303 (Alpha) Topics in Hawai‘i Politics (3) Intensive examination of particular institutions, processes, and issues. (B) the military in Hawai‘i; (C) political thought in Hawaiian; Taught in Hawaiian; (D) politics of food. A-F only for (D). Pre: HAW 302 (or concurrent) for (C) only, sophomore standing or higher or consent. (FGB Cross-listed as HAW 428) DS for (B), DH for (C)

POLS 304 Indigenous Politics (3) Conceptualizing politics from the perspective of indigenous epistemologies, philosophies, language, and social and political movement. Pre: sophomore standing or higher, or consent.

POLS 305 Global Politics/Comparative (3) Introduction to global politics with emphasis on concepts and theories developed from a comparative politics perspective. Pre: sophomore standing or higher, or consent.

POLS 306 Comparative Politics of Developing Countries (3) Political, economic, and social development in the Third World. Repeatable one time. Pre: sophomore standing or higher, or consent. (Cross-listed as ASAN 404) DS

POLS 307 (Alpha) Topics in Comparative Politics: Country/Regional (3) Political, social, and economic processes in specific countries/regions. (B) Southeast Asia; (C) Pacific Islands; (D) Middle East; (E) Philippines; (F) Japan; (G) Europe; (H) India; (K) East Asia, Repeatable one time. Pre: sophomore standing or higher, or consent. DS

POLS 308 Chinese Political Economy (3) Interdisciplinary review and analysis of the social and political issues in contemporary China, the intersection between state and society in national policies, the relationship between cultural tradition and technological modernization in the social transformation process. A-F only. Pre: sophomore standing or higher, or consent. (Cross-listed as ASAN 308) DS

POLS 309 Politics of Indigenous Language Revitalization (3) Study of the importance and processes of language revitalization for indigenous peoples in Hawai‘i, the Pacific, Asia, and North America. Pre: any 100 level POLS course. (Alt. years) DS

POLS 315 Global Politics/International Relations (3) Introduction to global politics with emphasis on concepts and theories developed from an international relations perspective. Pre: sophomore standing or higher, or consent.

POLS 316 International Relations (3) Decision-making behavior of international actors; strategies of peacemaking. Pre: sophomore standing or higher, or consent.

POLS 317 International Law (3) Nature and function of international law and international politics. Pre: sophomore standing or higher, or consent.

POLS 318 Current Issues in International Law, Organization, and Culture (3) Principles, norms, cases, and their interaction with culture and organization in international politics. Pre: any 100 level POLS course or consent. DS

POLS 319 International Organization (3) International relations of governmental and nongovernmental organizations. Pre: sophomore standing or higher, or consent. DS

Key to symbols & abbreviations: see the first page of this section.
POLS 321 International Migration (3) Political-cultural economy of international migration: post-colonial populations, refugees, and immigrants. Pre: sophomore standing or higher, or consent.

POLS 322 American Foreign Policy (3) Purposes, methods, strengths, obstacles, prospects; factors affecting American foreign policy; impact abroad and at home. Pre: sophomore standing or higher, or consent. DS

POLS 323 Model United Nations (1) Simulation of United Nations organizations, especially General Assembly. Repeatable 4 times. Pre: 315 (or concurrent) or 319 (or concurrent), or instructor consent. DS

POLS 324 Global Environmental Politics (3) Evolution of political, legal, and decision-making on a variety of environmental concerns; from endangered species to pollution to climate change. Interaction of population, development, and environment in global governance. DS

POLS 325 Religion and Law in the U.S. (3) Surveys church-state jurisprudence since the 1940s, with special attention to difficulty of defining religion, and applies the religion clauses to current issues. A-F only. Pre: sophomore or higher standing, or consent. (Once can only cross-list as AMST 325)

POLS 333 Advanced Topics in Global Politics (3) Studies of political development in the context of increasingly integrated and globalized political economies. Repeatable one time. Pre: any 100 level POLS course or consent.

POLS 335 History of Political Thought (3) Theories, approaches, concepts, and issues developed or raised in history of political philosophy and thought. Pre: any 100- or 200-level POLS course, or consent. DS

POLS 337 American Political Theory (3) Origins and development of American political thought. Pre: any 100 level POLS course or consent. DS

POLS 338 (Alpha) Topics in Political Theory (3) Significant works, historical continuities, themes, and issues in political theory. (B) Classical political philosophy; (F) Revolution and Utopia; (G) Contemporary political theory; (I) Marxist philosophy. Pre: any 100- or 200-level POLS course, or consent. DS

POLS 339 Feminist Theory (3) Contemporary debates in feminist theory concerning gender, race, and class; subjectivity and representation; gender and colonialism; bodies, sexualities and “nature.” Pre: any 300 level POLS or WS course, or consent. (Cross-listed as WS 339)

POLS 340 Korean Politics and Society Through Film (3) Examines modern Korean politics and society through films. Through movies and documentaries, students will learn major sociopolitical issues including military dictatorship, democratization, and globalization that Korea underwent for the last several decades. Repeatable one time. Sophomore standing or higher. A-F only.

POLS 341 The Politics of Media (3) Study of the political manipulation of aural and visual images. Exercises to improve literacy. Pre: any 100 level POLS course, or consent. DS

POLS 342 Political Design and Futuristics (3) Alternative future social and political possibilities; design of means of realizing desirable futures. Pre: any 100-level POLS course, or consent. DS

POLS 343 The Politics of Film (3) Political, philosophical, and artistic dimensions of film; cross-cultural film genres; representational practices in films. Pre: any 100 level POLS course, or consent.

POLS 344 Na Politika ma ka Niihou Hawai‘i - Polities and Environment Media (3) Study of Hawaiian news media with emphasis on political content. Taught in Hawaiian. Pre: HAW 302 (or concurrent) and one of 110, 120, 130, 170, or 171; or consent. (Cross-listed as HAW 445) DH

POLS 366 Advanced Topics in Theory, Media, and Method (3) Studies in political theory, media, and methods that analyze their interrelations in a globalized world. Pre: sophomore standing or higher, or consent.

POLS 367 Disability Law and Politics (3) Introduction to the history and politics of U.S. disability law and activism. An analysis of disability politics as the result of the interaction between disability movement activism and the development of policy and law. A-F only. Pre: sophomore standing or higher, or consent. (Fall only)

POLS 372 Asian Women (3) History, culture, and contemporary reality of Asian women in Asia and the U.S. Includes critical Asian feminism methodology and theory. Pre: one of 339, AMST 310, AMST 316, AMST 373, AMST 455, WS 360, WS 361, WS 437; or consent. (Cross-listed as AMST 438 and WS 462) DS

POLS 373 American Politics (Elections) (3) Examination of voter and voting processes (participation, apathy, socialization, symbolic process, media, etc.); ideologies and belief systems. Pre: sophomore standing or higher, or consent. DS

POLS 374 Law, Politics and Society (3) Relationships between law, politics, and society will be explored. Emphasis is placed on several dimensions of legality: legal “indeterminacy” and some of the many things that law does for us and to us; law’s response to violence; the connections between law and social change; access to the law and its sociological dimensions; how/why law fails and what happens when it does. A-F only. Pre: sophomore standing or higher, or consent. (Cross-listed as SOC 374) DS

POLS 375 Constitutional Law I: Institutional Power (3) Provides students with methods for interpreting U.S. Supreme Court decisions and analyzes the U.S. Supreme Court’s jurisprudence on institutional authorities (judiciary, executive, and legislative branches) and their relationships to power. Pre: sophomore standing or higher, or consent. DS

POLS 376 Constitutional Law II: Rights and Liberties (3) Analyzes the U.S. Supreme Court’s jurisprudence on civil rights and liberties. Pre: 375 or consent. DS

POLS 377 Topics in Law and Politics (3) Current issues; recent research findings; practical research undertaken by student. Pre: sophomore standing or higher, or consent. DS

POLS 378 Topics in American Politics (3) Specific institutions and processes of the American governmental system. Pre: sophomore standing or higher, or consent.

POLS 379 Power in America (3) Analysis of sources of power, economic, and social power in the U.S. and the institutions through which it is exercised. Pre: sophomore standing or higher, or consent.

POLS 380 Environmental Law and Politics (3) Focuses on theories, law, policy, and futures of U.S. environmental politics. Sophomore standing or higher. Pre: any 100 level POLS course, or consent. (Alt. years) DS

POLS 381 Administration and Society (3) Historical emergence of modern bureaucracy: mutual impact of administrative forms on social life; relation of bureaucracy to capitalism and patriarchy; constitution of the administered individual. Pre: sophomore standing or higher, or consent.

POLS 382 Political Leadership (3) Exploration of concepts and theories of political leadership, partly through biography, as preparation for public service or advanced scholarly inquiry. Pre: sophomore standing or higher, or consent.

POLS 383 Politics and Public Policy II (3) Overview of the policy-making process in various political arenas (families, cities, nations, etc.); emphasis on conceptual and empirical analysis. Pre: any 100 level POLS course, or consent. DS

POLS 384 Women and Politics (3) Women’s role in political institutions and processes in the U.S. and other countries. Male and female approaches to power; feminist political goals and actions. Pre: any 100 level POLS course (or concurrent), WS 151 (or concurrent), or WS 362 (or concurrent); or consent. (Cross-listed as WS 384) DS

POLS 385 American Politics (3) Institutions (parties, interest groups, legislatures, executives, local government); policies (national defense, poverty, energy, etc.); politics (symbolism, inequality, race, and gender) DS

POLS 386 Public Policy-Making (3) Students develop understanding of theory, practice, and ethical issues of public policy-making. Combines lectures/discussion and field trips. Students develop policy agendas and strategic plans that identify issues, interests, and methods of influence. Repeatable one time. A-F only. Pre: HON 101 or HON 291, or departmental approval. (Cross-listed as HON 301)

POLS 390 Political Inquiry and Analysis (3) Introductory survey and analysis of methods used in empirical research, policy analysis, and social criticism. DS

POLS 393 Advanced Topics in Law, Policy, and Society (3) Studies integrating concerns of public law, public policy, public administration, and social movements. Pre: any 100- or 200-level POLS course, or consent.

POLS 394 Democracy in Organizations (3) Theory and practice of democratic organizations: women’s and feminist organizations; co-ops, unions, and collective and indigenous organizations; workplace democracy and social change. Pre: any 100- or 200-level POLS course or 390 (or concurrent) or WS 151, or consent. DS

POLS 396 Nonviolent Political Alternatives (3) Exploration of scientific and theoretical sources for nonviolent alternatives in politics. Pre: any 100- or 200-level POLS course, or consent. (Cross-listed as PACE 373) DS

POLS 399 Directed Reading and Research (V) Pre: consent.

POLS 401 Teaching Political Science (6) Practicum for majors who serve as undergraduate teaching assistants. Repeatable one time. Pre: 390 (or concurrent), senior standing; and consent.

POLS 402 Legislative Internship (V) Field placement at the Hawai‘i Legislature integrated with academic study of political institutions and practices. A-F only. Pre: consent. Recommended: 390. (Spring only) DS

POLS 403 Community Internship (V) Field placement integrated with academic study of political institutions and community organizations. Repeatable one time. Pre: consent. Recommended: 390. DS

POLS 404 Senior Thesis (6) Independent research and thesis writing with supervision of senior advisor. Pre: 390 (or concurrent) and consent. DS

POLS 405 Executive Internship (V) Open to students awarded a Mānoa Undergraduate Political Fellowship for placement in the Governor’s or Lt. Governor’s Office, Prosecuting Attorney’s Office, or Public Defender’s Office. Field placement, integrated with academic study. A-F only. Recommended: 385, 390.

POLS 406 Senior Seminar in Political Science (3) Discussion of issues and questions of concern to graduating seniors in political science, including substantial research projects. Pre: 390 (or concurrent) or senior standing or consent. DS

POLS 408 Mānoa Undergraduate Congressional Fellowship Internship Seminar (6) Hawai‘i Undergraduate Political Internship Congressional Fellowship. Award includes stipend and internship experience in a Hawai‘i congressional office. Students review policy processes, House and Senate procedures and produce a final paper. Restricted to fellows who are seniors on campus or senior standing only. A-F only. Co-requisite: 386.

POLS 436 Gender, Justice and Law (3) Exploration of landmark U.S. Supreme Court cases related to sex and gender. Topics may include sex discrimination, sexual orientation discrimination, privacy, and reproductive freedom. A-F only. Pre: one of WS 151, WS 175, WS 176, WS 202, WS 360, WS 381, or consent. (Cross-listed as AMST 436 and WS 436) DS

Key to symbols & abbreviations: see the first page of this section.
POLS 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.

POLS 600 Scope and Methods of Political Science (3) 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 applied to political science.

POLS 601 Political Analysis and Theory Building (3) Survey of theory-building, approaches and validation techniques.

POLS 602 Research Techniques and Analytic Methods (3) Quantitative models and statistical inference techniques.

POLS 605 Topics in Methodology (3) Specific methodological techniques and practices introduced in 601 and 602. Pre: graduate standing or consent.

POLS 610 Political Theory and Analysis (3) Major contemporary approaches and styles in political theory, philosophy, and analysis.

POLS 611 Tradition of Political Philosophy (3) Discussion of texts and themes in the Western political tradition from Plato to Nietzsche. Repeatable one time.

POLS 612 Hawaiian Political Thought: Theory and Method/Na Mana’o Politika Hawai’i (3) Study of Hawaiian political thought in writing from ca. 1825 to the present, with emphasis on theory and research methods. Pre: 303, HAW 402 and HAW 428; or consent. (Cross-listed as HAW 612)

POLS 615 (Alpha) Topics in Political Thought (3) Specific traditions and individuals, or particular issues and problems. (C) feminist theory. Pre: graduate standing or consent. (C) Cross-listed as WS 615


POLS 621 Politics of Indigenous Representation (3) Politics of indigenous representations in media, literature, and academic scholarship.

POLS 630 International Relations (3) Analysis of theories: actors, decisions, systems, conflict, integration, alternative approaches to validation. Pre: graduate standing or consent.

POLS 633 International Conflict Resolution (3) Analysis of international conflict and conflict resolution. Theory and practice of negotiation, mediation, conciliation, facilitation, and other “third-party” methods of peaceful settlement. Pre: graduate standing or consent.

POLS 635 (Alpha) Topics in International Relations (3) (B) International relations and war; (E) international relations and war; (F) international relations and war; (G) international relations and war; (H) international relations and war; (I) international relations and war; (J) international relations and war; (K) international relations and war; (L) international relations and war; (M) international relations and war; (N) international relations and war; (O) international relations and war; (P) international relations and war; (Q) international relations and war; (R) international relations and war; (S) international relations and war; (T) international relations and war; (U) international relations and war; (V) international relations and war; (W) international relations and war; (X) international relations and war; (Y) international relations and war; (Z) international relations and war. Pre: consent.

POLS 640 Comparative Politics (3) Emphasis on Asia, theories of development, and comparative methods. At least one section a semester.

POLS 642 Indigenous Peoples and Western Imperialism (3) Historical examination of U.S. and European imperialisms, including national narratives, politics, and impacts upon indigenous peoples in the Americas, Pacific, and Asia. Repeatable one time.

POLS 645 (Alpha) Politics and Development: Regional (3) Politics in particular regions; particular development processes. (C) China. (C) Cross-listed as ASAN 608 and PLAN 608

POLS 646 (Alpha) Politics and Development: Topical (3) (F) political ecology and development. POLS 647 American Political Institutions in Comparative Perspective (3) Consideration of American political institutions and development relative to American philosophical foundations and non-American political forms. Federalism as an expansive devise will be emphasized, as will American influence and penetration abroad. A-F only. Pre: graduate standing or consent. (Once a year)

POLS 650 Public Administrative Theory (3) Focus varies among theoretical, comparative and developmental approaches to study of administration. One section each semester.

POLS 651 Political Leadership (3) Exploration of political leadership as a focus for research, teaching, and applied political science.

POLS 660 Public Law and Judicial Systems (3) Law, courts, and rights as a political resource; analyses of public law (including court decisions), other forms of dispute management, and judicial behavior and policy-making. Pre: 110.

POLS 665 (Alpha) Topics in Public Law and Judicial System (3) Recent issues and practices in public law; particular judicial systems. Pre: graduate standing or consent.

POLS 670 Introduction to Public Policy (3) Perspectives on policy analysis; basic approaches to the study of public policy, political economy, and policy evaluation. (Cross-listed as PLAN 607)

POLS 672 Politics of the Future (3) Introduction to political futures studies; images of future; theories of social change; methods of social forecasting and designing preferred futures. Pre: graduate standing.

POLS 673 The Future of Political Systems (3) Normative and descriptive forecasts of political institutions, systems, subsystems, and behaviors. Design of preferred systems.

POLS 675 Topical in Public Policy (3) Particular processes, particular political institutions, particular policy area. Pre: graduate standing or consent.

POLS 680 Asian- and/or Pacific Politics (3) Political development, international relations, decision-making processes, and systems of political thought in all or part of Asia and/or the Pacific. Repeatable three times.

POLS 684 Contemporary Native Hawaiian Politics (3) Study of contemporary Hawaiian political initiatives: social movements, media, indigenous studies programs, and events. A-F only.

POLS 685 (Alpha) Topics in Asia and/or Pacific Politics (3) (C) Korean politics. Pre: graduate standing or consent.

POLS 686 Politics of Hawai’i (3) Examinations from several perspectives of the political, economic, and cultural forces that historically formed Hawai’i and contemporary political themes, issues, and processes. Pre: consent.

POLS 695 Colloquium (3) Specialized subjects in political science.

POLS 696 Graduate Intern Seminar (3) Seminar for those seeking internship experience. Repeatable one time. A-F only. Pre: 672 and 673 or consent for the alternative futures option; 620 or consent for the indigenous politics option; consent of advisor for all other options.

POLS 699 Directed Reading and Research (V) Repeatable unlimited times. Pre: consent.

POLS 700 Thesis Research (V) Repeatable unlimited times.

POLS 702 Seminar: Research Methods (3) Conceptual strategies, data collection approaches, and data analysis techniques appropriate to political inquiries. Repeatable.

POLS 703 Writing Politics (3) Seminar on the politics of writing: translation, argument, genre, and style with significant content on indigenous issues of oral traditions, alternative modes of writing and argument, and language continuity.

POLS 710 Seminar: Political Thought (3) Pre-announced topics. Repeatable. At least one section a year.

POLS 720 Seminar: Indigenous Theory (3) Pre-announced topics may include gender and sexuality studies, postcolonial theory, colonial discourse analysis, globalization, history, and geography; emphasis on indigenous epistemologies and the work of native scholars. Repeatable one time.

POLS 730 Seminar: International Relations (3) Pre-announced topics of both international organization and politics. Repeatable. At least one section a semester.

POLS 740 Seminar: Comparative Government and Politics (3) Pre-announced topics. Repeatable. At least one section a year.

POLS 770 Seminar: Public Policy (3) Pre-announced topics. Repeatable three times. Pre: consent of instructor. At least one section a year.


POLS 777 Decolonial Futures (3) Topics engage probabilities and preferable futures of indigenous struggles and resistances. Emphasis placed on the ethics and responsibilities used to move towards decoloniality.

POLS 780 Seminar: Politics of Regions (3) Analysis of political development, international relations, decision-making processes, and systems of political thought in regions and subregions of the world. Repeatable.

POLS 800 Dissertation Research (V) Repeatable unlimited times.

Portuguese (PORT)

College of Languages, Linguistics and Literature
Students choosing Portuguese for the language requirement should realize it may not be offered if demand is limited. A grade of C- or better in the prerequisite course is required for continuation.

PORT 101 Elementary Portuguese (3) Conversation, grammar and reading, HSL
PORT 102 Elementary Portuguese (3) Conversation, grammar, and reading. Continuation of 101. Pre: 101. HSL
PORT 201 Intermediate Portuguese (3) Reading, conversation, writing, laboratory drill. Pre: 102. HSL
PORT 202 Intermediate Portuguese (3) Continuation of 201. Pre: 201. HSL
PORT 303 Conversation (3) Intensive practice in spoken Portuguese, focusing on the preparation and completion of oral tasks and presentations. 40% or more of the grade is based on 3-4 oral communication presentations. Pre: 202.
PORT 460 Fourth-Level Portuguese Abroad (V) Intensive formal instruction at the fourth-year level in Portuguese language, linguistics, culture, civilization, film, or literature in a Portuguese-speaking country. Repeatable one time. Pre: 360.

Psychiatry (PSTY)

School of Medicine
PSTY 499 Directed Reading/Research (V) Individualized directed readings and/or research in mental health and psychiatry under the supervision of an instructor. Open to non-majors. Repeatable up to four times. A-F only. Pre: consent.

PSTY 531 7-Week Psychiatry Clerkship (10) 7-week basic psychiatry clerkship. Pre: third-year standing.

PSTY 532 Psychiatry Longitudinal Clerkship (5) Year-long clerkship in ambulatory, inpatient, and emergency room settings. Open to non-majors. Repeatable. Pre: third-year standing and concurrent registration in 532 courses.
psychological research. Both experimental and non-experimental methods will be reviewed. Pre: 100. DS

PSY 419 Psychometrics: Advanced Topics (3) In-depth coverage of some area of theory, research, or methodology. Repeatable to six credit hours. Pre: 100. DS

PSY 610 Introduction to Regression (3) Introduction to quantitative methods in behavioral sciences and the general linear model with a focus on regression. Topics include correlation, bivariate and multiple regression, mediation, and moderation. Requires basic statistics. (Meets PhD common inquiry methods requirement or elective)

PSY 611 Design and Analysis of Psychological Experiments (3) Analysis of variance and other models of assessing results of experiments. Relation of analysis to design.

PSY 612 Applied Regression and Analysis of Variance (3) Introduction to linear statistical models. Topics include multiple regression models with continuous and categorical predictors. ANOVA with multiple factors, ANOVA with repeated measures, and ANCOVA. Pre: 610 or EDEP 601 or PSY 610, (with a grade of B+), or consent.

PSY 613 Structural Equation Modeling (3) Theories and applications to test models with manifest and latent variables. Topics include path analysis, factor analysis, and latent analysis. Pre: 610, 612, EDEP 604, or consent. (Cross-listed as EDEP 605)

PSY 614 Multivariate Methods (3) Multivariate forms of multiple linear regression, analysis of variance, and analysis of co-variance. Multiple discriminant analysis, canonical correlation, and principal components analysis are discussed. (Cross-listed as EDEP 606)

PSY 616 Measurement in Education and Social Sciences (3) Topic: Applications in education and social sciences. Topics include the true score model; reliability; generalizability theory; validity; item response theory; and applications in research. Class requires knowledge in ANOVA and regression. (Cross-listed as EDEP 616)

PSY 617 Advanced Psychometrics (3) Theories and applications of modern psychometrics. Topics include unidimensional and multidimensional models of item response theory, detecting biased items, measurement invariance, and item response analysis. Pre: 100 and consent.

PSY 618 Categorical Data Analysis (3) Theories and methods for data analysis with categorical and discrete variables. Topics include contingency tables; logistic regression; log-linear models; and introduction to generalized linear models. (Cross-listed as EDEP 618)

PSY 619 Multilevel Modeling for Cross-Sectional and Longitudinal Data (3) Theories and applications of multilevel models to analyze cross-sectional and longitudinal data in education and social sciences. Pre: 610, 612, or EDEP 604 (with a minimum grade of B or higher), or consent. (Cross-listed as EDEP 612)

PSY 719 Research in Psychometrics (3) Supervised reading, discussion, research projects in areas of special interest. Repeatable unlimited times. Pre: consent.

EXPERIMENTAL PSYCHOLOGY (X2X) PSY 220 Introduction to Behavioral Psychology (3) Outline of basic learning principles. A general, unified approach to study of human personality and behavior. Based upon a learning conception; various areas of psychology, and the other social sciences are treated. Pre: 100. DS

PSY 225 Statistical Techniques (3) Frequency distributions; graphic methods; central tendency; variability; correlation; reliability; tests of significance. Pre: 100. DS

Key to symbols & abbreviations: see the first page of this section.

PSY 322 Learning and Motivation (3) Theoretical interpretations; survey of major theorists and contemporary controversial issues; major influences in classical and instrumental conditioning. Pre: 100. Recommended: EDEP 220. DS

PSY 324 Psychology of Emotion (3) Survey of traditional views and leading theories, and research in related topics. Pre: 100. Recommended: 220 or 322. DS

PSY 325 Cognitive Psychology (3) Mental processes of human organisms. Survey of major theories and findings in cognitive psychology. Pre: 100 or consent. DS

PSY 429 Experimental Psychology: Advanced Topics (3) Coverage in-depth of some area of theory and research. Repeatable to six credit hours. Pre: 100. DS

PSY 622 Animal Learning (3) Principal findings and major theories in animal learning. Detailed consideration of the contemporary literature.

PSY 625 Knowledge and Wisdom (3) Topics in the psychology of mind from Western and/or Asian perspectives. Repeatable in different topics. Pre: consent.

PSY 626 Cognitive Psychology (3) In-depth survey of the computational and representational structures and processes of cognition. Special attention devoted to consideration of the relationship between brain, mind, and computation. Pre: 325 or consent.

PSY 627 Thinking (3) Provides an introduction to higher cognition (thinking and reasoning) and its foundations, particularly as they relate to the larger field of cognitive science. A-F only. (Alt. years)

PSY 721 Seminar in Experimental Psychology (3) Repeatable unlimited times.

PSY 722 Seminar in Learning (3) PSY 729 Research in Experimental Psychology (3) Supervised reading, discussion, research projects in areas of special interest. Repeatable unlimited times.

PSYCHOBIOLOGY (X1X) PSY 230 Introduction to Psychobiology (3) Survey of study of behavior from a natural sciences viewpoint. Evolution, ethological analysis of behavior genetics, neural mechanisms, drugs and behavior, biological development. Pre: 100. DB

PSY 331 Behavioral Neuroscience (3) Coverage of the neural, developmental, and mechanistic bases of learning, memory and cognition, motivated and regulatory behavior and mental disorders. A-F only. Pre: 230 or consent. DB

PSY 333 Psychopharmacology (3) Coverage of the basic principles of pharmacology as they apply to the brain and specific brain disorders such as anxiety, depression, psychosis, memory, and drug abuse. A-F only. Pre: 230 or consent. (Once a year) DB

PSY 336 Sensation and Perception (3) In-depth coverage of the basic principles involved in sensing and perceiving our environment. PSY majors only. A-F only. Pre: 100. (Fall only)

PSY 439 Psychobiology: Advanced Topics (3) Coverage in-depth of some area of theory and research in psychobiological/psychological/psychological/behavioral processes. Repeatable to six credit hours. Pre: 100. DB

PSY 631 Comparative Psychology (3) Compara- tive study of natural behavior, learned behavior, sensory processes, social behavior in animals. Pre: 631.

PSY 632 Selected Topics in Comparative Psychology (3) Intensive review of comparative, communi- cative, sensory, or learning mechanisms in animals. Pre: 631.

PSY 633 Psychopharmacology (3) Basic principles of pharmacology as they apply to the brain and specific psychological disorders such as anxiety, depression, post-traumatic stress disorders, schizophrenia, psychosis, memory, and drug use. A-F only. Pre: consent. (Once a year)

PSY 634 Physiological Psychology (3) Relation of central and peripheral nervous systems to behavior. Pre: 731 Seminar in Physiological Psychology (3) Repeatable unlimited times.
PUBA 499 Directed Reading and Research in Public Administration (V) Independent research and reading on topics in public administration, public service, and community development. Repeatable one time. Pre: consent.

PUBA 603 Organizations: Theory and Change (3) Explores characteristics and structural, human resources, political, and cultural frames of organizational theory. Discusses organizational change strategies and theories. Discusses how to use these frames and theories in everyday management of public service organizations. PUBA and PUBA Cert. majors only. Graduate students only. A-F only. (Fall only)

PUBA 604 Leadership and Ethics (3) Applies leadership and ethical theories to public and nonprofit sectors, focusing on ethical leadership: emphasizes critical thinking to address value conflicts; and teaches moral reasoning as a practical professional skill. PUBA and PUBA Cert. majors only. Graduate students only. A-F only. (Fall only)

PUBA 605 Effective Communication in Public Administration (3) Knowledge and skills to effectively communicate in the public sector. Focus on communication foundations and skills, written and oral skills, and contexts of public sector communication, and handling challenges such as diverse and multicultural settings. PUBA and PUBA Cert. majors only. Graduate students only. A-F only. (Spring only)

PUBA 606 Public Administration Personnel Management (3) Understand the pivotal role that effective human resource management (also known as personnel management) plays in improving organizational effectiveness. Topics include managing diversity, employment law and discrimination, performance appraisal, and labor-management relations. PUBA and PUBA Cert. majors only. Graduate students only. A-F only. (Spring only)

PUBA 607 Public Administration Research Methods (3) Introduction to research methods for graduate students and administrators to understand the principles and methods used to conduct and analyze valid research. Examples are oriented to the field; theory and hands-on practice utilized. PUBA and PUBA Cert. majors only. Graduate students only. A-F only. (Spring only)

PUBA 608 Public Budgeting (3) Institutions and issues related to public-sector budgeting at federal, state, and local levels. Processes of developing public budgets and constraints on public policy reflected in budgets. PUBA majors only. A-F only. (Fall only)

PUBA 609 Policy Analysis and Implementation (3) Explore contemporary policy issues relating to public administration. Develop analytic techniques and models of public policy-making processes, administrative rules and policy implementation strategies. Learn how social forces, political, and economic forces influence policy orientation. PUBA majors only. A-F only. (Spring only)

PUBA 620 Reforming Public Organizations (3) Looks at the challenges and opportunities for changing public organizations so that they may be more successful in meeting their public responsibilities and better places to people for work. Focus is on the creation of positive images of organization and effective change strategies. A-F only. (Cross-listed as CEE 620)

PUBA 621 The Political Environment of Public Organizations (3) Seminar on the role of public managers in shaping public opinion and public policy. Using evidence from theory and practice presents students with tools for understanding management roles within a political context. Pre: graduate standing or consent.

PUBA 622 Strategies of Change: Leaders and Leadership (3) Explores the key elements of leadership in public settings by examining what leaders actually do, looking at portraits of leadership, and talking together with guests about the challenges of leadership, effective followship, and positive change. A-F only.

PUBA 623 Organizational Communication (3) Communication processes and models of public policy-making and public administration practice. Develop analytic techniques and models of public policy-making and public administration. Topics include various aspects of communication process and tools for organizational change. Pre: graduate standing or consent.

PUBA 624 Intercultural Challenges in the Public Sector (3) Seminar on the dimensions of cultural variability and how they affect government operations from macro to micro levels, from international policy transfer to major intercultural task interaction processes such as negotiation, planning, and relationship management. Pre: graduate standing or consent. A-F only.


PUBA 626 Collaborative Public Management (3) Theories, skills and tools needed to effectively manage networks in government and nonprofit organizations. Emphasis on management for performance, and evaluate success in these dynamic new partnerships. Graduate students only or consent. A-F only.

PUBA 630 Nonprofit Management (3) Fundamental aspects of managing a nonprofit organization: overview of the nonprofit sector; mission and scope of nonprofit organizations; organizational structures and functions; resource and volunteer development; major management issues. A-F only Pre: graduate standing or consent. A-F only.

PUBA 631 Nonprofit Management Practices and Tools (3) Skills and tools needed by nonprofit managers. Topics include but are not limited to grantwriting, strategic planning, business practices, program management, and program evaluation. A-F only. Pre: 630 or consent. (Spring only)

PUBA 640 International Perspectives on Public Administration (3) Key dimensions of public administration systems on a global scale; historic and contemporary forces shaping transnational systems; the dimensions that distinguish them, the opportunities and constraints for comparison and the transfer of knowledge and experience. A-F only. Pre: graduate standing or consent. A-F only.

PUBA 667 Special Topics (3) Topics of current interest in the field of public service and public administration, taught by regular and visiting faculty. Repeatable for different topics up to six credit hours. A-F only. Pre: graduate standing or consent. (Spring only)

PUBA 690 MPA Practicum (3) Placement in public, private, and nonprofit organizations to observe and analyze organizational functions and processes while undertaking projects of use to the host agency. Repeatable one time. A-F only. Pre: with a minimum grade of B- or better. A-F only.

PUBA 691 Certificate Practicum (3) Students in the nonprofit management track of the certificate will learn by doing and observing in a nonprofit organization selected in consultation with the student's advisor. PUBA graduate certificate students only. A-F only.

PUBA 695 Capstone Planning Seminar (V) Develops topics, methods, objectives, and resources to guide work of capstone seminar. A-F only. Pre: 602, 603, 605, 607.

PUBA 696 Capstone Seminar (3) Culminates public administration coursework by incorporating theoretical, analytical, and practicum observations into examination of public issues of importance to Hawai‘i and the region. A-F only. Pre: 695.

PUBA 699 Directed Reading (V) Repeatable unlimited times.

PUBA 700 Thesis Research (V) Repeatable unlimited times.
Junior standing or higher. Pre: completion of at least one class in the natural or biological sciences (with a minimum grade of B-) DB

PH 350 Introduction to Biostatistics (3) Basic biostatistics methods in public health and biomed- ical research. May include data collection, data analyses, and interpretation of statistical results. Sophomore standing or higher. A-F only.

PH 410 Advanced Epidemiology (3) Students will gain a deeper understanding of the core concepts used in epidemiologic research and practice. Upon completion, students will have the knowledge and skills necessary to conduct an epidemiologic study. Junior standing or higher. A-F only. Pre: 201 and 310, and one of the following: ECON 321 or EDEP 429 or NREM 310 or SOCS 425 or PSY 225.


PH 420 Social Behavioral Health I: Health Promotion for Individuals and Groups (3) Focus on the application of social and behavioral theory in health education and health promotion. New health promotion programs are constructed for various populations with an emphasis on cultural diversity and social determinants of health. Sophomore standing or higher. A-F only. Pre: 310. (Fall only)

PH 422 Social Behavioral Health II: Health Promotion in Communities (3) Introduction to health education and health promotion programming in public health, and to social/behavioral theories used to develop health interventions that affect communities, institutions, and policies. Introduction to common program planning models. A-F only. Pre: 420.

PH 430 Health Policy and Management (3) Examines the role that health policy and management play in health promotion to optimize the health of the public. Focus will be on epidemiologic and biostatistics methods in public health and biomedi- cal research. Topics include data collection, data analyses, and interpretation of statistical results. Sophomore standing or higher. A-F only.

PH 445 Introduction to Environmental Microbiol- ogy (3) Lecture/discussion. Will define the nature and biological activities of microorganisms in different environments and evaluate the effects of these microbes on human activities and health. Junior standing or higher. Pre: MICR 130 or MICR 351 or BIOL 171.

PH 480 Application of Public Health Principles in Research and Practice (3) Introduction to a diverse range of public health projects and associated methods that are developed and applied in an applied learning project proposal. PH majors only. Junior standing or higher. A-F only. Pre: 201 and 310.

PH 485 Public Health Applied Learning Experi- ence (3) Allows students to execute an independent, mentor-supported, applied learning project as imple- mentation of skills learned in previous public health coursework. Applied project is a required component of the public health undergraduate degree program. Pre: 480.

PH 489 Public Health Undergraduate Capstone Seminar (3) Integration of public health knowledge, skills, and practice acquired during the public health undergraduate degree. Students will also reflect on, finalize, and present their applied learning experience projects. Senior standing and higher. A-F only. Pre: 480 and 485.

PH 492 (Alpha) Current Issues and Topics in Public Health (V) Current and emerging issues and varying topics related to public health. (D) biostatistics; (E) epidemiology; (H) health policy and management; (S) social and behavioral health sciences; (T) public health. Repeatable up to six credits with different alphas. Open to nonmajors. Sophomore standing and above. Pre: 201.

PH 499 Directed Reading/Research (V) Repeat- able up to six credits. PH majors only. Junior standing or higher.

PH 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.

PH 600 Public Health Foundations (2) Focus will provide a broad introduction to the field of public health and overview of interfacing issues in the field. A-F only. (Fall only)

PH 602 Introduction to Health Services (3) Overview of the historical, conceptual, ethical and political context for health care delivery. It explores current trends, practices and issues in the delivery of health care services. Repeatable one time.

PH 610 Public Health Biology (3) Writing-inten- sive asynchronous computer-based course examines biological processes and challenges relevant to the public health profession. Topics include anatomy, anato- mical, pathophysiological, and molecular bases of public health; genetics, immunology, ethics; disease prevention, control, and management. (Once a year) (Cross-listed as CMB 610)

PH 623 Social Science and Public Health (3) Individual and community health; implications for public health practice, individual and social change processes.

PH 626 Health Economics (3) Integrated concepts in health economics and its application towards health policy issues in health care: factors affecting U.S. health care spending potential impact on equity/efficiency stemming from changes in health care delivery. A-F only. (Once a year)


PH 630 Cultural Competency in Health Care (3) Presents both analytical and practical approaches to cultural competency domains, concepts, models, frameworks, and implications that occur in cross-cultural healthcare situations. A-F only.

PH 635 Indigenous Health Seminar (3) Examines public health through an Indigenous lens, integrates competencies across all public health disciplines, and will apply them in context of working with and Indigenous communities to improve health and well- ness. PH majors or consent. Graduate students only. A-F only. (Fall only)

PH 641 Introduction to Health Policy (3) Lecture/discussion. Topics include the history, development, and implementation of public health policies; the role of stakeholders in health policy-making and advocacy; using health policy frameworks for conducting policy analysis. Group activities apply the concepts presented in class. A-F only. Pre: 602 or consent.

PH 646 Grant Writing in Public Health (1) Lecture/discussion on grant writing with public health focus. Includes basic components of grant proposals, assessing appropriate funding opportuni- ties, data sources/resources for justifying grants, and the funder’s perspective. Student will prepare a brief foundation grant proposal. A-F only. (Once a year)

PH 647 Analytic Approaches to MCH (3) Application of analytic methods to the identifica- tion of health problems in children and women of reproductive age. Evidence-based approach in MCH. Repeatable one time.


PH 649 Needs Assessment (3) Knowledge and skills in conducting needs assessment in public health practice.

PH 650 Ecological Epidemiology (2) Examination of population-based studies in the context of infectious diseases and host pathogen interactions. Repeatable one time. A-F only. Pre: MICR 461 or equivalent. (Cross-listed as CMB 650)

PH 651 Introduction to Human Population (3) Comparative analysis of quantitative and qualitative aspects of population; factors affecting size, distribution, and composition; impact of population size and composition on society. (Cross-listed as GPHS 651 and SOC 651)

PH 652 Interdisciplinary Seminar (1) Topics such as contemporary issues in global health and population studies, international health programs, demographic methods, global economy and health, human rights and humanitarian assistance, social justice, global environmental changes and health. Pre: consent. (Cross-listed as GPHS 652)

PH 653 Global Health and Human Security (3) Provides the knowledge, skills, and attitudes required to successfully manage health security crises and protect human vulnerability in the global context with a special focus on problems with high likelihood and risk in the Pacific.

PH 655 Biostatistics I (3) Introduction to statisti- cal methods for public health sciences. Probability, experimental design, t tests and analysis of variance, 2X2 contingency tables, linear regression, introduc- tion to life tables.

PH 656 Biostatistics II (3) Poisson distribution, Fisher’s exact test, contrasts in ANOVA, two way ANOVA, multiple linear regression and analysis of covariance, path analysis, logistic regression, method of maximum likelihood, likelihood ratio tests. Pre: 655, completion of one semester of calculus; or consent.

PH 658 Computer Applications in Public Health (3) Applications of computers to problems common to public health. Emphasis on data analysis and processing using existing computer programs.

PH 659 Methods of Demographic Analysis (3) Statistical evaluation and analysis of population data; data sources; population growth; composition; standardization of rates; mortality and the life table; reproductive and fertility distribution, migration, and urbanization; projections and stable population theory. (Cross-listed as GPHS 659 and SOC 659)

PH 660 Current Topics in Community Health (2) Critique of published articles in community health as they relate to public health. Skill building in community health development techniques. Emphasis on exchange of ideas and alternative approaches. Stresses group approaches to solve community health problems. A-F only.

PH 663 Principles of Epidemiology I (3) Introduction to epidemiologic principles and methods. Topics covered include: outbreak investigation, measures of morbidity and mortality, measurements of risk, biological variability, screening, measurement of error, sampling, measurement of compliance, study design, and association and causation.

PH 664 Principles of Epidemiology II (3) Lecture/ discussion: on design and interpretation of experi- mental and observational studies; causation and casual inference; biases in study design; random error, experimental design, t tests and analysis of variance, 2X2 contingency tables, linear regression, introduc- tion to life tables.

PH 666 Seminar in Infectious Disease Control (1) Strategies for controlling important infectious diseases in the Pacific, emphasis on epidemiology, ecology, and public health principles. Pre: 663 (or concurrent) and one semester in microbiology, or consent.

PH 667 Infectious Disease Micro II (3) Will cover different families of animal viruses with an emphasis to human diseases. The genome, structure, replication, as well as host immune responses, epidemiology, clinical features, and animal models will be pre- sented. Repeatable one time. A-F only. Pre: TRMD 604 and MICR 351, or consent. (Cross-listed as TRMD 605)

PH 669 Epidemiological Study Design Critique (2) Critique of study design using published public key to symbols & abbreviations: see the first page of this section.
health literature. Emphasis on exchange of ideas, alternative approaches; stresses epidemiology as science of public health. Repeatable. A-F only. Pre: 663 or consent.

PH 671 Community and Public Health Practice (2) Community organization and development applicable to the delivery of health services. Understanding community dynamics, mobilizing community groups for effective health care practice and delivery. Pre: 647 or 757, or consent. (Cross-listed as SW 674)

PH 672 Leading and Managing Health Programs (3) Assess how to organize community partnerships to create and communicate a shared vision for a changing future; discuss solutions to organizational and community challenges; maximize motivation to reach public health goals. A-F only. Pre: 600 or consent.

PH 673 Health Ethics, Law and Politics (3) Review theories and case studies concerning health care ethics, law and politics. Topics include health care quality, key health care policymakers, and the intersecting issues of policy and law with medicine, public health and ethics. A-F only. (Once a year)

PH 674 Advanced Native Hawaiian Health Determinants (3) Explores conditions of evidence-based knowledge about the social determinants of health in the formation of research, policy, and program development for improving population health and reducing health disparities for Native Hawaiians. A-F only.

PH 675 Community Engaged Research and Practice (2) Explores collaborative and engaged approaches with communities in public health research and practice. With a focus on Indigenous Peoples' health, we delve into Indigenous knowledge and empowerment in evaluation, needs assessment, intervention, and health promotion. PH majors or consent. Graduate students only. Pre: 655 and 673. (Fall only)

PH 676 Hawai’i Public Health Policies on Infectious Diseases (3) Examines quarantine/isolation of patients infected with Hanson’s disease. Focus on PH policies before 1823 and after; analysis of other infections in Hawai’i and the world to examine differences in policies and their effect on the public. Graduate students only. Repeatable one time. A-F only.

PH 677 Managing Global Health Service Delivery (3) Provides knowledge, skills, attitudes and resources that health managers require to manage and maintain the quality of partnerships, facilities, programs, community services, people, drug, and information technology resources settings. PH majors only. A-F only. (Cross-listed as GPHS 677)

PH 680 Health Emergencies in Large Populations (3) Health Emergencies in Large Populations is run by the Center for Excellence in Disaster Management and Humanitarian Assistance and the Red Cross. It provides knowledge, practical skills, and networking for global health practitioners. A-F only.


PH 683 Global Nutrition (2) Examination of global food and nutrition problems, programs, issues, policies, and strategies for improvement. Pre: statistics and consent. (Alt. years: fall) (Cross-listed as FSHN 683)

PH 684 Supplemental and Nutritional Approaches in Disease Prevention and Treatment (3) Examines a variety of issues associated with nutritional and supplemental feeding and how they reduce disease incidence, morbidity, and mortality in relation to public health prevention strategies. PH majors only. (Cross-listed as FSHN 684)

PH 685 Addressed Child and Adolescent Nutrition (3) Addresses nutrition, growth, and development in children and adolescents and nutrition-related issues, such as childhood obesity and chronic disease risk factors, with a focus on current research in the Pacific region. Pre: FSHN 370 or consent. (Fall only) (Cross-listed as FSHN 686)

PH 688 Indigenous Peoples’ Food Systems, Environment and Health (3) Explores Indigenous Peoples’ food systems as local food resources Indigenous Peoples’ use of specific cultural knowledge of traditional territories. Global forces transforming these food systems and their impact on population health and nutrition are explored. PH majors or consent. Graduate students only. (Cross-listed as SW 688)

PH 689 Nutritional Epidemiology (3) Dietary, biochemical, anthropometric and clinical methods used for evaluating nutrition and diet in the etiology and epidemiology of disease. Pre: 663 and FSHN 685, or consent. (Cross-listed as FSHN 689)

PH 690 Global Health Challenges (3) Addresses critical, contemporary, and transnational issues best addressed by cooperative international action. Health issues are examined in the context of intersecting effects of limited resources, socioeconomics, politics, and environmental change. A-F only. (Once a year) (Cross-listed as GPHS 690)

PH 691 Fundamentals of Environmental Epidemiology (2) Examines the complex relationship between environmental contaminants and human health. Environmental epidemiology includes case control study design, environmental exposure monitoring and risk assessment, disease and environmental exposure mapping, and spatial data analysis and modeling with GIS. PH majors or consent. (Fall only)

PH 692 Clinical Epidemiology (3) Combined lecture-discussion on health measurement and use of epidemiologic principles to questions applicable at both individual and population levels on diagnosis, screening, prognosis, and the safety and efficacy of therapeutic and preventive interventions. Pre: 664 or consent. (Fall only)

PH 695 Promoting Physical Activity (3) Overview of the theoretical and applied study of physical activity epidemiology. Course content includes benefits, factors that influence, levels, valid instruments to assess, and programs to promote physical activity. (Fall only) (Cross-listed as KRS 695)

PH 696 Continuing Education in Public Health (1) Seminar designed to provide practical, community-focused, continuing education for the practicing public health professional. The application of public health principles to address practical public health problems is stressed. Weekly discussions and reports will cover a variable of health topics. Repeatable unlimited times. A-F only.

PH 699 Directed Reading/Research (V) Repeatable unlimited times. Pre: consent.

PH 700 Thesis Research (V) Repeatable unlimited times. Pre: consent.

PH 701 Health Communication (3) Skills-oriented course introduces students to the use of health communication strategies in different settings, selected elements of communication theory, the development of health communication material, and a practical training in motivational counseling skills. Pre: 623 or consent.

PH 702 Health Promotion Research (3) Focus on research methods commonly used in health promotion. Topics will include randomized trials, quasi-experimental design, measurement, and correlational studies. Labwork will focus on the use of SPSS to analyze data for applied research problems. A-F only. Pre: 623 and 655, or consent.

PH 704 Community-Based Participatory Research (3) Explores ways academic and lay communities collaborate on research, key theoretical perspectives in the development of CBPR, and the challenges in implementing CBPR approaches. Format includes lectures, discussions, reading, writing assignments, and a fieldwork project. PH majors only. A-F only.

PH 725 Indigenous Applied Research Methods (3) (2 hr Lec, 1 hr Computer Lab) Health disparities research methodologies and current topics in Indigenous health research. Special focus on statistical techniques for small data sets using quantitative and qualitative methods. PH majors only. A-F only. Pre: 655 and 663.

PH 729 Scientific Explorations in Social Justice for Indigenous People (V) Provides students with an advanced application of health disparities research methodologies to address health and social injustices faced by Indigenous people. Builds on previous courses to advance and produce scientific scholarship. PH majors only or consent. Graduate students only. A-F only. Pre: 720 or consent.

PH 737 Policies/Programs in MCH Services (3) Development and organization of health services for mothers and children—review and analysis of policies and events, legislation and programs; current issues. Pre: 655 or consent.

PH 742 Qualitative Research for Public Health Sciences (3) Provides a basic understanding of qualitative research approaches, methodologies, and techniques and for public health research and practice (needs assessment, program development, and evaluation strategies). Graduate students only.

PH 745 Maternal and Child Health and Disabilities I (V) Designed to teach leadership development for health professionals in an interdisciplinary seminar format. Inquiry-based learning approaches are applied with a specific focus on children with neurodevelopmental and related disabilities to explore clinical, cultural, policy, and program implications for services and supports for individuals with disabilities and family members. Program evaluation and research analysis are also conducted with relevance to best practice with the MCH or CSHN population.

PH 746 Maternal and Child Health and Disabilities II (V) Designed to apply leadership development for health professionals in an interdisciplinary seminar format. Inquiry-based learning approaches are applied with a series of families and children with neurodevelopmental and related disabilities to explore clinical, cultural, policy, and program implications for services and supports for individuals with disabilities and family members. Program evaluation and research analysis are also conducted with relevance to best practice with the MCH or CSHN population.


PH 748 Chronic Disease Epidemiology (3) Will cover selected topics in chronic diseases with critical analysis of the current epidemiologic literature. Methodologic issues, contemporary findings and recommendations for future research will be discussed. A-F only. Pre: 663 or consent.

PH 749 Epidemiology of Diabetes and Obesity (2) Provides an overview of the epidemiology of neurologically and neurodegenerative diseases and their risk factors, and methodological considerations for the study of these diseases. A-F only. Pre: 663 or consent.

PH 750 Health Behavior Change (3) Provides an understanding of the relationship between health behaviors and outcomes including psychological, physiological, and qualitative components. The course will also focus on the major theories of behavior and behavior change. Emphasis will be placed on understanding concepts, principles, explanations, and how these are translated into practical interventions for adoption and maintaining behavior change. A-F only. Pre: 623 or consent.

PH 751 Social Epidemiology (3) Examine the epidemiologic study of the social distribution and social determinants of health, including the identification of social-environmental exposures and their relationship to physical and mental health outcomes. Repeatable one time. A-F only.

PH 753 Survival Analysis (3) Construction and interpretation of various types of life tables, treatment of censored data, proportional hazards, relative risk

Key to symbols & abbreviations: see the first page of this section.

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regression models, and parametric survival analysis. Pre: 655 or consent.

PH 754 Neuroepidemiology (3) Lecture/discussion providing an overview of the epidemiology of neurological and neurodegenerative diseases and their risk factors. Prerequisites: statistical considerations for the study of these diseases. Pre: 663 or consent. (Fall only)

PH 755 Seminar in Tropical Medicine and Public Health (1) Weekly discussion and reports on current advances in tropical medicine and public health. Repeatable unlimited times. (Cross-listed as TRMD 690)

PH 756 Special Topics in Tropical Medicine (V) Advanced instruction in frontiers of tropical medicine and public health. Repeatable unlimited times. (Cross-listed as TRMD 690)

PH 757 Evolution, Epidemiology, and Public Health (2) Will explore several aspects of human health through the perspective of how natural selection and evolution influence disease risk, with the aim of improving treatment and prevention. Graduate students only. A-F only. Pre: 663 (with a minimum grade of B). (Alt. years: fall)

PH 765 Program Evaluation (3) Presented are principles of and frameworks for program evaluation. Students develop program evaluation plans for a community program, and collect and analyze evaluation data. A-F only. Pre: 649. (Spring only)

PH 770 (Alpha) Doctoral Seminar in Translation-Research (2) Required for students in the DrPH program. (B) biostatistics; (C) evidence-based methods in global health; (D) epidemiology; (E) health policy and management; (I) Native Hawaiian and Indigenous Health; (S) social and behavioral health sciences; (U) public health. Repeatable unlimited times. PH majors only for (D) and (I).

PH 779 (Alpha) Exploration in Public Health (V) Supervised practical training beyond the required practicum in an area of particular interest. Provides additional opportunity to synthesize, integrate, and apply practical skills and knowledge in a public health work environment. Repeatable up to 9 credits. Pre: 791 and a minimum of 6 credit hours of PH core courses, or consent.

PH 794 (Alpha) Exploration in Public Health (V) Investigation of emerging fields of inquiry in public health. (B) biostatistics; (D) environmental health; (E) epidemiology; (H) health policy and management; (I) Native Hawaiian and Indigenous health; (S) social and behavioral health sciences; (U) public health. Repeatable unlimited times. PH majors only.

PH 800 Dissertation Research (V) Pre: consent.

Public Policy Center (PPC)

PPC 301 Governing, Politics, and Public Policy (3) Analysis of the major processes that translate citizen preferences into public policy. A-F only.

PPC 330 Survey of Public Policy and Analysis (3) Students will learn about the policy making process, the role of policy decisions and how public policy is assessed, analyzed, and responded to. Also discusses important policy issues that currently fill the political landscape. Junior standing or higher. A-F only.

PPC 340 Energy Technologies for Addressing Climate Change, Economic, Policy and Security Issues (3) Interdisciplinary course designed to describe the inter-relationships and dynamic interactions between energy systems, the environment (climate), policy, security, and economics. Repeatable one time. A-F only.

PPC 495 Topics in Public Policy (3) Seminar on current issues in U.S. or international government policy. Topics vary and may include energy, long-term care, sustainability, etc. Repeatable unlimited times. A-F only. Junior standing or higher.

PPC 499 Directed Readings or Research (V) Requires the sponsorship of a faculty member. Together they will agree on the study topic and the work to be accomplished. Depending on the scope of the project, credits range from 1-3. Needs instructor consent. Repeatable two times up to six credits. Senior standing or higher. A-F only.

PPC 601 Public Policy Internship (2) 160 hour internship in public policy. Open to certificate students who have completed the core courses. PPC certificate majors only. A-F only. Pre: POLS 670.

PPC 602 Public Policy Seminar (2) Final seminar for certificate in public policy. Open to certificate students who have completed the core courses and the internship. PPC certificate majors only. A-F only. Pre: 601 (or concurrent) and POLS 670.

PPC 695 Topics in Public Policy (3) Seminar on current issues in U.S. or international government policy. Topics vary and may include energy, long-term care, sustainability, etc. Repeatable unlimited times.

Key to symbols & abbreviations: see the first page of this section.

PCC 699 Directed Readings or Research (V) Requires the sponsorship of a faculty member. Together they will agree on the study topic and the work to be accomplished. Depending on the scope of the project, credits may range from 1-3. Repeatable up to 9 credits. Instructor consent only. A-F only. Graduate standing only.

Real Estate (RE)

Shaffer College of Business

RE 300 Principles of Real Estate (3) Principles affecting the allocation and utilization of real estate resources, including legal, physical, economic elements: valuation; market analysis; finance; investments, and public and private externalities affecting the allocation and utilization of real estate resources.

RE 310 Real Estate and Environmental Law (3) Property rights, land tenure, environmental and negotiation theory, title conveyancing and escrow, mortgage instruments, fair housing, state and federal environmental policy.

RE 320 Real Estate Finance and Investment (3) Financial and investment techniques used to evaluate real property and real estate security investments.

RE 330 Real Estate Appraisal/Analysis (3) Analysis of real property, including feasibility analysis, market analysis, income property capitalization, and general real estate valuation techniques.

RE 390 Current Topics in Real Estate Analysis (3) Consideration of various special concepts and problems in real estate. Repeatable unlimited times.

RE 399 Directed Reading and Research (V) Reading and research in a special area within the major field under direction of faculty member(s). Project must include statement of objectives, outline of activities planned, results expected, and how they are to be reported and evaluated. Must be approved in advance by the department chair and faculty advisor. Repeatable unlimited times.

RE 674 Real Estate Investment Analysis (3) Development of strategic business plans for the optimization of a firm’s real property assets. Includes facilities utilization audits, contingency planning, and the impact of new technologies.

Religion (REL)

College of Arts and Humanities

REL 150 Introduction to the World’s Major Religions (3) Buddhism, Christianity, Confucianism, Hinduism, Islam, Judaism, Shinto, Taoism and indigenous traditions of Hawai’i and/or Oceania.

REL 151 Religion and the Meaning of Existence (3) Basic ideas and issues in contemporary religious thought about the meaning of existence. DH

REL 200 Understanding the Old Testament (Hebrew Bible) (3) Examines the Old Testament (Hebrew Bible) as an expression of the religious life, history, and thought of ancient Israel and as a sacred text within later Judaism and Christianity. DH

REL 201 Understanding the New Testament (3) Origin and development of early Christian message as set forth in the New Testament; special attention to Jesus and Paul. DH

REL 202 Understanding Indian Religions (3) Historical survey of the teachings and practices of major religious traditions of India. DH

REL 203 Understanding Chinese Religions (3) Taoism, Confucian, Buddhist and folk beliefs and practices in their social and historical context. Repeatable one time. DH

REL 204 Understanding Japanese Religions (3) Broad survey, with primary focus on Shinto, Buddhism, and modern sectarian movements, analyzed in relation to social and cultural themes of major historical periods. DH

REL 205 Understanding Hawaiian Religion (3) Major teachings and practices from ancient times to present, their cultural influence; analysis of religious texts; relation to other traditions of Oceania and to Christianity. DH
REL 207 Understanding Buddhism (3) Survey of major forms and practices. DH
REL 208 Understanding Judaism (3) Survey from origin to modern times; emphasis on Jewish thought in Talmudic and medieval periods. DH
REL 209 Understanding Islam (3) Historical survey of the beliefs and practices of Islam as a world religion, including the prophet Muhammad, scriptures, philosophy and science, theology, law, major sectarian movements, relations with other religious traditions and fundamentalism. (Alt. years) DH
REL 210 Understanding Christianity (3) History of ideas concentrating on events, persons, and issues with the greatest impact on the evolution of Christianity. DH
REL 300 The Study of Religion (3) Definitions and functions of religion; methodologies by which it is studied; relationship to other areas of human culture. Prec: 150 or consent. DH
REL 301 Biblical Hebrew I (3) Orthography and structure of Biblical Hebrew, history and development of Hebrew as the sacred language of Judaism, overview of religious and historical development of the Hebrew Bible. Prec. or consent. (Fall only) (Cross-listed as LLEA 301)
REL 302 Biblical Hebrew II (3) Reading of selected prose passages from the Hebrew Bible; analysis of literary forms, paying special attention to stories which have played an important role in the development of the Abrahamic religions. Minimum C- grade required for prerequisites. Prec: 301/LLEA 301. (Offered only as LLEA 302)
REL 303 Creation and Evolution (3) An exploration of interactions between science and religion with a focus on cosmogony. Prec: 150 or consent. DH
REL 308 Zen (Ch’an) Buddhist Masters (3) Study of lives, teachings, practices of Zen masters in China, Japan, Korea, and the West. Prec: one of 150, 203, 204, 207; or consent. DH
REL 310 Global Christianity (3) Christianity as a transcultural religion, through the study of Christian art, literature, ritual, and theology in diverse cultures; including the Near East, Africa, Latin America, and the Pacific. Prec: 150, 201, or 210; or consent. (Once a year) DH
REL 333 Cults and New Religions (3) Study of cults and new religious movements in America, the Pacific, and East Asia. Analyzing mainstream, cult, and new religious movements, the specific practices of the movements. Prec: 150 or consent. DH
REL 348 Religion, Politics, and Society (3) Exploration of the diverse approaches and perspectives that American society expresses with respect to some of the more controversial and diverse elements of contemporary American life. Prec: 150 or consent. DH
REL 351 Christian Ethics in Modern Life (3) The meaning of Christian faith for the moral life with reference to contemporary moral issues. Prec: 150 or 151, or consent. DH
REL 352 Sufism: Mystical Traditions of Islam (3) Introduction to the history, literature, and worldview of Sufism. Students will encounter the following topics in relation to mystical themes: asceticism, monotheism, philosophy, love, union, sainthood, ecstatic experience, and spiritual uses of art. Prec: 209 or 383 or PHIL 350 or HIST 354, or consent. (Once a year) DH
REL 353 Witches and Witchcraft (3) Persecution of witches, witchcraft in Europe, 1300–1700, examined as crisis of church and theology; origins, effects on church and society. Prec: one of 201, HIST 151, HIST 152, or consent. (Once a year) DH
REL 354 Islam in History (3) Examination of the historical connections between Islam and other civilizations will focus on the role of Islam in world history. Prec: 150 or 209 or consent. DH
REL 356 Women and Religion (3) Examining roles of, and contributions by, women in major religious traditions through autobiographies, films, and primary texts. Prec: 150 or ANTH 152 or WS 151. (Cross-listed as WS 356) DH
approved by student’s project committee. A-F only. Pre: consent of committee.

REL 695 Topics in Religious Studies (3) Topics in the study of religion with special emphasis on theoretical approaches and concerns. Specific topics to be preannounced. Repeatable one time. Pre: 600 or consent. (Alt. years)

REL 699 Directed Reading and Research (V) Repeatable unlimited times.


Reproductive Biology (REPR)
School of Medicine
The minimum grade required for undergraduate prerequisites is a D or better, and graduate prerequisites is a C (not C-) or better.

REPR 499 Directed Reading/Research (V) Repeatable unlimited times.

REPR 611 Seminar in Biomedical Sciences (1) Presentation and discussion of current research topics in biomedical sciences. Repeatable nine times. Pre: consent. (Cross-listed as CMB 611)

REPR 633 Issues in Sex and Reproduction (V) Explores issues in sex and reproduction. Topics include defining masculinity and femininity, and nature/nurture influences on sexual different characteristics, controversies in reproduction and ethics associated with matters like pornography and age of consent. Repeatable unlimited times. CR/NC only. Pre: PHYL 604 or consent.

REPR 699 Directed Research (V) Repeatable unlimited times.

REPR 700 Thesis Research (V) Repeatable unlimited times. Pre: admission to candidacy (master’s program).

REPR 705 Special Topics in Reproductive Biology (V) In-depth discussion of selected areas of reproductive biology, with special emphasis on recent research results and methodologies. May be retaken for credit. Pre: consent.

REPR 800 Dissertation Research (V) Repeatable unlimited times. Pre: admission to candidacy (PhD program).

Russian (RUS)
College of Languages, Linguistics and Literature All courses are conducted in Russian. A grade of C- or better in the prerequisite courses is required for continuation.

RUS 101 Elementary Russian (3) Conversation, reading, writing, grammar. HSL

RUS 102 Elementary Russian (3) Continuation of 101. Pre: 101 or consent. HSL

RUS 201 Intermediate Russian (3) Reading, conversation, grammar, composition, Pre: 102 or consent. HSL

RUS 202 Intermediate Russian (4) Continuation of 201. Pre: 201 or consent. HSL

RUS 209 Russian Phonetics (3) Basic theory of Russian sound system; practice in pronunciation, intonation, and fluency. Pre: 102 or 201 (or concurrent).

RUS 260 Intensive Intermediate Russian Abroad (V) Intensive course of formal instruction on the second-year level in Russian language and culture. Pre: 201. HSL


RUS 304 Advanced Russian (3) Continuation of 303.

RUS 306 Russian Structure (3) Advanced grammar; complexities of standard contemporary Russian; word formation and verb system. Pre: 202 or consent.

RUS 311 Readings in Russian Civilization and Literature (3) Mid-level readings in Russian civilization and literature of edited and adapted texts. Pre: 202. DL

RUS 312 Readings in Russian Civilization and Literature (3) Continuation of 311. Pre: 311. DL

RUS 360 Intensive Third-Level Russian Abroad (V) Intensive course of formal instruction on the third-year level in Russian language and culture in Russia. Pre: 202 or 260.

RUS 399 Directed Reading (V) Independent study of approved reading with faculty supervision. Repeatable two times or up to six credits. A-F only. Pre: 202 and consent and departmental approval.

RUS 403 Advanced Conversation and Composition (3) Systematic practice on selected topics; vocabulary building and development of fluency; writing short reports, narratives. Pre: 304 or consent.

RUS 404 Advanced Conversation and Composition (3) Continuation of 403. Pre: 403.

RUS 418 Advanced Reading and Translation: Modern Prose (3) Readings in various fields, emphasizing idiomatic usage. Pre: 312 or consent.

RUS 419 Advanced Reading of Russian Press (3) Materials from Soviet-Russian newspapers and magazines. Pre: 311 or consent.

RUS 431 Russian Folklore (3) Selected Russian folk narratives, ballads, songs, and proverbs. Influence of folklore on major Russian authors. Pre: 312 or consent.

RUS 441 Russian Short Story (3) Origin and development (19th and 20th century); major writers. Pre: three years of Russian or consent.

RUS 442 Russian Novel (3) Origin and development from 18th century to present. Pre: three years of Russian language or consent. DL

RUS 451 Topics in 19th- and 20th-Century Russian Literature (3) Focus upon the selected writings of one major Russian writer of the 19th century (e.g., Pushkin, Gogol, Lermontov, Dostoevsky, or Tolstoy) or 20th century (e.g., Bely, Blok, Bulgakov, Chekhov, Pasternak, Sholokhov, or Solzhenitsyn). Repeatable unlimited times with consent. Pre: 312, LLEA 351; or consent. DL

RUS 452 Topics in 19th- and 20th-Century Russian Literature (3) Continuation of 451. Pre: 312, LLEA 352, or consent. DL

RUS 460 Intensive Fourth-Level Russian Abroad (V) Intensive advanced courses of formal instruction on the fourth-year level in Russian language and culture in Russia. Pre: 360 or equivalent.

RUS 495 Seminar (3) Literary or linguistic topics, movements, genres, or their representatives. Repeatable unlimited times with consent. Pre: consent of chair.

RUS 499 Directed Reading/Research (V) Independent study of approved reading with faculty supervision. Repeatable up to six credits. A-F only. Pre: 303 (or equivalent), consent or departmental approval.

Samoan (SAM)
College of Languages, Linguistics and Literature

SAM 101 Elementary Samoan (4) Listening, speaking, reading, writing skills. Structural points introduced inductively. History and culture. Meets four hours weekly. HSL

SAM 102 Elementary Samoan (4) Continuation of 101. Pre: 101 or consent. HSL

SAM 201 Intermediate Samoan (4) Continuation of 202. Meets four hours weekly, three of four hours devoted to drill and practice. Pre: 102. HSL

SAM 202 Intermediate Samoan (4) Continuation of 201. Pre: 201 or consent. HSL

SAM 227 Overview of Samoan Literature in English (3) Survey of major writers of Samoan literature in English, lecture/discussion format. Pre: One 300-level literature course. DL

SAM 301 Third-Level Samoan: Traditional Culture (3) Continuation of 202. Advanced reading and composition with development of language structure integrated in a variety of communicative and creative activities based on selected traditional cultural topics. Meets three times weekly; additional lab work. Pre: 202 or consent.

SAM 302 Third-Level Samoan: Contemporary Culture (3) Continuation of 202. Advanced reading and composition with development of language structure integrated in a variety of communicative and creative activities based on selected contemporary cultural topics. Pre: 202 or consent.

SAM 321 Samoan Conversation: Traditional Contexts (3) Systematic practice on various topics for control of spoken Samoan in traditional contexts. Pre: 202 or equivalent; or consent.

SAM 322 Samoan Conversation: Contemporary Contexts (3) Systematic practice on various topics for control of spoken Samoan in modern contexts. Pre: 202 or equivalent; or consent.

SAM 421 Samoan Ceremonial Speech (3) Development of oratory skills in Samoan ceremonial speech. Emphasis on institutionalized applications such as the kava ceremony and formal speaking. Pre: 302 or 322, or consent.

SAM 422 Samoan Ceremonial Speech (3) Continuation of 421. Pre: 421 or consent.

SAM 431 Samoan Oral Traditions (3) Historical survey and analysis of the oral traditions and genealogies of Samoa with special emphasis on the relationship of these traditions with Samoan ceremonial speech. Pre: 302. DL

SAM 432 Samoan Oral Traditions II (3) Continuation of 431. Pre: 431 or consent. DL

SAM 452 Structure of Samoan (3) Study of modern Samoan grammar including some sociolinguistic background. Pre: 202 or LNG 102, or consent.

SAM 461 Traditional Samoan Literature (3) A survey of the major genres of traditional Samoan literature. Taught in the Samoan language. Pre: 302 or consent. DL

Sanskrit (SNSK)
College of Languages, Linguistics and Literature

SNSK 181 Introduction to Sanskrit (4) Introduc- tion to basic Sanskrit grammar; reading and analysis of progressively difficult classical texts. HSL

SNSK 182 Introduction to Sanskrit (4) Continuation of 181. HSL

SNSK 281 Intermediate Sanskrit (4) Continuation of 282. Reading and analysis of classical texts with review of grammar. Pre: 182. HSL

SNSK 282 Intermediate Sanskrit (4) Continuation of 281. HSL

SNSK 381 Third-Level Sanskrit (3) Continuation of 282. Reading and analysis of various classical texts. Pre: 282.

SNSK 382 Third-Level Sanskrit (3) Continuation of 381. Introduction to Veda.

SNSK 481 Fourth-Level Sanskrit (3) Continuation of 382. Reading, analysis, and interpretation of various Vedic or Sanskrit texts selected according to students’ interests. Pre: 382.

SNSK 482 Fourth-Level Sanskrit (3) Continuation of 481.

Second Language Studies (SLS)
College of Languages, Linguistics and Literature

Courses below 408 are not applicable toward the MA in Second Language Studies. The minimum grade required for undergraduate prerequisites is C (not C-) and the minimum for graduate prerequisites is B (not B-).

SLS 150 Learning Languages and Communicating in a Globalized World (3) Lecture/discussion on strategies for enhancing second language learning in the context of a pluricultural-multilingual globalized world; addresses personal identity as influenced by languages; studies language-related employment, international mobility, and cross-cultural relationships. DS
SLS 280 Bilingualism: Cognition and Culture (3) Introduction to bi-/multilingualism as a phenomenon at the level of society and as a characteristic of individual speakers; discussion of recent media reports and popular myths about bilingualism in relation to research-based evidence. DS

SLS 302 Second Language Learning (3) Theoretical foundations for the learning and teaching of second/foreign languages. Includes an emphasis on instruction in writing. Pre: upper division standing. DS

SLS 303 Second Language Teaching (3) Survey of methodology; basic concepts and practices. Pre: 302 (or concurrent).

SLS 312 Techniques in Second Language Teaching: Reading and Writing (3) Methods and materials. Issues in teaching; survey of available materials and practice in their adaptation. Includes an emphasis on instruction and feedback in oral communication. Pre: 302 (or concurrent). DS

SLS 408 Bilingual Education (3) Survey and analysis of current thinking and practices in bilingual/bicultural education, with emphasis on ESL/EFL. Includes an emphasis on instruction in writing. Pre: 302 (or concurrent) or 600 (or concurrent); or consent. DS

SLS 418 Instructional Media (3) Theoretical foundations and practical applications of using electronic and audiovisual media in second language teaching. Pre: 303 (with minimum grade of C), or 600 (with minimum grade of B or concurrent); or consent.

SLS 430Pidgin and Creole English in Hawai‘i (3) Major historical, descriptive, pedagogical aspects: pidgin and creole languages, linguistic change, language variation. Work with actual language data. Laboratory work required. Pre: 302 (or concurrent), or LING 302 (or concurrent); or consent. DS

SLS 441 Language Concepts for Second Language Learning and Teaching (3) Language analysis—phonology, syntax, semantics, discourse for teaching second languages. Pre: one of 302 (or concurrent), LING 102, LING 320, or 600 (or concurrent); or consent. DS

SLS 460 English Phonology (3) Basic course in English phonetics and phonology; emphasis on areas of interest to language teachers. Pre: 302 (or concurrent). DH

SLS 480 (Alpha) Topics in Second Language Studies (3) Variable topics in special areas of second language studies: (E) second language learning; (N) second language analysis; (P) second language learning; (R) second language research methodology; (U) second language use. Repeatable two times in different topics. Pre: 302 (or concurrent) for (E), (N), (R), (U); 303 (or concurrent) for (P). Not applicable toward graduate degrees offered within SLS except by departmental consent. DS

SLS 485 Professionalism in SLS (3) Capstone for SLS majors. Reflection on experiences via the major, articulation of professional values, exploration of diverse approaches to professionalism in SLS, and formal completion of professional portfolio. SLS majors only. Senior standing or higher. A-F only. Pre: 302 and 303.

SLS 490 Second Language Testing (3) Measurement and evaluation of achievement and proficiency in second language learning. Pre: 302 (or concurrent), 441, LING 102, or 600 (or concurrent). DS

SLS 499 Directed Reading/Research (V) For interdisciplinariany-studies majors. Pre: a minimum cumulative GPA of 2.7 or a minimum GPA of 3.0 in major, or consent of department chair. DS

SLS 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.

SLS 600 Introduction to Second Language Research (3) Introduction to basic professional and research issues in second language studies; integration of theory, research, and practice for prospective second or foreign language teachers and researchers. Pre: graduate standing or consent.

SLS 610 Introduction to Teaching Second Languages (3) Survey and analysis of second language teaching traditions and perspectives. Pre: graduate standing or consent.

SLS 612 Alternative Approaches to Second Language Teaching (3) Examination, comparison with conventional approaches; interpersonal relationships in language learning. Pre: consent.

SLS 613 Second Language Listening and Speaking (3) Key issues; overview and critique of published materials; practice in developing syllabi and other materials. Pre: consent.


SLS 618 Language and Learning Technologies (3) A wide range of emerging technologies for language learning and research will be explored. Online/face-to-face discussions and hands-on experiential learning are integrated with learner’s goals, best practices, and theoretical foundations. Pre: consent. (Once a year)

SLS 620 Second Language Reading (3) Survey of research in reading processes; teaching methodology; psycholinguistic investigations; comparison of reading in first and second languages. Pre: consent.

SLS 630 Second Language Program Development (3) Designing, implementing, and evaluating language programs; systems-based approach to program and curriculum development. Pre: consent.

SLS 640 English Grammar (3) Descriptive English grammar in relation to second language learning and teaching.

SLS 642 Comparative Grammar and Second Language Acquisition (3) Comparative study of structures of two or more languages; native speaking informants used. Consideration of language transfer in second language learning, role of typological features. Pre: 441, 460, or LING 403.

SLS 650 Second Language Acquisition (3) Survey of theories and research on second language learning by children and adults, learning naturallyistically and in formal settings. Relationships are explored between SLA research and language teaching. Pre: 441 or consent.

SLS 660 Sociolinguistics and Second Languages (3) Theoretical and applied aspects of language, culture, and society, and research methods in sociolinguistics and relation to second and foreign language issues. Pre: consent.

SLS 670 Second Language Quantitative Research (3) Quantitative research methods; design of research studies; techniques in collecting data; statistical inference; and analysis and interpretation of data. Pre: 490 and graduate standing or consent.

SLS 671 Research in Language Testing (3) Advanced issues in language testing research including recent developments in the following areas: language testing hypotheses, item analysis, reliability, dependability, and validity. Pre: 490 or consent.

SLS 672 Second Language Classroom Research (3) Survey of research on second language classrooms and analysis of methodological issues. Pre: consent.

SLS 673 Applied Psycholinguistics and Second Language Acquisition (3) Theory and research in psycholinguistics and psycholinguistic aspects of second language perception, production, acquisition, and instruction. Pre: 441 or LING 422, or consent.

SLS 674 Survey Research Methods in Second Language Studies (3) Hands-on experience in language survey planning and creating survey instruments (both interviews and questionnaires), administering, compiling and analyzing survey data (quantitatively and qualitatively), and reporting results. (Once a year)

SLS 675 Second Language Qualitative Research (3) Philosophical and theoretical approaches, methodology, and ethics in second language qualitative research. Pre: 660 (or concurrent) or consent.

SLS 676 Interpretive Qualitative Inquiry (3) Explores a range of qualitative inquiry methods and theories. Through a project-based approach, students will develop and carry out research relevant to their own interests, immediate learning/teaching needs, and long term professional goals. Pre: 660 (or concurrent) or consent.

SLS 678 Discourse Analysis in Second Language Research (3) Survey of recent approaches to discourse—microanalytic qualitative research; theory and methodology. Pre: 660 or consent.

SLS 680 (Alpha) Topics in Second Language Studies (3) Variable topics in special areas of second language studies: (E) second language learning; (N) second language analysis; (P) second language pedagogy; (R) second language research methodology; (U) second language use. Repeatable one time for different alphabas. Pre: 650 for (E); consent for (N) and (P); 670 or 675 or 678, or consent for (R); 660 for (U).

SLS 690 ESSL Teaching Practicum (3) Student teaching in ESSL classroom. Pre: advancement to candidacy and consent.

SLS 699 Directed Reading/Research (V) Individual reading in various fields of ESL. CR/NC only. Repeatable unlimited times. Pre: consent of graduate chair and instructor.

SLS 700 Thesis Research (V) Individual reading in various fields of ESSL. Repeatable unlimited times. CR/NC only. Pre: consent of graduate chair and instructor.


SLS 775 Seminar in Second Language Qualitative Research (3) Qualitative research in second language and multilingual contexts. Repeatable unlimited times. Pre: consent.

SLS 799 Apprenticeship in Teaching (V) An experienced-based introduction to college-level teaching; graduate students serve as student teachers to professors; responsibilities include supervised teaching, and participation in planning and evaluation. Repeatable unlimited times. CR/NC only. Pre: graduate standing and consent.

SLS 800 Dissertation Research (V) Repeatable eight times. Satisfactory only.

Social Sciences (SOSC)

College of Social Sciences

Two kinds of courses are available directly from the College of Social Sciences: interdisciplinary courses and courses on tools, techniques, theories, and methods shared by the social science disciplines. The broader perspective and opportunity for cross-disciplinary interaction makes these courses attractive.

SOC 150 Street Science: Evaluating and Applying Evidence in Daily Life (3) Develops necessary tools for effective reasoning and problem-solving through use and application of analytic techniques, including question formation, understanding/interpreting data presented in the public sphere, and evaluating the validity of sources. A-F only.

SOC 180 Introduction to International and Global Studies (3) Introduces undergraduate students to the major political, social, economic, cultural, technological, and historical dimensions of globalization. Special attention will be paid to globalization process that have impacted Hawai‘i and the Asia-Pacific region. A-F only. FGB

SOC 225 Statistical Analysis for Social Sciences (3) Statistical reasoning in the analysis of social sci-
ence data, including descriptive statistics, exploratory data analysis, inference measures of association, decomposition of variance, and regression analysis. Lab required. Pre: any 100 level social science course or consent.

SOC 250 Social Science Enquiry (3) Survey of inquiry methods in social sciences with an emphasis on the development of skills of inquiry, including critical thinking, evidence gathering and evaluation, reasoning, and argumentation. Pre: any 100-level social science course or consent. DS

SOC 385 Service Learning (1) Intended for students undertaking the service learning option in another course in the College of Social Sciences. Discussions on student’s experiences, types of learning occurring in service, and the use of student learning activities in the community. Repeatable two times. CR/NC only.

SOC 601 Topics in Teaching Innovations (3) Examination and critical analysis of contemporary curriculum design principles and their application. Pre: any 100-level social science course or consent. DS

SOC 735 Ocean Policy Seminar (2) Interdisciplinary approach to problems relating to humans and their interactions with the world’s oceans and coasts. Theme changes each semester. Repeatable eight times. (Cross-listed as OEST 735)

Social Work (SW)

School of Social Work

SW 200 The Field of Social Work (3) Orientation to the profession of social work; historical development, values and philosophy, scope and aims.

SW 302 General Social Work Practice I (3) Orientation to practice principles, concepts, values, knowledge base, and theories. Pre: 200 (complete with C or better) and majors only.

SW 303 General Social Work Practice II (3) Introduction to practice skills with individuals, families, groups, and communities. A significant portion of class time is dedicated to writing instruction congruent with professional expectations. Pre: 302 (complete with C or better) and majors only. Co-requisite: 391.

SW 325 History of Social Welfare (3) Historical development and implications of social welfare activities, institutions, and policies and European backgrounds; introduce social welfare developments in selected non-European countries. Recommended: 200.

SW 326 Social Welfare as a Social Institution (3) Study of U.S. social welfare institutions and policies to the basic processes of social work and the roles and skills needed for generalist practice. Relevant theories of social work practice with individuals are explored for the efficacy with various problems and for their applicability to practice with various ethnecultures, social classes, and oppressed populations. Interviewing and interpersonal skill development are incorporated. A-F only. Pre: permission of chair and advisor. (Fall only)

SW 500 Master’s Plan B/C Studies (1) A-F only. Pre: 606. Special emphasis is given on models for assessment, intervention from case to program. A-F only. Pre: graduate standing. (Fall only)

SW 606 Social Work Practice with Individuals (3) Practice course builds upon the generalist framework and foundation content presented in 600. Special emphasis is given on models for assessment, intervention and practice with families and groups. Relevant theories of groups and the principles of group dynamics and group work methods are examined in regard to task, therapeutic, psychoeducational, and social development groups. Family concept includes structural, behavioral, communication/ experiential, and culturally-specific theories of intervention. Pre: 606.

SW 630 Social Welfare Policy and Services (3) Examines in a historical and comparative framework the economic, social, political, organizational, and administrative factors influencing the development, formulation, and implementation of social welfare policies in the U.S. Special opportunity for the application of various models of social policy analysis in major areas of social welfare programming and service delivery. A-F only. Pre: graduate standing. (Fall only)

SW 631 Social Work Practice in Communities and Organizations (3) Community conceptualization; organized roles of developer, enabler, broker, mediator, and advocate; diagnostic and problem-solving technology; the special characteristics of the social worker as a community manager; matrix of structural objectives; sources and use of power; how to build an organization; and interorganizational negotiation. A-F only. Pre: 606, graduate standing, and consent. (Spring only)

SW 636 Policies, Programs and Services on Aging (3) Explores policies, programs, and services for older adults. Students learn about the aging network, assess older adults’ needs, link older adults to appropriate services in the community, and track legislative bills that address older adults’ quality of life. Pre: graduate standing or consent.

SW 639 Social and Cultural Aspects of Aging (3) Overview of aging from the biopsychosocial, socioeconmic, and cultural perspectives. Explores common theories of aging. Emphasis on bridging the gap between the realm of concepts and theories, and the world of practice in gerontology. Pre: graduate standing or consent.

SW 640 Introduction to Scientific Methods and Principles in Social Work (3) Understanding and interpreting results of nonnomothetic and idiosyncratic research design principles and their application to research 

SW 650 Research Designs and Data Analyses for the Evaluation of Practice Effectiveness (3) Extending the study of scientific methods introduced in 640. Covers the range of empirical research methods and data analytic procedures suitable for knowledge building and practice evaluation at all levels of intervention from case to program. A-F only. Pre: 640. (Spring only)

SW 651 Quantitative Methods I (3) Introduction to quantitative methods in behavioral sciences. Introduction to general linear model as principle of data analysis. Course requires basic statistics. (Meeting PhD common inquiry methods requirement or elective.)

SW 654 Applied Regression and Analysis of Variance (3) Introduction to linear statistical models as principle of data analysis. Topics include multiple regression models with continuous and categorical predictors. ANOVA with multiple factors, ANOVA with repeated measures, and ANCOVA, Pre: 601 or consent.

SW 656 Multivariate Methods (3) Multivariate form of multiple linear regression, analysis of variance, and analysis of co-variance. Multiple discrimi 

tinate analysis, canonical correlation, and principal components analysis are discussed.

SW 659 Human Behavior in the Social Environment I (3) An overview of social work’s person-in-environment focus as it applies to human behavior in the context of families, groups, communities, and organizations. Using an ecological perspective, theories and evidence about human behavior are introduced and examined. A-F only. Pre: graduate standing. (Fall only)

SW 660 Human Behavior in the Social Environment II (3) Uses social work’s person-in-environment focus to organize knowledge development about biological, psychological, social, and cultural systems as they are affected by human behavior. It is designed to provide students with an overview of human behavior and healthy and unhealthy development over the life span. A-F only. Pre: 659. (Spring only)

SW 663 Treatment of Chemical Dependency (3) Introduction to treatment of alcoholism and other chemical dependencies. Application of social work strategies in work with individuals and families in the disease and recovery process. Repeatable one time. Pre: graduate standing.

SW 672 Child Welfare as a Field of Social Work (3) Emphasis on the developments in child welfare; issues, concerns with regard to needs and rights, and the application of social work services to problems associated with needs for protection. Review of historical, theoretical, empirical, and legal findings for skill development in intervening in dysfunctional parent/child interaction. (Cross-listed as PH 671)

SW 674 Community and Public Health Practice (2) Community organization and development applicable to the delivery of health services. Understanding community dynamics, mobilizing community groups for effective health care practice and delivery. Pre: PH 647 or PH 737 or consent. (Cross-listed as PH 671)

SW 680 Topics in Social Welfare (V) Current trends in field of social welfare. Recent courses have
focused on forensic social work, immigrants and refugees, and leadership in human services. Meets seminar requirement. Repeatable one time in different topics. Pre: graduate standing.

SW 690 Practicum (3) Field units are maintained by the school in public and voluntary welfare agencies, as well as in governmental programs. Students receive instruction related to their school experience with social problem situations and an opportunity to see the applicability and to experience the use of concepts and principles in actual practice. Pre: admission to MSW program.

SW 691 Practicum (3) Field units are maintained by the school in public and voluntary welfare agencies, as well as in governmental programs. Students receive instruction related to their school experience with social problem situations and an opportunity to see the applicability and to experience the use of concepts and principles in actual practice. Pre: admission to MSW program.

SW 696 Health and Aging (3) Biological and physiological changes associated with aging. Social and psychological factors associated with health maintenance. Major threats to health, changing patterns of morbidity and mortality of the aged. Pre: graduate standing.

SW 699 Directed Reading and Research (V) Students, on the basis of special interest, select a faculty member to work with on a problem for which planning, consultation, and the development of knowledge for social work practice. Pre: graduate standing.

SW 700 Thesis Research (V) Independent research under supervision of a thesis committee. Includes formal proposal and defense of finished research. Repeatable unlimited times. Pre: consent.

SW 707 Methods of Group Psychotherapy (3) Designed specifically to train students in the theory and practice of leading psychotherapy groups; it includes historical developments, research, theories, and application of psychotherapy, group techniques and exercises. Pre: 607 or consent.

SW 715 Therapeutic Strategies with the Older Adult (3) Focuses on interdisciplinary strategies with older adults: individual, family, and group therapy; eclectic mental health approaches; case management; and environmental intervention. Emphasis placed on the use of these strategies as preventive, as well as supportive, measures for the well, transition, and frail elderly. Meets seminar requirement. Pre: graduate standing.

SW 717 Social Work Practice with Children and Families (3) Advanced practice course for students specializing in social work with children and families. Designed to provide students with an in-depth understanding of both theoretical formulations and therapeutic techniques for practice in the field of family and child welfare. Emphasis placed on the development of specialized knowledge and skills for assessment, intervention, and evaluation of a variety of common child and family practice situations. Pre: completion of foundation courses.

SW 718 Seminar in Social Work Practice with Children and Families (3) Designed for students in the child and family concentration and builds upon past knowledge and skill development in practice classes and in the practicum. Students integrate, demonstrate, and extend earlier learning, acquire new knowledge, and learn and practice new skills. Organized around student case presentations in a consultation format. Meets seminar requirement. Pre: 717.

SW 722 Social Work Practice in Health Care (3) Didactic and experiential learning activity focuses on the major roles and functions of the social worker in the health field including assessment, contracting, counseling, advocacy, case management, discharge planning, family group work, community and team building, Covey’s 7 habits of highly effective people, research directions in practice and social work management issues. Pre: completion of foundation courses.

SW 723 Seminar in Social Work Practice in Health Care (3) Through the use of case studies developed by the students, social work practice is examined in three areas of health care: primary care provided in health departments and medical groups, hospital-based services, and long-term care. Meets seminar requirement. Pre: 722.

SW 724 Seminar in Social Work Practice in Mental Health (3) Prepares students for social work practice in mental health settings. As the first course in the concentration, it focuses primarily on major or short-term mental dysfunctioning (e.g., reactive depression, anxiety) and social foundations including cultural implications of mental health, human ecology, life cycle/events, strengths assessments, and research. Includes a seminar component which involves student case presentations and consultations. Pre: completion of foundation courses.

SW 725 Social Work Practice in Mental Health (3) Prepares students to work with persons who are experiencing major mental disorders and to improve the systems of care that have been developed to serve this population. It reviews the history of the community mental health movement, discusses relevant policies and laws, and describes the current mental health system in the U.S. and Hawaii. Pre: 724.

SW 726 Social Work Practice with the Aged (3) Designed specifically for students specializing in social work practice with the aged and their families. Examines normative and pathological aging and its impact on physical processes, intellectual functions, and personality. Pre: placement of a faculty development of specialized knowledge and skills for assessment, intervention, and evaluation of a variety of issues and needs common in later life. Discussions on the applicability of certain interventions with the older adult as utilized along with ethnocultural and gender considerations. Pre: completion of foundation courses.

SW 727 Seminar in Social Work with the Aged (3) Designed for social work students in the aged concentration. Builds upon past knowledge and skill development from courses and practicum. Students examine micro and macro interventions used for a wide range of issues and problems encountered by older adults and achieve the use of both case presentation and case consultations assignments. Meets seminar requirement. Pre: 726.

SW 731 Social Policy Analysis (3) Students pursue in-depth a specific topic in the areas of social planning, social policy analysis, evaluation of social programs, administration, supervision, and consultation. Selectively a comparative perspective is introduced and case studies used to illustrate concepts, principles, and techniques, with implications for practice. Meets seminar requirement. Pre: 630 or consent.

SW 737 Social Work and the Law (3) Knowledge of judicial systems and law relevant to social work practice in corrections, child-family welfare, health, and mental health. Skills for effective participation in the legal process are acquired in moot court and in practice for testifying. Pre: graduate standing.

SW 741 Review of Research in Social Work (3) In-depth study of research in a substantive area. Each seminar will be devoted to a particular topic: e.g., foster care of children, effectiveness of social work intervention, etc. Pre: 650.

SW 743 Individual or Group Research Project—Plan B (V) Independent research (group of two to seven students or by an individual student) undertaken under the supervision of a faculty advisor. Elements are selection of a topic related to the practice of social work or knowledge relevant to that practice, utilization of empirical research methodology in collecting and analyzing data, and preparation of a scholarly paper. Pre: 650.

SW 744 Individual or Group Research Project—Plan B (V) Same as 743. Pre: 743.

SW 746 Individual or Group Research Project—Plan B (V) Same as 743.

SW 750 Analysis and Development of Knowledge for Social Work (3) Designed for students developing an understanding of philosophy of science, theory development, social work epistemology, and the analysis and development of knowledge for social work practice. Pre: PhD candidate in social welfare or consent.

SW 751 Quantitative Methods II (3) Empirical research methodology with emphasis on design principles and measurement theory; design and measurement issues and problems in cross-cultural research. Pre: Ph.D. candidate in social welfare or consent.

SW 752 Qualitative Research: Methodological and Analytic Approaches (3) Theories and methods of qualitative research; problem formulation, informant selection, study design, data collection and analysis utilizing qualitative approaches. Repeatable three times. A-F only. Pre: 640 or 651 or equivalent; departmental approval.

SW 755 Dissertation Seminar (3) Culminating experience in social welfare doctoral specialization; integration of Ph.D. core and specialization course work. Pre: classified student in PhD in social welfare program or consent.

SW 774 Cultural Factors in Work with Hawaiians (3) Hawaiian culture, past and present. Explores and examines possible approaches to working with Hawaiians and part-Hawaiians. Special emphasis on supports in the Hawaiian system that may promote maximal functioning for those Hawaiians experiencing problems in today’s society. Meets seminar requirement. A-F only. Pre: graduate standing.

SW 776 Seminar on Women and Health (3) Women’s health and the role of women health professionals. Current literature and research regarding attitudes, roles, rights, and health care. Pre: graduate standing or consent. (Cross-listed as PS 744)

SW 790 Second-Year Practicum (V) Instruction in the field is continued. The practicum of the second year provides an opportunity for the student to test out concepts, principles, theories, and alternate approaches in actual practice settings. Pre: 691.

SW 791 Second-Year Practicum (V) Same as 790.

SW 794 Advanced Social Welfare Policy Analysis and Change (3) Builds on 630 and emphasizes a more thorough and comprehensive examination of major policies, programs, and populations central to a concentration (Health, Mental Health, Gerontology, Child and Family). Students learn a more focused and applied analysis of the relationship between social policy, research, and social work practice. SW majors only. A-F only. Pre: 686 and 667; 630 and 651; 640 and 656; 659 and 660; 690 and 691.

SW 800 Dissertation Research (V) Repeatable one time.

Sociology (SOC)

College of Social Sciences

In addition to the prerequisites specified below, all 300-level courses have as a prerequisite SOC 100 or a 200-level sociology course. In addition to the prerequisites specified below, all 400-level courses require SOC 300 or consent. All prerequisite courses require a minimum grade of C (not C-).

SOC 100 Introduction to Sociology (3) Basic social relationships, social structures, and processes. DS

SOC 214 Introduction to Race and Ethnic Relations (3) Race and ethnic relations in world perspective; social, economic, and political problems associated with perception, existence, and accommodation of these groups within the wider society. (Cross-listed as ES 214) DS

SOC 218 Introduction to Social Problems (3) Theoretical and substantive survey of the nature and causes of social problems; selected types: poverty, inequality, deviance, etc. DS

SOC 231 Introduction to Juvenile Delinquency (3) Forms of juvenile deviance; conditions and processes that result in alienation and deviance of youth. Juvenile corrections as institutionalized societal responses. DS

SOC 251 Introduction to Sociology of the Family (3) Family patterns, mate selection, parent-child interaction, socialization of roles, legal sanctions, trends in organization, functions. DS

SOC 300 Principles of Sociological Inquiry (4) (3 Lec, 2 50-min Lab) Basic methods of sociology for production and analysis of data. Foundations for

Key to symbols & abbreviations: see the first page of this section.
understanding research and for advanced courses in methods and statistics. DS
SOC 300A Principles of Sociological Inquiry (4) (Lec, 2 50-min Lab) Basic methods of sociology for production and analysis of data. Foundations for understanding research and for advanced courses in methods and statistics. Restricted to students in the honors program and required for students taking the honors track in sociology. A-F only. DS
SOC 301 Survey of Urban Sociology (3) The city in historical and contemporary perspectives. Interplay of demographic, economic, and cultural factors in urban growth. Urban process, development, and interdependence. DS
SOC 305 Women and Health (3) Explores current issues in the conceptualization and delivery of health care for women. Pre: 100 or any 200-level SOC course, or WS 151 or WS 202, or POLS 110; or consent. (Cross-listed as WS 305) DS
SOC 311 Survey of Social Inequality and Stratification (3) Introduction to social stratification theory and research; definition and measurement of socioeconomic status; racial, ethnic and gender inequality; differences in lifestyles and life chances; social mobility. DS
SOC 313 Survey of Sociology of Work (3) Work from viewpoint of individuals; meaningfulness versus productivity; how work, economics, and the industrial system affect individual goals. DS
SOC 316 Survey of Social Change (3) Causes, processes, and effects of social change, using single- and multi-cause models of simple and complex industrialized societies. DS
SOC 318 Women and Social Policy (3) Social and economic policies affecting women in families, education, social services, government, health care, the economy, public policy implementation and development; policy impact on women. Pre: 100 or any 200-level SOC course, or WS 151 or any 200- or 300-level WS course; or consent. (Cross-listed as WS 318) DS
SOC 321 Survey of Sociological Theory (3) Major theorists and their influences, from Comte to today. DS
SOC 332 Survey of Sociology Law (3) Law as a political enforcement of the social order; how it is organized and operates; determinants of effectiveness; ways it adapts to and facilitates changing social conditions. DS
SOC 333 Survey of Criminology (3) Concepts used in crime, law enforcement, criminal justice, and corrections. Types of criminal behavior; costs and effects of control. DS
SOC 335 Survey of Drugs and Society (3) Use of mood- and mind-altering drugs in America among adults, youth, and cross-culturally. Illicit drug culture, psychedelics, and perception; social norms and deviant behavior. DS
SOC 336 Deviant Behavior and Social Control (3) Interrelations of deviance, criminology, juvenile delinquency, corrections, social control, sociology of law. Key concepts, theories. DS
SOC 341 Survey of Social Psychology (3) Major principles; social classification theories of conformity and change, person perception and attribution theory, social role, role conflict and role behavior, group structure, and behavior. DS
SOC 352 Survey of Sociology of Education (3) Formal education as one aspect of socialization. Emphasis on American system; business, military, and religious institutions. Emphasis on American system; business, military, and religious institutions. DS
SOC 355 Survey of Sociology of Aging (3) Aging as a social phenomenon, including social impacts of growing elderly population and emerging social patterns among the elderly. Important theoretical perspectives and cross-national research. DS
SOC 354 Survey of Medical Sociology (3) Social factors in disease and treatment; illness behavior, roles of patients and professionals, structure of healing professions; use of medical services; alternative systems of medical organization. DS
SOC 356 Sociology of China (3) Social institutions, family, community, education, stratification, government, economy; impact of modernization and revolution on their contemporary transformation, A-F only. DS
SOC 357 Sociology of Japan (3) Persistence and change in economy, policy, religion, education, family, and other institutions of modern Japan. DS
SOC 358 Sociology of Korea (3) Social institutions, family, education, religion, cultural values, social classes, stratification, social movements, gender relations, North-South relations, and unification issues. A-F only. Pre: 100 or any 200-level SOC course, or consent. DS
SOC 362 Sociology of Gender (3) Effect of sex and gender roles (both traditional and nontraditional) on reproduction, socialization, marriage, family, social roles; educational, economic, and governmental systems. Recommended: at least one WS course. Pre: 100 or any 200-level SOC course, WS 151 or any 200- or 300-level WS course; or consent. (Cross-listed as WS 362) DS
SOC 374 Law, Politics and Society (3) Relationships between law, politics, and society will be explored. Emphasis is placed on several dimensions of legality: legitimate "inducements to crime," nonexistence of legal things that law does for us and to us; law's response to violence; the connections between law and social change; access to the law and its sociological dimensions; how/why law fails and what happens when it does. A-F only. Pre: 100 or any 200-level SOC course, or a 100-level or 200-level POLS course, or consent. (Cross-listed as POLS 374) DS
SOC 401 Analysis in Urban Sociology (3) Urbanization in developed and developing countries, the rural-urban continuum, structure and process of metropolitan regions, theories of urban location and growth, housing and urban renewal. DS
SOC 411 Analysis in Social Stratification (3) Approaches to research in social inequality; community studies; historical and cross-cultural analyses of poverty, working class, middle class, power structure, social mobility, etc. DS
SOC 412 Analysis in Population and Society (3) Global and U.S. patterns of population growth; composition and distribution, elementary demographic techniques; development issues and population policy. Pre: 300 or consent. (Cross-listed as GPHS 412) DS
SOC 413 Analysis in Economy and Society (3) Study of the development trend of economic change and its impact on society; globalization of economic activities and transformation of industrial society to postindustrial one; corporate restructuring and downsizing and the employment and income distribution; gender relations in workplaces; the impact of globalization on the newly industrializing countries. Pre: 300 or consent. DS
SOC 415 Technology and Society (3) Nature of technology, social forces that affect its adoption; impact on society; innovation. DS
SOC 418 Women and Work (3) Gender and racial division of labor nationally and internationally; racial and gender differentials in wages, training, working conditions, and historical trends and future directions. Pre: 300, or one 300-level WS or ES course; or consent. (Cross-listed as ES 418 and WS 418) DS
SOC 419 Analysis in Formal Organizations (3) School, business, industry, prisons, and government agencies analyzed in terms of self-actualization, alienation, human relations, communication, leadership, organizational conflicts. DS
SOC 431 Analysis in Criminology/Juvenile Delinquency (3) Research in systematic social deviation. Scaling and measurement of delinquents/criminals, official data, gangs, identification and measurement of delinquent/criminal value orientations, etc. DS
SOC 432 Analysis in Corrections (3) Behavioral assumptions of various correctional practices and modes of organization; current "in-community" approaches. DS
SOC 433 Analysis in Law and Social Change (3) Interrelationships between legal orders and other social institutions; use of "law" to change major status relationships, e.g., boss-worker, woman-man, child-adult. DS
SOC 435 Women and Crime (3) Women's relations with the criminal justice system; types of women's offenses; responses to women's crime; women as victims; women as workers in the criminal justice system. Recommended: at least one WS course. Pre: 300, or WS 151 or any 200- or 300-level WS course; or consent. (Cross-listed as WS 435) DS
SOC 441 Social Structure and the Individual (3) Effects of social institutions on individuals. Role of socioeconomic status, cultural background, family structure, peer group, schools, and occupational roles in socialization. DS
SOC 445 Analysis in Gender Violence (3) Historical and structural theories of gender-based violence, including domestic and sexual abuse, prostitution, trafficking, cross-cultural perspectives, social policy and practices. Junior standing or graduate standing only. Pre: 300 or consent. (Once a year) DS
SOC 446 Gender Violence Over the Lifecycle (3) Examines the problem of violence, particularly sexual violence, over the life cycle. Offers gender perspective on activities aimed at prevention and treatment of violence, and cross cultural perspectives. Pre: 300, WS 151 or any 200- or 300-level WS course; or consent. (Cross-listed as WS 446) DS
SOC 451 Analysis in Marriage and the Family (3) Theory and methods of studying social interaction in marriage and the family; examination of marriage, mating, love, and choice. Empirical research emphasizing Hawai'i. DS
SOC 452 Marriage and Family: A Feminist Perspective (3) Sex-role socialization, motherhood, work-family conflicts. Alternative family structures in U.S. and other countries. Recommended: at least one WS course. Pre: 300, or WS 151 or any 200- or 300-level WS course; or consent. (Cross-listed as WS 452) DS
SOC 453 Analysis in Sociology of Aging (3) Social and research issues significant to delivery of long-term care services to the elderly; cost, quality, availability of services, evaluation of programs, role of family, formal and informal care services. DS
SOC 454 Analysis in Medical Sociology (3) Application of sociological theories and concepts to medical social situations and behavior; problems of obtaining data for research. DS
SOC 455 Sociology of Religion (3) Seminar in research on sociological aspects of religious sectarianism; attention to Hawai'i. Pre: 300 or consent. (Cross-listed as REL 452) DS
SOC 456 Racism and Ethnicity in Hawai'i (3) The historical and contemporary social processes involved in inter-ethnic relations in Hawai'i. Pre: 300 or one ES 300 level course, or consent. (Cross-listed as ES 456) DS
SOC 457 Sociology of the Arts (3) Relation of art to society; role of artist, audience, critic, patron, museum; Western and other societies; attitudes toward new styles. DS
SOC 458 Analysis in Sports and Society (3) Critical perspectives on sports and society. Topics include professionalism; inequality; money and power; socialization; youth development; globalization; gender; and violence in sports and the wider society. Pre: 300 and 321 (Spring only) DS
SOC 459 Popular Culture (3) Popular culture as manifested in film, sports, TV, comics, magazines, etc.; relation to sociological theories and studies. DS
SOC 475 Analysis in Survey Research (3) Survey research design and analysis, including theory selection, instrument construction, sampling techniques, data collection, computerized data analysis, and writing up research reports of the findings. DS
SOC 476 Social Statistics (3) Common statistical procedures emphasizing univariate and bivariate description; some attention to multivariate techniques and statistical inference, within context of research.
SPAN 201 Intermediate Spanish (3) Continuation of oral practice and grammar study; increasing emphasis on reading and written composition. Pre: 102. HSL.

SPAN 202 Intermediate Spanish (3) Continuation of 201. Pre: 201. HSL.

SPAN 203 Intensive Second-Year Spanish (6) Course content of SPAN 201 and 202, covered in one semester. Three two-hour sessions per week. Pre: 102 or 103. HSL.

SPAN 258 Intermediate Spanish Abroad (3) Intensive course of full-time formal instruction on the second-year level in Spanish language and culture in a Spanish-speaking country. Pre: 102. HSL.

SPAN 259 Intermediate Spanish Abroad (3) Continuation of 258. HSL.

SPAN 300 Reading in Spanish (3) Development of language skill through reading of literary and cultural texts. Pre: 202 or placement exam or consent.

SPAN 301 Grammar and Composition (3) Selected grammar review and intensive practice in effective use of the written language. Pre: 202 or 203 or 259, or consent.

SPAN 302 Grammar and Composition (3) Selected grammar review and intensive practice in effective use of the written language. Pre: 301 or 310, or consent.

SPAN 303 Conversation I (3) Intensive practice in spoken Spanish focusing on the preparation and completion of oral tasks and presentations. Pre: 301 or (concurrent), or consent.

SPAN 304 Conversation II (3) Continuation of 303. Pre: 303 or consent.

SPAN 305 Introduction to Spanish-English Translation (3) Practical introduction to Spanish-English translation with translations of texts from Spanish to English and the reverse. Pre: 301 or 310 or consent.

SPAN 306 (Alpha) Spanish for Professionals (3) Language as used in specific professions. (B) commercial Spanish; (C) medical Spanish. Sophomore standing or higher. Pre: 301 or 310, or consent.

SPAN 308 Introduction to Spanish-English Interpreting (3) Students will begin to develop the listening and memory skills for direct and inverse interpretation. Sophomore standing or higher. Pre: 301 or 310, or consent.

SPAN 310 Spanish for Heritage Speakers (3) Focuses on standard and academic varieties of Spanish for English-dominant heritage speakers in order to improve their literacy skills. Pre: placement exam. (Fall only)

SPAN 330 Phonetics and Pronunciation Practice (3) Analysis of the Spanish phonological system, in contrast with English. Practice in pronunciation. Pre: 301 or 310, or consent.

SPAN 351 Spanish Cultural Perspectives (3) Survey of the history and cultures of Spain. Pre: 301 or 310, or consent. DH.

SPAN 352 (Alpha) Latin American Cultural Perspectives (3) Survey of the history and cultures of Latin America. (B) Pre-Columbian and Colonial periods; (C) Independence, nationhood and current issues. Repeatable one time for other topics, but not for the same topic. Pre: 301 or 310, or consent. DH.

SPAN 354 Third-Level Spanish Abroad (3) Intensive formal instruction at the third-year level in Spanish language skills: reading, writing, grammar, or conversation in a Spanish-speaking country. Pre: 202 or 259 or equivalent.

SPAN 359 Third-Level Spanish Abroad (3) Continuation of 358.

SPAN 360 Intensive Third-Level Spanish Abroad (V) Intensive formal instruction at the third-year level in Spanish language skills: reading, writing, grammar, or conversation in a Spanish-speaking country. Pre: 202 or 259.

SPAN 361 Masterworks of Spanish Literature (3) Reading and discussion of representative works of Spanish literature: origins to 18th century. Pre: 301 or 310, or consent. DL.

SPAN 362 Masterworks of Spanish Literature (3) Reading and discussion of representative works of Spanish literature: 18th century to present. Pre: 301 or 310, or consent. DL.

SPAN 371 Spanish-American Literature (3) Reading and discussion of representative works of Spanish-American literature: Colonial period through Romanticism. Pre: 301 or 310, or consent. DL.

SPAN 372 Spanish-American Literature (3) Reading and discussion of representative works of Spanish-American literature: Modernism to the present. Pre: 301 or 310, or consent. DL.

SPAN 399 Directed Reading (V) Independent study of approved reading with faculty supervision. Repeatable two times. A-F only. Pre: 301 (or concurrent), consent and departmental approval.

SPAN 400 Spanish Language in Society (3) Explores issues in Spanish language in society (media, communication, advertising, government, technology). Introduces and examines current sociolinguistic and sociopragmatic issues. Pre: 330 or consent.

SPAN 403 Advanced Composition and Conversation (3) Advanced practice; emphasis on building active vocabulary. Pre: 302 or consent.

SPAN 405 Spanish-English Translation (3) Factors in the art of translation. Practice in translating material from Spanish to English and the reverse. Pre: 305 or consent and TI 404.

SPAN 451 Historical Spanish Linguistics (3) Evolution of Spanish from Latin; modern social and geographical dialects. Pre: 302 or 330, or consent.

SPAN 452 Introduction to Spanish Linguistics (3) Analysis of morphology, syntax, and semantics. Pre: 302 or 330, or consent.

SPAN 458 Fourth-Level Spanish Abroad (3) Intensive course of full-time formal instruction on the fourth-year level in Spanish linguistics, civilization, culture, and literature in a Spanish-speaking country. Pre: 302, 303, 358, or consent.

SPAN 459 Fourth-Level Spanish Abroad (3) Continuation of 458.

SPAN 460 Intensive Fourth-Level Spanish Abroad (V) Intensive course of formal instruction on the fourth-year level in Spanish language and culture in a Spanish-speaking country. For semester programs only. Pre: 360 or equivalent.

SPAN 461 Spanish Neoclassicism/Romanticism (3) Representative works from Spanish Neoclassicism (18th century) and Romanticism (19th century). Genres: the essay, poetry, essay, novel. Pre: 361 or 362, or consent. DL.

SPAN 477 U.S. Latino Literature (3) Study of the literature of U.S. Hispanics written in Spanish or bilingually. Pre: 371 or 372, or consent. DL.

SPAN 478 Hispanic Women’s Literature (3) The feminine experience in Western literary and cultural traditions as seen by women in Spain and Latin America. Pre: one of 361, 362, 371 or 372; or consent. DL.

SPAN 480 Hispanic Theater (3) Study of representative authors and plays from Spain and Latin America. Repeatable one time. Pre: one of 361, 362, 371, or 372; or consent. DL.

SPAN 495 (Alpha) Topics in Hispanic Scholarship (3) Hispanic authors, periods, or themes. (B) literature and society. DL; (C) Hispanic poetry. DL; (D) literature and film. DL. Repeatable for other topics, but not for the same topic. Pre: one of 361, 362, 371, or 372; or consent.

SPAN 496 Studies in Latin American and Iberian Film (3) Intensive study of selected topics in Latin American and/or Iberian cinema; e.g. national or regional cinemas, periods, movements or issues, major filmmakers, film theory and criticism. Repeatable two times. Pre: one of 361, 362, 371, or 372; or consent. DH.

SPAN 499 Directed Reading and Research (V) Independent study of approved readings and research with faculty supervision. A-F only. Repeatable two times. Pre: consent of instructor and departmental approval.

Key to symbols & abbreviations: see the first page of this section.

SPAN 453 Spanish Dialectology (3) Introduction to the dialects of Spanish spoken around the world. Lectures and discussions cover the variation and change of Spanish phonology, lexicon, morphology, and syntax. Graduate students only. Pre: consent. (Alt. years)

SPAN 658 Seminar in Spanish Applied Linguistics (3) Repeatable unlimited times with consent. Pre: graduate standing or consent.

SPAN 660 Medieval Spanish Literature (3) Representative readings in prose and poetry, from origins through 15th century. Pre: graduate standing or consent.

SPAN 665 (Alpha) Golden Age Literature (3) Spanish literature from the 16th and 17th centuries. (B) theater; (C) prose; (D) Eervances. Pre: graduate standing or consent.

SPAN 669 19th-Century Spanish Realism (3) Nineteenth-century Spanish realism in the novel. Authors include Galdós, Clarín, Alarcón, Pardo Bazán, Blasco-Ibáñez, Valera. Pre: graduate standing or consent.

SPAN 670 (Alpha) 20th-Century Spanish Literature (3) Representative works from 20th-century literature. Genres: poetry, theater, essay, novel. (B) generation of 1898; (C) pre-Civil War; (D) post-Civil War. Pre: graduate standing or consent.


SPAN 681 Colonial Spanish-American Literature (3) Spanish-American literature from period of discovery to independence. Representative authors such as Sor Juana, Bernal Díaz del Castillo. Pre: graduate standing or consent.

SPAN 682 Spanish-American Poetry (3) Study of representative poets from all periods: Martí, Darío, Mistral, Guillén, Neruda, Paz, etc. Pre: graduate standing or consent.

SPAN 683 Spanish-American Short Story and Essay (3) Study of representative writers from various periods: Sor Juana, Palma, Quiroga, Reyes, Borges, etc. Pre: graduate standing or consent.

SPAN 695 Seminar in Hispanic Literature (3) A period, author, genre, or region. Repeatable unlimited times with consent. Pre: graduate standing or consent.

SPAN 699 Directed Research (V) Repeatable unlimited times. Pre: consent of department chair.

Special Education (SPED)

College of Education

SPED 304 is a prerequisite course to the Post-Baccalaureate Special Education (PB-SPED) in mild/moderate disabilities program; SPED 412 is a prerequisite course to the PB-SPED in severe/autism program. A minimum grade of B- is required for all prerequisite courses prior to beginning program courses. All field course work requires candidates to obtain current TB clearance, background check, and liability insurance.

SPED 201 Disability and Diversity (3) Explores the changing disability experience (from “stereotype” to “normalization”) as depicted in film, literature and dialogue with persons with disabilities in the Pacific region. Students will employ “technologies for voice” to share stories. A-F only. DS.

SPED 304 Foundations of Inclusive Schooling (3) Foundations of “special education” exploring philosophies, diverse and historical viewpoints, laws, and service delivery. Students reflect upon texts, films and interviews with persons with disabilities, their families and professionals to understand the culture of disability. A-F only. DS.

SPED 315 Field Training – Blended ECE (4) Students spend 15 hours per week in settings appropriate to concurrently enrolled classes; supervision provided by participating teacher and college supervisor. Repeatable two times. A-F only. Pre: 304 and ITE 415 (with a minimum grade of B-), or consent. (Cross-listed as ITE 315)

SPED 332 Young Children with Communication Needs (3) Communication development of infants
and young children, ages birth through age 8, with and without disabilities. Assessment and intervention to support the development of communication skills in inclusive community and school environments. A-F only. Pre: FAMR 331 (with a minimum grade of B-) or consent.

SPED 390 (Alpha) Student Teaching in Special Education (V) Full-time supervised experience in school. (B) elementary/special education; (C) early childhood education/special education; (D) unclassified. Repeatable one time per alpha. A-F only. Pre: 400 (with a minimum grade of B) and requirements for registration listed under “student teaching.” Co-requisite: 391B for (B); 391C for (C); 391D for (D).

SPED 391 (Alpha) Seminar for Student Teachers in Special Education (V) Seminar relating current educational theories with experiences. (B) elementary/special education; (C) early childhood education/special education; (D) unclassified. Repeatable one time per alpha. A-F only. Pre: requirements for registration listed under “student teaching.” Co-requisite: 391B for (B); 391C for (C); 391D for (D).

SPED 392 Student Teaching in Special Education Modified (V) Modified student teaching for students from another institution completing student teaching at UH or for students who have prior extensive teaching experience. A-F only. Pre: requirements for registration listed under “Student Teaching.” Approved and reviewed one time per consent.

SPED 400 Field Training in Special Education (V) Students participate in classroom settings appropriate to concurrently enrolled courses; supervision provided by participating teacher and college supervisor. Repeatable up to 10 credits. A-F only. Pre: 304 (or concurrent) or consent. Co-requisite: one of 461, 462, or 465 or consent.

SPED 412 Individuals with Severe Disabilities/Autism (3) Etiology, characteristics, and development of individuals with severe disabilities and autism; biological, psychological and legal issues affecting individuals with severe disabilities and autism; multicultural, family, and consumer issues; professional and ethical issues in providing services. A-F only.

SPED 414 Education of Gifted Students (3) Characteristics and educational provisions for gifted children and youth with particular attention to psychological aspects of giftedness. A-F only.

SPED 415 Education of the Gifted/Talented (3) Utilization and evaluation of teaching/learning strategies for gifted/talented students, including consideration of roles, expectations for learning, and organizational procedures. Pre: 414 or consent.

SPED 421 (Alpha) Strategies for Reading Difficulties (V) Overview of methods, programs, and strategies for areas designed to improve the performance of elementary students, grades K-6, who experience difficulties in reading acquisition, fluency, and comprehension. (B) elementary/special education/special education; (D) unclassified. Repeatable one time per alpha. A-F only.

SPED 425 (Alpha) Partnerships with Families and Professionals (V) Knowledge and skills for relating to families and professionals on behalf of the children and youth with and without disabilities. Coverage of the context in which family members and student personnel interact. (B) elementary/special education; (C) early childhood education/special education; (D) unclassified. Repeatable one time per alpha. A-F only.

SPED 443 Disability and Diversity in Physical Activity (4) (3 Lec, 1 1-hr. Lab) Participants will explore issues of socio-cultural, sexual orientation, religion, and intellectual and physical disabilities, and how these affect a student’s learning and behavior in the physical education setting. Required field experience. Repeatable one time. A-F only. (Cross-listed as Kinesiology 443)

SPED 444 Educating Exceptional Students in Regular Classrooms—Elementary (3) Teaching elementary students with disabilities and those who are gifted/talented. Meeting academic/social needs, classroom management, motivation, peer interaction, collaboration between special and regular educators. Includes an emphasis on instruction in writing. (Cross-listed as ITE 444)

SPED 445 Educating Exceptional Students in Regular Classrooms—Secondary (3) Teaching secondary and multimodal students and those who are gifted/talented. Meeting academic/social needs, classroom management, motivation, peer interaction. Collaboration between special and regular educators. Includes an emphasis on instruction in writing. (Cross-listed as ITE 445)

SPED 446 Seminar in Special Education (3) Study of issues, trends, and research into special education programming and service delivery. Repeatable two times. Pre: consent.

SPED 447 Seminar for Infants/Toddlers (3) Examination of current research, theory, issues, and models in programs for infants and toddlers including criteria for evaluation and planning. Pre: FAMR 230 (or concurrent) and FAMR 331 (or concurrent), or consent. (Cross-listed as ECDS 451)

SPED 452 Preschool Children—Special Needs (3) Examination of application of current research and practices for serving preschool children with special needs. Pre: FAMR 230 (or concurrent), or consent.

SPED 461 (Alpha) Assessment, Planning, and Instruction for Mild/Moderate Disabilities (3) Techniques in the assessment, planning, and instructional process appropriate for students with mild/moderate disabilities. Stress on program development to enable the integration of students with disabilities into general education environment. (B) elementary/special education, V credits; (C) early childhood elementary/special education; (D) unclassified. Repeatable up to six credits for (B). A-F only. Pre: 304 (with a minimum grade of B).

SPED 462 (Alpha) Assessment, Planning, and Instruction for Students with Severe Disabilities/Autism (3) Techniques in the assessment, planning, and instructional process appropriate for students with severe disabilities. Focus on program development to facilitate the inclusion of students with disabilities into general education settings. (B) elementary/special education, V credits; (C) early childhood elementary/special education; (D) unclassified. Repeatable up to six credits for (B). A-F only. Pre: 304 (with a minimum grade of B).

SPED 480 (Alpha) Technology for Children with Disabilities (V) Overview of technologies for children with disabilities. Focus on program development to facilitate the inclusion of students with disabilities into general education settings. (B) elementary/special education, V credits; (C) early childhood education/special education; (D) unclassified. Repeatable up to six credits for (B). A-F only. Pre: 304 (with a minimum grade of B).

SPED 485 (Alpha) Classroom Organization and Management (5) Knowledge and skills related to basic organizational management of an inclusive classroom, including scheduling, grouping, and instructional and behavior management, planning and instructional process appropriate for students with and without disabilities. Coverage of the context in which family members and student personnel interact. (B) elementary/special education; (C) early childhood education/special education; (D) unclassified. Repeatable one time per alpha. A-F only.

SPED 499 Directed Reading/Research (V) Individual reading, research, and/or projects under direct supervision of instructors. Repeatable nine times. Pre: consent of instructor or department chair.

SPED 500 Master’s Plan B/C Studies (1) Enrollment in depth of concentration. Pre: master’s Plan B candidate and consent.

SPED 501 Post-Baccalaureate in Special Education Program Seminar (1) Mandatory program seminar for Post-Baccalaureate in Special Education (PB-SPED) teacher candidates to review and discuss knowledge and skills necessary for distance education program success; Introduction to the Special Education teaching profession. Post-Bac in SPED majors only. CR/NC only. Pre: consent.

SPED 502 Internship Experience in Special Education—Post-Baccalaureate (2) Students spend a minimum of 100 hours over a minimum of 11 weeks in settings appropriate to SPED-PCert program emphasis (mild/moderate or severe/autism); supervision provided by participating special education supervisor. Repeatable two times. Post-Baccalaureate in Special Education only. A-F only. Pre: 304 or 412.

SPED 527 Student Teaching in Special Education—Post-Baccalaureate Programs (6) Supervised student teaching with a master teacher in PreK-12 educational settings appropriate to SPED-PCert program emphasis (mild/moderate, severe/autism); minimum 280 hours in minimum 11 weeks. Supervision by master teacher and university supervisor. Must enroll for two consecutive semesters. Repeatable three times.

SPED 581 (Alpha) Practicum in Special Education (1) For in-service school/community personnel to present new ideas, approaches, instructional methods, materials for teaching exceptional individuals. (B–E) general SPED: (F–G) secondary program/SPED: (H–I) bilingual/multicultural/special needs; (J–K) severe disabilities; (M–N) early childhood/special needs; (R–S) career/technical/special needs; (Q–R) computer/special needs; (S–T) arts/special needs; (U–W) computer training/special needs; (X–Y) consultant skills/special needs; (Z) Ho’okolo. Repeatable one time per consent. CR/NC only. Pre: teaching or related work experience.

SPED 582 (Alpha) Practicum in Special Education (2) For in-service school/community personnel to present new ideas, approaches, instructional methods, materials, and teaching exceptional individuals. (B–E) general SPED: (F–G) secondary program/SPED: (H–I) bilingual/multicultural/special needs; (J–K) severe disabilities; (M–N) early childhood/special needs; (R–S) career/technical/special needs; (Q–R) computer/special needs; (S–T) arts/special needs; (U–W) computer training/special needs; (X–Y) consultant skills/special needs; (Z) Ho’okolo. Repeatable nine times. CR/NC only. Pre: teaching or related work experience.

SPED 583 (Alpha) Practicum in Special Education (3) For in-service school/community personnel to present new ideas, approaches, instructional methods, materials, and teaching exceptional individuals. (B–E) general SPED: (F–G) secondary program/SPED: (H–I) bilingual/multicultural/special needs; (J–K) severe disabilities; (M–N) early childhood/special needs; (R–S) career/technical/ special needs; (Q–R) computer/special needs; (S–T) arts/special needs; (U–W) computer training/special needs; (X–Y) consultant skills/special needs; (Z) Ho’okolo. Repeatable eight times. CR/NC only. Pre: teaching or related work experience.

SPED 590 Internship, Special Education (6) Supervised field activities involving the programming and instruction of special education students in training programs in Hawai’i and the Pacific Basin. Pre: consent.

SPED 600 Foundations of Exceptionality (3) Theoretical, legal and multicultural foundations for assessing, teaching and developing individual service plans across the lifespan for persons with disabilities. Pre: consent.
SPED 601 Technology for Diverse Learners: Access, Accommodations, and Universal Design (3) Strategies for using assistive technologies, multimedia technology, and telecommunications to design engaging learning environments that provide access and give voice to diverse learners. Emerging technologies for access, accommodations, and universal design are explored. Pre: one of 480, LTEC 414, or LTEC 442.

SPED 602 Special Education Law and Compliance (3) Examination of the federal, state, and local government roles in special education with special emphasis on case and regulatory law. Focus on understanding special education laws necessary in providing services to students with disabilities in a variety of placements. Appropriate for special/general education teachers, administrators, or related service providers. Pre: consent.

SPED 603 Principles of Behavior (3) Principles and laws governing behavior and methods that can be used to accomplish educationally relevant changes in student performance. Emphasis on the conceptual basis for changing behavior and use of technologies for changing behavior in school and community settings. Pre: consent.

SPED 605 Collaboration in School and Community Settings (3) Collaboration skills necessary to function as team members and to ensure the success of students with disabilities in inclusive school and community settings. Pre: consent.

SPED 606 Language Development for Deaf Children (3) General theories of first and second language development applied to development of ASL and English. Characteristics of children’s interactions with language and implications for educational practice. Taught in ASL and English. Repeatable one time. A-F only. Pre: admission into Deaf Education program or consent. (Alt. years)

SPED 607 Audiology and Spoken English for Deaf Students (3) Developmental principles of audiology and spoken English will be examined. Techniques for and limitations of use of audiological assessment in ASL and English will be presented. Taught in ASL and English. Repeatable one time. A-F only. Pre: admission into Deaf Education program or consent. (Alt. years)

SPED 608 Literacy Development for Deaf Students (6) Basic concepts related to language, language development and reading a Deaf student’s interaction with language, and techniques used to teach reading and writing to deaf students. Repeatable one time. A-F only. Pre: 461 and 606, or consent. (Alt. years)

SPED 609 Seminar in Bilingual Deaf Education (3) Study of issues, trends and methods in ASL/English bilingual education for deaf students. Taught in ASL and English. Repeatable one time. A-F only. Pre: 461 and 606, or consent. (Alt. years)

SPED 610 Advanced Assessment and Curriculum Development—Deaf (3) Assessment methods and techniques used with deaf students that emphasize the bond between curriculum-based assessment and curriculum-based programming through planning and providing instruction across content areas based on ongoing diagnostic assessment. Taught in ASL and English. Repeatable one time. A-F only. Pre: 461 and 606, or consent. (Alt. years)

SPED 611 Methods and Strategies for Students with Mild/Moderate Disabilities (3) Techniques for providing effective instruction including: best instructional practice, lesson planning, teacher-directed and student-mediated instructional strategies, and curricular approaches for working with students with mild/moderate disabilities. A-F only. Pre: 304 or consent.

SPED 612 Advanced Assessment and Curriculum Development (3) Assessment methods and techniques that emphasize the bond between curriculum-based assessment and curriculum-based programming. Planning and cyclical instruction across content areas based on ongoing diagnostic assessment. Pre: 461 and 606.

SPED 614 Assessment and Instruction—Severe Disabilities and Autism (3) Basic principles of assessment, instruction, and curriculum development; application of formal and informal assessment procedures for goal selection, formulating instructional plans, and adapting instructional materials to accommodate students with severe disabilities and autism. Pre: consent.

SPED 615 Family-Centered Approaches in Deaf Education (1) Prepare teachers to deliver family-centered home-based services to families of deaf children. The SKI-HI model. Course will be taught in ASL and English. Repeatable one time. A-F only. Pre: 606, 607 and 608; or consent. (Alt. years)

SPED 616 Collaboration—Working with Deaf Students in Inclusive Settings (3) Collaboration skills for working with general education teachers, specialists, paraprofessionals, families and community members to support the success of deaf students in inclusive settings. Taught in ASL and English. Repeatable one time. A-F only. Pre: 606, 607 and 608; or consent. (Alt. years)

SPED 617 Transition Strategies for Deaf Students (1) Collaborative model for facilitating the transition of deaf and hard-of-hearing students to develop appropriate transition plans and effective plans of study. Taught in ASL and English. Repeatable one time. A-F only. Pre: 606, 607 and 608; or consent. (Alt. years)

SPED 618 Adaptations and Special Procedures—Students/Severe Disabilities/Autism (3) Adaptations and special procedures to support the participation of individuals with severe motor, communication, and/or adaptive behavior disabilities in inclusive school and community settings. Includes lab work. Pre: consent.

SPED 620 Strategies Across Content Area (3) Strategies for teaching math, science, and social sciences to students of all ages with mild/moderate disabilities; selection of appropriate materials, teaching techniques, curriculum development. Pre: 611 or consent.

SPED 621 Language Arts Strategies: Students with Mild/ Moderate Disabilities (3) Basic concepts related to language, language development, and recognition of language-related learning problems of students with mild/moderate disabilities; strategies for teaching language arts curricula (listening, speaking, reading, writing) to students of all ages with learning problems. Pre: 504 and consent.

SPED 622 Children’s Literature for Deaf Students (3) Introduction to ASL literature translated into American Sign Language (ASL) including discussion of ASL literature genres, the importance of translation, selection of literature; story reading, book reading, retelling. Taught in ASL and English. Repeatable one time. A-F only. Pre: 609 or consent. (Alt. years)

SPED 625 Teaching Skills for Social Competence (3) Issues in social development, self-determination, and social skills competence training for children and youth with disabilities; experience in group social skills training and development of individualized programs. Pre: either 485 or 630, and either 611 or 614; or consent.

SPED 626 Field Experiences in Special Education (3) Students spend a minimum of nine hours per week in settings appropriate to concurrently enrolled courses; supervision provided by participating teacher and college supervisor. Repeatable three times. Pre: consent.

SPED 627 Advanced Practicum (6) Supervised education/community experiences; minimum of 20 hours weekly with special-needs population (MR, LD, SED, SMH); pre-school through postsecondary settings (public or private); seminar and/or supervised practicum equivalent and completion of SPED core required. Repeatable one time. Pre: consent.

SPED 628 Internship (3) Supervised education/community experiences with special needs populations (MR, LD, SED, SMH); pre-school through postsecondary settings. Completion of SPED core required; must enroll for two consecutive semesters. A-F only. Repeatable two times. Pre: 626 and consent.

SPED 629 Clinical Practice Special Projects (V) Development and implementation of a field-based research professional development project under the direction of the student’s advisor; limited to students enrolled in the interdisciplinary minor. Repeatable up to 12 credits. A-F only. Pre: advisor’s approval.


SPED 631 Early Intervention for Specific Populations (3) Issues important to early childhood special education. Early screening and assessment, working with families, curriculum options/models, program development. Pre: consent.


SPED 633 Motor Development/Intervention for Students with Severe Disabilities (3) Motor development and behaviors of students with dyslexia or related reading difficulties. Pre: consent. Repeatable one time. A-F only. Pre: consent. (Cross-listed as KRS 634)

SPED 635 Procedures for Early Childhood Special Education (3) Assessment and intervention strategies to promote behavior change with young children with disabilities. Promoting child skill gains and integrated programming options. A-F only. Pre: consent.

SPED 637 Topics and Issues in Reading Difficulties (3) Introduction to foundational knowledge of language and literacy development. Current topics and issues related to literacy development in students with dyslexia and related reading difficulties. Repeatable one time. A-F only. Pre: consent.

SPED 638 Fundamentals of Language and Literacy (3) Introduction of basic linguistic structures of written English related to reading, spelling, and writing for beginning or struggling readers. Covers evidence-based practices for teaching literacy to students with dyslexia and related reading difficulties. Repeatable one time. A-F only.

SPED 639 Advanced Fundamentals of Language and Literacy (3) Advanced linguistic structures of English related to reading, spelling, and writing for older students. Covers diagnostic assessment, planning, instruction, and progress monitoring for students with dyslexia or related reading difficulties. Repeatable one time. A-F only.

SPED 640 Seminar on Mild/Moderate Disabilities (3) Study of issues, research, program development in the area of mild/moderate disabilities. Repeatable two times. Pre: consent.

SPED 641 (Alpha) Seminar in Issues in Special Education (3) Seminar on issues, trends, research, and program development aspects of the field of special education. (B) current issues and trends; (C) technology; (D) foundations: (E) developmental disabilities; (F) cultural and linguistic diversity; (G) evidence-based practices. Repeatable two times. Pre: consent.

SPED 642 Seminar on Applied Research/Special Education (3) Study and development of applied research topics in special education. Repeatable two times. Pre: consent.
SPED 650 Seminar on Universal Design for Learning (3) Seminar on issues of research and practice on the application of universal design for learning in K-12 and higher education settings. Focus on culturally and linguistically diverse students, diversity, non-traditional students and students with disabilities. Repeatable one time. A-F only.

SPED 652 Transition/Supported Employment (3) Transition planning for youth with disabilities in preparation for employment as adults in private and public sector businesses. A-F only. Prec: consent.

SPED 688 Research Practicum in Special Education (3) Directed research experience to demonstrate mastery of research skills and techniques through developing and writing research proposals. Repeatable one time. A-F only, or departmental approval. (Once a year)

SPED 695 Plan B Master’s Project (3) Independent study for students working on a Plan B master’s project. Repeatable one time. A-F only. Prec: graduate standing in Special Education.

SPED 699 Directed Reading/Research (V) Individual reading/research. Repeatable unlimited times. Prec: consent of instructor and department chair.


SPED 705 Seminar in Exceptionalities (3) Current and historical trends in the field of exceptionalities. Repeatable with different content. Prec: consent.

SPED 706 Doctoral Internship (6) Supervised internship (minimum 18 hours per week) in program development and administration or research in the student’s area of emphasis. Prec: consent.

SPED 710 Professional Seminar in Exceptionalities (1) Professional norms, duties, and expectations of leaders in exceptionalities; transitioning from practitioner to researcher and leadership roles; familiarity with current research and trends in the field of exceptionalities. Repeatable five times. PhD in EDUC majors only. Graduate students only. A-F only.

SPED 740 Single-Case Experimental Design (3) Advanced single-case experimental design; examines the logic of internal and external validity of small “N” design and its functionalist foundations. Prec: consent.

SPED 745 Special Topics in Exceptionalities (3) Critical discussion of historical and current topics in early intervention, special education, and/or developmental disabilities. Repeatable two times. A-F only. (Once a year)

SPED 760 Grant Development/Procurement (3) Overview of grant development and procurement processes related to special education personnel preparation and research and demonstration programs. Students design a grant proposal related to a particular problem or need within their employment settings. Prec: consent.

Surgery (SURG) School of Medicine

SURG 531 Surgery Clerkship (10) A clinically based, introductory course in general surgery and selected subspecialties. Repeatable one time. Prec: third-year standing; second-year clerkship in internal medicine; four out of five hours devoted to directed drill or practical; regular on-line lab work and review of on-line audio visual materials. Prec: or consent. HLS

SURG 532 Surgery Longitudinal Clerkship (5) A clinically based, year-long, introductory in general surgery and selected subspecialties. Outpatient/conducted one day per week for six months in a community ambulatory care facility. Inpatient-conducted for four weeks in an acute-care hospital facility. Repeatable one time.

SURG 541 Emergency Medical Care (6) Clinical experiences in management of medical, surgical, and psychiatric problems requiring urgent care. Prec: 531 and fourth-year standing.

SURG 545 (Alpha) Electives in Surgery (V) Advanced clinical experience in: (B) urology; (C) neuropathology; (D) otolaryngology; (E) plastic surgery; (F) neurosurgery; (G) orthopaedics; (H) anesthesiology; (I) surgical intensive care; (J) general surgery; (K) Sub-I—pediatric surgery; (M) diagnostic radiology; (N) radiation oncology; (O) EM Sub-I; (P) extramural elect in surg; (Q) Sub-I—cardiovascular; (R) surgical research; (S) surgical anatomy; (T) preceptorship in Asia; (U) biomedical technology; (X) transplant surgery. Repeatable one time for all except (U); repeatable two times for (U) and (X). Medical students only for (U) and (X). CR/NC only. Prec: or 531 or for all except (M) and (U); and consent for (R) and (S); admission into JABSCOM for (U).

Tahitian (TAHT) College of Languages, Linguistics and Literature

TAHT 103 First Year Tahitian I (3) Basic core skills of listening, speaking and grammar of spoken Tahitian in a condensed format. Meets three 50-minute sessions weekly. HLS

TAHT 104 First Year Tahitian II (3) Basic core skills of listening, speaking and grammar of spoken Tahitian in a condensed format. Meets three 50-minute sessions weekly. Prec: or consent. HLS

TAHT 203 Second Year Tahitian I (3) Intermediate core skills of reading, speaking and knowledge of grammar for spoken Tahitian in a condensed format. Meets three 50-minute sessions weekly. Prec: or consent. HLS

TAHT 301 Third-Level Tahitian (3) Continuation of 202. Constructions weekly. HLS

TAHT 302 Third-Level Tahitian II (3) Continuation of 301. Prec: or consent.

TAHT 358 Third-Level Tahitian Abroad (3) Full-time formal instruction at the University of French Polynesia in Tahiti. Third-year level in Tahitian language and culture. Prec: or consent. HLS

TAHT 359 Third-Level Tahitian Abroad (3) Continuation of 358. Prec: or 301 or 358; and consent.

TAHT 401 Fourth-Level Tahitian I (3) Continuation of 302. Advanced conversation, reading, and writing with focus on modern formal and colloquial Tahitian styles. The language in the realms of storytelling, radio, folklore, traditional and modern writing. Survey of modern and classical language. Prec: or consent.

TAHT 402 Fourth-Level Tahitian II (3) Continuation of 401. Prec: or consent.

TAHT 458 Fourth-Level Tahitian Abroad (3) Full-time formal instruction at the University of French Polynesia in Tahiti. Fourth-year level in Tahitian language and culture. Prec: or consent.

TAHT 459 Fourth-Level Tahitian Abroad (3) Continuation of 458. Prec: or 451 or 458; and consent.
THEA 240 (Alpha) Production Techniques for Theatre (3) (3 Lec, 1 3-hr Lab) Survey class introducing basic tools, materials and skills of Technical Theatre: production, rigging, lighting, costume, make-up and painting. DL
THEA 240L. Theatre Production Lab (1) Lab observation of projects illustrating basic principles of theatre production. A-F only. Co-requisite: 240.
THEA 241 Film/TV Production Process (3) Entry-level course details three phases of the production process for film and video projects: pre-production, production, and post-production. A-F only. Pre: consent.
THEA 245 Design Principles for Performance (3) Introduction to general design principles as applied to theatre. Will introduce the language and tools of visual literacy and visual communications via individual projects and collaboration. Repeatable two times. (Cross-listed as DNCE 245) DA
THEA 311 World Theatre I: Script Analysis (3) Script analysis methods for world drama. Required of all majors. Pre: 101 or 221 or 240 or consent. DL
THEA 312 World Theatre II: Myth to Drama (3) Myth and ritual into drama, 1000 BCE–1700 CE. Development of secular drama from sacred and ritual beginnings. Required of all majors. Pre: 311 and consent. (Alt. years) DA
THEA 318 Playwriting (3) One-act plays; practice in writing in dramatic form. Repeatable one time. Pre: grade of B or better in composition or consent. DA
THEA 319 Screenplay Writing (3) Characterization, structure, theme, image, and other components of writing for film. Pre: 201 and grade of B or better in composition, or consent. (Alt. years) DA
THEA 321 Acting III: Monologue/Audition Techniques (3) Focus on the individual student: preparation and presentation of scenes from a variety of sources and the application of scenes for criticism and review. Repeatable one time with consent. Pre: 222 and consent. DA
THEA 322 Acting IV: Method Acting (3) Further exploration of character development through exercises and scenes from a variety of sources and the presentation of scenes for criticism and review. Repeatable one time with consent. Pre: 222 and consent. DA
THEA 323 Film/TV Acting (3) Acting techniques for film and TV production. Students appear in scenes from TV and film sources. Repeatable one time. Pre: 101 or 221 or COM 201 or consent. DA
THEA 324 Advanced Film/TV Acting (3) Advanced acting techniques for film and TV production. Taping/filming of scenes and full-length scripts. Repeatable one time. Pre: 223 and consent. DA
THEA 325 Introduction to Asian Acting Styles (3) Principles of acting based on traditional Asian models. Voice, movement exercises. Pre: 222. DA
THEA 334 Taiji (‘Tai Chi) for Actors I (3) Basic Taijiquan (‘Tai Chi Ch’uan) movement training. Repeatable two times. Pre: sophomore standing or higher, or consent. (Cross-listed as DNCE 334) DA
THEA 335 Taiji Round Form for Actors (3) Introduction to basic Asian movement skills through learning the Wu-style taijiquan round form, a faster and more fluid version of the full 108 taiji sequence of forms. Open to non-majors. Repeatable two times. Pre: sophomore standing or consent. DA
THEA 343 Alpha Topics in Theatre Production (3) Workshop in principles, techniques, and application of contemporary theatre production practices. (B) entertainment electives: lighting, sound, special effects, projections, and related areas; (C) technical production: technical design, construction, rigging, and related areas; (D) scenic and prop production: drafting, model-making, scenic art, painting, craftsmanship, and related areas. Repeatable one time for different alpha, each alpha can be taken one time. Pre: any course in THEA or DNCE, or production experience; or consent. (Alt. years) DA
THEA 345 Lighting I: Beginning Lighting Design (3) Basic principles of lighting design and associated technologies. Includes functions and properties of light, lighting and control equipment, working procedures, and drafting and paperwork techniques. Pre: 240 or DNCE 250, or consent. (Once a year) DA
THEA 353 Scene I: Beginning Scene Design (3) Workshop introducing basic principles and approaches of scenic design for theatre and dance, with emphasis on the creative process. Pre: a course in THEA or DNCE, production experience, or consent. (Consent required for production experience option) (Cross-listed as DNCE 353) DA
THEA 354 Introduction to Costume Construction (4) Workshop on basic principles of costume construction for theatre and dance. Professional practices, materials, and methods. (Cross-listed as DNCE 354) DA
THEA 356 Costumes I: Beginning Costume Design (3) Basic principles and approaches to costume design for theatre and dance. Visual communication methods, creative process, historical research, and organizational principles. Pre: 240, DNCE 250, or consent. (Cross-listed as DNCE 356) DA
THEA 357 Stage Makeup Workshop (3) Theory and practice: corrective and three-dimensional makeup, modeling, and the use of prosthetics. Repeatable one time. Pre: 240 or consent. DA
THEA 380 Beginning Directing (3) Basic practical course in how to direct a play. Students will direct scenes. Pre: upper division theatre majors or consent. DA
THEA 400 (Alpha) Advanced Theatre Practicum (1) Advanced workshop experience in the practical application of theatre skills. (B) acting; (C) stagecraft; (D) costume; (E) theatre management. Repeatable up to four credits per alpha. Pre: audition and performance of role in a Department of Theatre and Dance production for (B); consent for (C) and (D); theatre majors only or consent for (E). DA
THEA 411 World Theatre III: Elite and Popular (3) Historical issues in production, interplay between elite and popular forms and the impact of colonialism, 1500-1900. Required of all majors. Pre: 312 and consent. (Alt. years) DL
THEA 412 World Theatre IV: Modern (3) Primal performances in modern theatre, 1900-present. Reactions to realism and current international theatre forms. Required of all majors. Pre: 411. (Alt. years) DL
THEA 413 (Alpha) Approaches to Dramatic Texts (3) Intensive analysis and discussion of dramatic texts from a variety of authors. Understanding trends and variations in dramatic genre. Pre: (B) contemporary British and American drama; (C) political drama in the West. Pre: one of 311, 312, 411, 412, or consent. DL
THEA 414 Women in Drama and Theatre (3) The role of women and their presentation in theater from ancient Greece to the present; focus on sociopolitical status of women. Pre: 311. (Cross-listed as WS 414) DH
THEA 418 Advanced Playwriting (3) Workshop in experimental writing in dramatic form; full-length plays. Repeatable one time. Pre: 318. DA
THEA 420 (Alpha) Intermediate Voice for the Actor (3) Training in proper and dynamic use of voice for the actor. (B) Western traditions; (C) Asian traditions. Repeatable two times. Pre: 220 or consent. DA
THEA 421 Acting V: Musical Comedy (3) Training in skills required to perform in musicals. Students present scenes from musical comedies for criticism and review. Repeatable two times with consent. Pre: one of 321, 322, MUS 231B, or consent; and/or audition. (Cross-listed as MUS 421) DA
THEA 422 Acting VI: Period Styles (3) Theoretical and practical application of historical styles and techniques of acting in comedy and tragedy; emphasis on performance styles in Elizabethan, Restoration, and 18th-century drama. Repeatable one time with consent. Pre: 321 and 322, or consent. DA
THEA 424 Hawaiian Acting Workshop (3) Training in skills and techniques for selected traditional Hawaiian performance forms and Hawaiian medium theatre. Emphasis on movement and vocal technique. Repeatable one time. Pre: 222 or consent. (Alt. years) DA
THEA 426 South/Southeast Asian Acting Workshop (3) Training in skills and techniques for selected traditional South and Southeast Asian theatre forms. Emphasis on movement and vocal techniques. Repeatable one time. Pre: 222 or consent. (Alt. years) DA
THEA 427 Chinese Acting Workshop (V) Training in skills and techniques for selected traditional Chinese theatre forms. Emphasis on movement and vocal technique. Repeatable six credits. Pre: 222 or consent. (Alt. years) DA
THEA 428 Japanese Acting Workshop (V) Training in skills and techniques for selected traditional Japanese theatre forms. Emphasis on movement and vocal technique. Repeatable to six credits. Pre: 222 or consent. (Alt. years) DA
THEA 429 Contemporary Performance Practices (3) Focus on individual training in the skills and techniques of contemporary experimental theatre including acting, directing, and self-scripting. Repeatable two times. Pre: one of 222, 318, 380, or consent. DA
THEA 433 Movement Workshop (V) Special workshops in movement relating to specific department at the core of the student’s area of movement taught in 437 and 438. Repeatable one time. Pre: one of 435, DNCE 435, or consent. (Alt. years) (Cross-listed as DNCE 433) DA
THEA 434 Taiji (‘Tai Chi) for Actors II (3) Intermediate-level Taijiquan (‘Tai Chi Ch’uan) movement training. Repeatable two times. Pre: 334 or consent. (Cross-listed as DNCE 434) DA
THEA 435 Movement for Actors (3) Training actors to discover experientially the sources of movement; to teach skills for analyzing movement for its mechanical, anatomical, spatial, and dynamic content; and then to apply these skills in a role. Pre: 222 or consent. (Cross-listed as DNCE 435) DA
THEA 436 Advanced Movement for Actors (3) Detailed development of material presented in 435. Focus on Barteriell fundamentals and movement analysis as it applies to the physical interpretation of theatrical roles. Pre: one of 435, DNCE 435, or consent. (Alt. years) (Cross-listed as DNCE 436) DA
THEA 437 Period Movement Styles, 1450–1650 (3) Movement styles and physicality of European societies in the Renaissance and early Baroque periods. Pre: one of 435 or DNCE 435, or one semester of a 100-level dance technique class. (Alt. years) (Cross-listed as DNCE 437) DA
THEA 438 Period Movement Styles, 1650–1800 (3) Movement styles and social deportment of the Baroque and pre-Romantic periods in Europe and the American Colonies. Pre: one of 435, DNCE 435, one semester of a 100-level dance technique

Key to symbols & abbreviations: see the first page of this section.
THEA 439 Musical Theatre Dance Forms (3) Theatrical dance forms used in 20th-century musical theatre. Pre: 100 level or above dance technique class, 421 or consent. (Alt. years) (Cross-listed as DNCE 439) DA

THEA 445 Lighting II: Intermediate Lighting Design (3) Workshop in intermediate techniques and skills of lighting design; storytelling, analysis, research, investigation, questioning, problem solving and the execution of successful design projects. Pre: 345. DA

THEA 446 Topics in Costume Construction (3) Costume construction techniques, both Western and Asian, for theatre and dance. Topic rotation includes: structure and armatures, patterning, tailoring, dyeing, fabric modification, millinery and crafts, within the context of current industry practice. Repeatable two times. Pre: 354, 356, or consent. (Cross-listed as DNCE 446) DA

THEA 447 Stage Management (3) Business, organization and management for theatre and dance productions. Pre: junior standing or consent.

THEA 448 Introduction to Computer-Aided Design for the Theatre (3) Basic concepts and techniques of computer-aided design. Lecture/workshop covers language and commands common to most CAD packages with a focus on drafting specific to theatre. A laptop with Vectorworks installed is required. Pre: 345 or consent. (Once a year) DA

THEA 453 Scenic II: Intermediate Scenic Design (3) Workshop in advanced techniques and skills of scenic design; model making, rendering, and drafting. Pre: 355 or consent. DA

THEA 456 Costumes II: Intermediate Costume Design (3) Advanced costume design for theatre and dance. Introduction to collaborative process in costume. Intensive work on rendering skills, applied to various design problems. Cost analysis and organizational techniques. Pre: 356 or consent. (Cross-listed as DNCE 456) DA

THEA 462 Drama and Theatre of Oceania (3) Survey of the contemporary drama and theatre of Oceania that combines island and Western traditions. Includes Papua New Guinea, Hawai’i, Fiji, Samoa, Australia, New Zealand. Pre: 101 or ANTH 350, or consent. (Cross-listed as PACS 462) DH

THEA 464 Drama and Theatre of Southeast Asia and India (3) Court, folk, popular traditions, and the manner of their production. Pre: consent. DH

THEA 465 Montreal Theatre of China (3) Yuan, southern, spoken drama; Beijing opera and the manner of their production. Pre: consent.

THEA 466 Drama and Theatre of Japan (3) No, Kyogen, Bunraku, Kabuki, modern drama, and the manner of their production. Pre: junior standing. DH

THEA 468 Drama and Theatre of Hawai’i (3) Survey of indigenous theatre forms of Hawai’i, Native Hawaiian, and other ethnic playwrights, and contemporary multicultural landscape of drama and theatre. Hawai’i’s junior standing or higher. Pre: 101 (with a minimum grade of B), or consent. (Alt. years: fall) DH

THEA 470 Creative Drama (3) Dramatic activities for young people. For teachers, group workers, recreation workers dealing with children. Supervised field activities. Pre: junior standing or consent. DA

THEA 474 Theatre for Young Audiences (3) Theories and principles of formal theatre for young audiences. Study and role practice in the selection, direction, and production of plays. Pre: junior standing or higher, or consent. DA

THEA 475 Puppetry for Young Children (3) Methods of constructing puppets and stages with and for children. Sale and role practice in the creative arts. Fieldwork. Pre: junior standing or consent. DA

THEA 476 Puppetry (3) History and scope of puppetry. Construction and presentation of puppets for adult and child audiences. Repeatable one time. Pre: junior standing or above, or consent. DA

THEA 477 Masks and Giant Puppets (3) History, construction, and performance techniques for masks and large puppets. For teachers, recreation directors, and others who work with 10 to 18 year olds. Pre: junior standing or above, or consent. DA

THEA 478 Hula Ki’i: Hawaiian Puppetry and Image Dancing (3) History, techniques, construction, and performance of Hawaiian puppetry and traditional image dancing. Repeatable one time. Junior standing or higher. DA

THEA 480 Intermediate Directing (3) Workshop; students direct one-act plays. Repeatable one time with consent. Pre: 380 and consent. (Alt. years) DA

THEA 490 Experimental Theatre Studio (3) Working collectively, students research, write, design, develop, and perform a full-length production. Repeatable two times. Pre: 6 credits above the 200 level in acting, directing, playwriting, dancing; or consent.

THEA 492 (Alpha) Topics in Drama and Theatre (3) Biquong (Ch’i Kung) for actors; (C) Shakespeare in performance. Skills and techniques for performing in Shakespearean productions; (D) topics in European theatre. Repeatable one time per topic, repeatable two times for (B), 422 or consent for (C), junior standing or consent for (D).

THEA 499 Directed Work (V) Individual projects; tutorial. Repeatable two times. Pre: consent.

THEA 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.

THEA 600 Seminar in Theatre Research (3) Bibliography and research methods; preparation for thesis and dissertation writing. Required of all graduate theatre majors.

THEA 611 Seminar in Major Dramatic Theory (3) Major theories of Western drama from Aristotle to Roland Barthes. Repeatable one time with consent. Pre: 412 or consent. (Alt. years) DA

THEA 613 History of Western Theatre II (3) Theatre as a cultural and social institution in the West, from the 18th to the present. Pre: 311, 312, 411, 412, or consent. (Alt. years) DA

THEA 614 (Alpha) Topics in Dramaturgy (3) (B) role of the dramaturg; covers history, theory, and practice; (C) dramaturgy workshop; accompanies specific Kennedy Theatre productions. Repeatable one time per alpha, Pre: consent. (Alt. years)

THEA 615 Performance Theory (3) Introduction to key texts and concepts of performance studies. Pre: consent.

THEA 616 Script Analysis (3) Study of dramatic texts in a seminar format; analysis of Western and Asian classical to post-modern plays. Pre: 312 or consent.

THEA 617 Seminar in Performance Studies (3) Special topics. Repeatable up to two times when topics change. Pre: 615 or consent. (Cross-listed as DNCE 617)


THEA 620 Advanced Voice for the Actor (3) Training in advanced vocal production techniques and portfolio preparation. Pre: 380 and consent. (Alt. years) DA

THEA 621 Acting VII: Great Roles (3) History, construction, and performance techniques for masks and large puppets. For teachers, recreation directors, and others who work with 10 to 18 year olds. Pre: junior standing or above, or consent. DA

THEA 625 Experimental Asian Acting (3) Integration of movement, vocal technique, and concepts of traditional Asian genres into the actor's repertoire. Exploration of application to contemporary Asian and non-Asian texts. Workshop format. Repeatable one time. Pre: consent.

THEA 634 Taiji Weapons for Actors (3) Advanced level Taijiquan (T’ai Chi Ch’uan) weapons training. Repeatable two times. Pre: 334 or 434, or consent.

THEA 640 Problems in Design and Production (3) Workshop dealing with special topics in lighting design, sound design, technical design, production, and related applications. Repeatable three times with consent. Pre: 343 or 445 or consent.

THEA 645 Lighting III: Advanced Lighting Design (3) Workshop dealing with special topics in theatrical lighting design and production. Repeatable two times. THEA or DNCE majors only. Pre: 445.

THEA 650 Professional Advancement in Entertainment Design (1) Directed study designed to help MFA candidates in Design acquire the tools helpful in obtaining future employment. Portfolios, resumes, and related application tools will be developed along with other necessary skills. Must be current MFA candidate in theatre. Repeatable six times. THEA majors only. Consent required.

THEA 653 Scenic III: Advanced Scenic Design (3) Workshop dealing with special topics in scenic design, related skills, and portfolio preparation. Repeatable two times with consent. Pre: 453 or consent. (Alt. years)

THEA 656 Costumes III: Advanced Costume Design (3) Workshop dealing with special topics in costume design and related skills. Repeatable one time with consent. Pre: 456 or consent.

THEA 657 Seminar in Design (3) Research, design, and discussion exploring collaborative design problems and solutions. Repeatable two times. Pre: 445, 453, 456, or consent.

THEA 660 Asian Theatre Field Research (3) Goals and methods. Interview, questionnaire, observation, and performance study as research techniques. Practical application by designing a research project. Pre: 600.

THEA 663 (Alpha) Topics in Asian Theatre (3) Comparative and cross-cultural examination. (B) origins; (C) theories and systems; (D) modern Asian drama. Repeatable one time. Pre: consent.

THEA 670 Seminar in Advanced Creative Dramatics (3) Advanced seminar in applied methods and theories of creative dramatics. Repeatable one time. (Once a year) DA

THEA 678 (Alpha) Topics in Theatre for Young Audiences (3) Creative movement/drama, puppetry, and theatre/dance; (B) production concepts. Repeatable when topics change. Pre: one of 470, 474, 475, 476, 477; DNCE 490 or consent.

THEA 680 Directing Asian Theatre (3) Directing traditional Asian theatre pieces and Western plays performed with Asian techniques; development of new performance styles based on Asian examples; directing of scenes and one-act plays. Repeatable one time with consent. Pre: directing major and one Asian theatre course, or consent.

THEA 682 Graduate Workshop in Directing (3) Direction of scenes and major one-act plays. Pre-thesis production. Repeatable one time with consent. Pre: 600 or consent.

THEA 683 Workshop in Directing Process (3) Methods class in theater production for the director. Covers organization and techniques such as rehearsal planning, scheduling, and execution. Repeatable one time.

THEA 685 Directing Western Styles (3) Students direct scenes in classic or non-realistic western theatre styles or genres. Repeatable one time with consent. Pre: 315, 415, 416, or consent.

THEA 690 Graduate Theatre Workshop (V) Practical and supervisory theatre work pertinent to professional degree objectives on productions being done in Kennedy Theatre or in other venues, by
developed translation skills. Example includes processing and extracting from various bilingual documents. Repeatable one time.

TI 412 Alpha Translation (English) Translation (3) Translation of nonfiction texts into English. Translators work with both technical and cultural material. Repeatable one time. Pre: 411, senior or graduate standing, and pass CITS screening exam. Co-requisite: 402, 414, and 452.

TI 413 Alpha Translation Skills (Second Language) (3) Language specific course. Basic techniques and procedures used in bilingual translation of nonfiction texts. Emphasis on the technical, stylistic, cultural, lexical, and terminological problems. Translation from English into student’s working languages. (K) Korean; (O) other. Repeatable one time. Pre: senior or graduate standing, and pass CITS screening exam. Co-requisite: 402, 414, and 452.

TI 414 (Alpha) Technical Translation (English) (3) Translation of nonfiction texts into English. Emphasis on the technical and cultural material. Repeatable one time. Pre: senior or graduate standing, and pass CITS screening exam. Co-requisite: 402, 414, and 452.

TI 415 Alpha Technical Translation (into Second Language) (3) Translation of nonfiction texts into a Second Language. Training process, methodology, and applied business systems. Pre: consent. Repeatable one time. Pre: a previous translation course or consent.


TI 422 Computer-Assisted Translation (3) (1 Lec, 1 1.5-hr Lab) The use of computers as aids in the translation process, publishing and technical writing. Computer aids for terminology studies and glossary building. Repeatable one time. Pre: senior or graduate standing, and pass CITS screening exam. Co-requisite: 402, 414, and 452.

TI 424 English to Japanese Translation (3) Training in techniques of translating English into Japanese. Pre: JPN 407B, C, D, or E; or consent. (Cross-listed as JPN 424)


TI 432 (Alpha) Consecutive Interpretation (3) Extensive note-taking and note-reading in a bilingual context. Focuses on the translation of numbers, acronyms, initials, and economic and financial information. (J) Japanese; (K) Korean; (M) Mandarin; (S) Spanish; (O) other. Repeatable one time. Pre: 431, senior or graduate standing, and pass CITS screening exam. Co-requisite: 402, 422, and 452.

TI 442 (Alpha) Simultaneous Interpretation (3) Simultaneous interpretation of speeches. Focus on the study of formal and conversational English, including in international meetings. (J) Japanese; (K) Korean; (M) Mandarin; (S) Spanish; (O) other. Repeatable one time. Pre: 441, senior or graduate standing, and pass CITS screening exam. Co-requisite: 402, 432, and 452.

TI 452 (Alpha) Sight Translation (3) Basic course. Focus on the ability to orally translate information from a written text. Emphasis on improving linguistic (discourse analysis) and communicative (public speaking) skills. (J) Japanese; (K) Korean; (M) Mandarin; (S) Spanish; (O) other. Repeatable one time. Pre: 451 or senior or graduate standing and pass CITS screening exam. Co-requisite for translation students: 402, 412, 414, and 422. Co-requisite for interpretation students: 402, 432, and 442.

TI 499 Directed Reading/Studies (V) Basic course. Focus on the ability to orally translate information from a written text. Emphasis on improving linguistic (discourse analysis) and communicative (public speaking) skills. (J) Japanese; (K) Korean; (M) Mandarin; (S) Spanish; (O) other. Repeatable one time.

**Travel Industry Management (TIM)**

*School of Travel Industry Management*

**Students should check with the department for grade requirements for prerequisite courses.**

**TIM 099 International Exchange Programs (V)** UH Mānoa School of Travel Industry Management majors participating in approved international exchange programs. CR/NC only.

**TIM 100 Internship 1 (J)** Introduction to travel industry. Discussion of job search strategies, TIM internship requirements, career and academic planning. CR/NC only.

**TIM 101 Introduction to Travel Industry Management (3)** Overview of travel industry and related major business components. Analysis of links between hotel, food, transportation, recreation, and other industries comprising tourism. (M) Mandarin; (S) Spanish; (O) Other. Repeatable one time.

**TIM 102 Food and World Cultures (3)** An integrated cross-cultural approach to the study of foods and cultures. Examine history, concepts, principles of cultures and cuisines, the background of food tradition including habitat, social status, religious beliefs, gender, and other environmental considerations. A-F only. FGB

**TIM 200 Internship II (2)** A minimum of four hundred hours of travel industry experience. Comprehensive report by student and performance evaluation form employer required. CR/NC only. Pre: TIM major, 100, and 101.

**TIM 300 Internship III (2)** A minimum of four hundred hours of travel industry experience. Position must be different from TIM 200 position and of a more responsible nature or in a different organization. Comprehensive report by student and performance evaluation from employer required. CR/NC only. Pre: TIM major and 200.

**TIM 301 Legal Environment of the Travel Industry (3)** Origin, development, and principles of common, statutory, constitutional, and international law relating to the travel industry. A-F only. Pre: 101. Recommended: BLAW 200.

**TIM 302 Information Systems Technology (3)** Computer applications in the travel industry; operation and evaluation of specific travel industry systems and applied business systems. Pre: 101 and ECS 101.

**TIM 308 Management of Service Enterprises (3)** Principles and philosophies of management with special emphasis on those principles and theories that are most relevant to management in service-based industries. Students may not earn credit for 303 and BUS 315. Pre: TIM 101.

**TIM 304 Principles of Travel Industry Marketing (3)** Concepts, problems, processes of marketing within the travel industry; development of marketing strategies and techniques.
strategies including product, place, promotion, and price for travel institutions. Students may not earn credit for 304 and BUS 312. Pre: 101.
TIM 305 Financial Management for the Travel Industry (3) Cash flow determination and management strategies for financial viability of hospitality ventures and expansion. Determining the financial viability of proposed and existing operations through traditional and state-of-the-art techniques. Pre: 101 and ACC 202; and (ECON 203, MATH 203, MATH 215, MATH 241, or BUS 250).
TIM 306 Human Resource Management: Travel Industry (3) Principles of human resource management applied to contemporary theories and practices in the travel industry; employee productivity, recruitment, labor relations. Pre: 101 and (COMG 151 or COMG 251).
TIM 311 Club Management (3) Introduction to club and institutional management, including operations, services, and facilities. A-F only. Pre: 101.
TIM 313 Foodservice Management (3) Critical and essential skills managing foodservice operations including principles of food safety and sanitation, procedural knowledge in front and back of the house and guest relations. A-F only. Pre: 101 and 301.
TIM 314 Hotel Management (3) Comprehensive understanding of hotel management and functional departments including front office, accounting, housekeeping, food and beverage, marketing, security and safety. Simulation of management trainee programs by hotel chains. Synthesis of concepts, tools and theories of decision-making relevant to hotel operations. A-F only. Pre: 101, 302, and 303 (with a minimum grade of C-). Pre: 302 and 303.
TIM 315 Quality Food Management (3) Explore various aspects of the quality in foodservice operations and develop strategies to measure and improve the quality. A-F only. Pre: 101 and departmental approval.
TIM 316 Events Planning and Marketing (3) Introduction to special event planning processes and techniques. Emphasis on designing, planning, marketing, management, staging events, legal compliance, risk management, financial control, and successful event evaluation. A-F only. Pre: 313 and junior standing.
TIM 319 Quantity Foods and Institutional Purchasing (4) (3 Lec, 1 3-hr Lab) Quantity food and beverage operations, menu development and costing, foodservice purchasing procedures, inventory control, procurement, transportation, legislation, Institutional foodservice sanitation, Hazard Analysis Critical Control Point and National Restaurant Association Certification. Pre: FSHN 181 and FSHN 181L, 315 or consent.
TIM 320 Introduction to Tourism Economics (3) Examines tourism from an economic perspective. Topics include: the determinants of consumer demand for travel, structure of competition among suppliers of tourism services, benefits and costs of tourism development to the host community, government’s role in the taxation, subsidy, regulation and protection of the tourism industry, tourism’s impact on the environment, and sustainable tourism development. A-F only. Pre: ECON 120 or 130 or 131; or consent. (Cross-listed as ECON 320) DS
TIM 329 Social/Cultural Issues in Tourism (3) Positive and negative impacts of tourism on society, social change, culture, residents, developing countries, and environment. Role of social planning. Pre: 101. DS
TIM 330 Geography of Global Tourism (3) Tourist landscape in relation to resources, spatial patterns of supply and demand, impacts of tourism development, and models of tourist space. Flows between major world regions. Pre: sophomore standing or higher, or consent. (Cross-listed as GEOG 326) DS
TIM 332 Travel Distribution Management (3) History, development, operations, and management of travel distribution organizations including: travel agents, tour operators and wholesalers, specialty channels, meeting planners, incentive houses, travel associations, and other destination management organizations. Evolution and economics of the distribution of travel services through distribution databases and electronic commerce. Pre: 302.
TIM 333 Hotel/Resort Facilities and Design (3) Comprehensive understanding of facilities management and design including maintenance systems, sustainable development options and design and environmental management. A-F only. Pre: 313 and 314.
TIM 350 Introduction to Tourism Transportation (3) Introduction to managerial and operational aspects related to the transportation used by tourists into or within a destination. Passenger behavior; transport infrastructure; transport networks; regulation; sustainable transport. Pre: 101.
TIM 353 Air Transportation Management (3) Marketing, management, services, and distribution of travel services used by airlines, airports, catering, and aircraft manufacturers. Pre: 101.
TIM 354 Surface Transportation Management (3) Management of surface transportation such as cars, buses, and intercity rail. Includes marketing, ownership and financing, supply chain, operations, regulation and promotion, human resources. Pre: 101.
TIM 365 Economics in Travel Industry (3) Microeconomic theory of consumer behavior and demand production cost analysis, market structure and pricing in travel companies. Economic impact of tourism. Students may not earn credit for 365 and BUS 313. Pre: either ECON 120 or ECON 130.
TIM 368 Study Tour Abroad (6-12) Study abroad instructional experience emphasizing international travel, tourism and hospitality-related topics at equivalent, accredited programs. Content varies depending on focus of instruction and instructor. Student fee is paid to a TIM or general electives with pre-approval or department. Repeatable unlimited times. Pre: consent.
TIM 369 (Alpha) Current Topics in Travel Industry Management (V) (B) resort development; (C) assets management; (D) transportation and public policy; (E) management by cultural values; (F) travel industry management; (G) hospitality management; (H) hotel management; (I) restaurant entrepreneurship and management; (K) recreation management; (M) leisure management; (N) transportation management; (O) travel industry management education; (P) travel industry management technology; (Q) meetings, incentives, conventions, and exhibition management. Pre: 304, 305 and graduating senior.
TIM 399 Directed Reading and Research (V) Reading and research into problems in hotel, restaurant, and convention operations and management. Pre: junior standing or above, a minimum cumulative GPA of 2.5 and consent of dean’s office and instructor based upon student’s written proposal of content and objectives of course program.
TIM 400 (Alpha) Internship IV (3) Requires a minimum of 150 hours of internship, a business presentation, and an analytical report synthesizing experience and related theories. A significant portion of class time is dedicated to writing instruction, which will enhance and improve students’ writing skills. Pre: executive internship; (C) community service internship. Restricted to majors. CR/NC only. Pre: 200 and consent.
TIM 402 Resort Mixed Use Development (3) Critical and essential aspects of developing and managing resort mixed use facilities. Includes multidimensional and dynamic interrelationships of site development and facilities, business mix, management structures and systems, and industry practices. A-F only. Pre: 313 or 369; and 314. Recommended: 333 and 401. (Fall only)
TIM 403 Revenue Management in Travel Industry (3) Application of revenue management theory, principles, concepts, tools, techniques, practices, and analysis to travel industry management. Focus will be on cost controls, pricing, inventory control, forecasting, financial analysis, and economic analysis. Pre: 101, ACC 202, and ECON 130.
TIM 415 Nature-Based Tourism Management (3) Principles of nature-based tourism, including a survey of impacts, objectives, planning, and management systems. Junior standing or higher. Pre: 101 or 324/GEOG 324. (Cross-listed as GEOG 325) DS
TIM 431 Strategic Management for the Travel/ Hospitality Industry (3) Strategic management in the travel/hospitality industry. Case study analysis, discussion and written reports, covering strategies, management problems and industry issues. Emphasis on writing instruction. A-F only. Pre: 301, 302, 303, 304, 305 and graduating senior.
TIM 442 Advanced Topics in Transportation (3) Advanced level of discussion in terms of transportation, including management, economics, strategy, regulation, operating performance, fleet management, and network management. Pre: 353 (undergraduate) or consent (graduate)
TIM 469 (Alpha) Advanced Topics in Travel Industry Management (V) (B) tourism planning; (C) advanced hospitality management; (D) advanced hotel management; (E) advanced restaurant management; (F) advanced tourism management; (G) advanced recreation management; (H) advanced leisure management; (I) advanced transportation; (K) advanced travel industry management education; (M) advanced travel industry management technology; (N) advanced meetings, incentives, conventions, and exhibition management; (O) advanced food and beverage management; (P) advanced human resources; (Q) advanced assets management. Repeatable five times with consent for (B), (C), (D), (E), (F), (G), (H), (I), (J), (K), (M), (N), (O); repeatable six times for (P), and (Q). A-F only for (O), (P), and (Q).
TIM 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate with consent.
TIM 601 Research Applications in Travel Industry Management (3) Literature analysis of methodologies appropriate for research in travel industry management. Survey of the literature of applied techniques and approaches including exploratory approaches. Familiarization with research design and implementation.
tation of development of research proposals. Pre: graduate standing or consent.
TIM 602 Strategic Travel Marketing (3) In-depth study of marketing principles and problems related to travel industry organizations. Emphasis on strategic marketing, revenue management, and management of the travel industry. Pre: graduate standing or consent.
TIM 603 Information Technology, E-Commerce, and Travel Industry (3) Planning, implementation, management, evaluation, and impact of information and electronic communication technologies, including e-commerce applications in the travel industry. Analysis of new information technology use as an area of research and strategic application. Pre: graduate standing or consent.
TIM 604 Managerial Accounting for Travel Industry (3) Advanced study of management accounting within travel industry: responsibility accounting, pricing decisions, concepts and application of central systems, financial planning, price level impacts, performance evaluation. Pre: graduate standing or consent.
TIM 605 Hospitality Management (3) Advanced human relations and operating issues; use of accounting, behavioral, marketing, and informational systems in managing hospitality organizations. Pre: graduate standing or consent.
TIM 606 Transportation Economics and Management (3) Advanced study of economics and management of the transportation systems serving the travel industry. Emphasis on topics such as government policy, transport economics, marketing and management, and the relationships between transportation systems and tourism development. Pre: graduate standing or consent.
TIM 607 Global Tourism Analysis (3) International trade theory and regional analysis methodologies applied to tourism and the service industry, including travel balance account, inter-regional transactions flow, economic impacts, environmental economics, demand theory and forecasting. Pre: graduate standing or consent.
TIM 640 Financial Management for the Travel Industry (3) Application of financial analysis to both the domestic and international travel industry. Pre: graduate standing or consent.
TIM 645 Tourism Field Studies (3) Integration of concepts and application of knowledge and skills from other courses to a selected field study project. Pre: two 600-level TIM courses completed and a third concurrent; or consent.
TIM 694 Professional Paper (3) Independent project or paper under faculty supervision in lieu of Plan A, TIM 700 thesis. Requires proposal approved by supervisor and graduate chair prior to registration. A-F only. Pre: three 600-level TIM courses completed or consent.
TIM 695 Seminar: Travel Industry Management Policy (3) Integration of learning through analysis of policy issues, trends, and problems in the travel industry. A-F only. Pre: three 600-level TIM courses completed or consent.
TIM 699 Directed Reading (V) Independent study of approved, advanced reading with faculty supervision. Requires proposal prepared by student and approved by supervisor and graduate chair before registration. Repeatable one time.
TIM 700 Thesis Research (V) Directed reading and research in laboratory; diagnostic aspects of bacterial, parasitic, and viral infections. Repeatable unlimited times. Pre: consent.
TRMD 500 Master's Plan B/C Studies (1) Enrollment for degree completion. Repeatable unlimited times. Pre: master's Plan B or C candidate and consent.
TRMD 545 Topics in Tropical Medicine (V) Elective for fourth-year medical students for advanced study of selected topics within the field of tropical medicine and medical microbiology. Pre: fourth-year standing or MD degree. Repeatable two times. A-F only. Pre: MICR 351 or equivalent. (Spring only)
TRMD 590 Selected Topics in Tropical Medicine and Infectious Diseases (V) Elective for medical students in Tropical Medicine and Infectious Diseases. Repeatable up to 12 credits. Medical students only. CR/NC only. Pre: consent.
TRMD 599 (Alpha) Selected Topics in Infectious Diseases (1) Selected topics for medical students: B: infectious diseases; C: parasitology; D: epidemiology; E: immunology. MD majors only. CR/NC only. Pre: MDED 554 or consent. (Fall only)
TRMD 599 (Alpha) Selected Research Topics in Infectious Diseases (1) Research topics for medical students: B: infectious diseases; C: parasitology; D: epidemiology; E: immunology. MD majors only. CR/NC only. Pre: MDED 554 or consent. (Fall only)
TRMD 601 Tropical Medicine Journal Club (1) Students gain experience in the presentation and discussion of topics of current interest in the fields of tropical medicine and infectious diseases. Repeatable unlimited times. A-F only. Pre: consent.
TRMD 602 Laboratory Methods in Tropical Medicine (2) Microbiologic methods and techniques for identification of pathogenic viruses, bacterial, and parasitic organisms including specimen handling, culturing, and laboratory procedures. Repeatable one time. Graduate standing only. A-F only. (Fall only)
TRMD 603 Infectious Disease Microbiology I: Medical Parasitology (3) Epidemiology, pathogenesis, immunobiology, and diagnostic aspects of human parasitic infections; host-parasite interactions; public health aspects of parasitic infections. Repeatable one time. A-F only. Pre: MICR 351 or equivalent. (Fall only)
TRMD 604 Concepts in Immunology and Immunopathogenesis (2) Immunological concepts relating to infectious diseases and host pathogen interactions. Repeatable one time. A-F only. Pre: MICR 461 (or equivalent) or consent. (Cross-listed as PH 655)
TRMD 605 Infectious Disease Micro II (3) Will cover different families of animal viruses of importance to human diseases. The genome, structure, replication, as well as host immune responses, epidemiology, clinical features, and animal models will be presented. Repeatable one time. A-F only. Pre: MICR 351 and MICR 351. or equivalent. (Cross-listed as PH 667)
TRMD 606 Tropical Medicine Laboratory Rotations (V) Practical experience in use of equipment and procedures in infectious disease and immunology research; intracutaneous testing; and research in tropical medicine. Repeatable unlimited times. Pre: 604 (or concurrent), or consent.
TRMD 607 Neurovirology (1) Seminar on neuroinvasive viruses giving basics of viruses causing nervous system disease and discussing recent advances in the research field of neurovirology. Pre: MICR 351 or equivalent; or consent. (Fall only)
TRMD 608 Infectious Disease Microbiology III (3) Basic structure, physiology, epidemiology, and genetics of pathogenic bacteria as well as the host response to these organisms. Correlation of these characteristics to disease pathogenesis and animal models. A-F only. Pre: 604 or consent. (Spring only)
TRMD 609 Advances In Medical Immunology (3) Presentations/discussions of current literature concerning recent advances in immunology relevant to disease and to disease processes. Pre: consent. (Alt. years: spring)
TRMD 610 Infection and Immunity (3) Combined lecture/discussion of interactions of pathogens with the innate and acquired immune systems. Topics will include the role of the pathogen in the host, detection, inflammation in disease pathogenesis, pathogen immune evasion, and neuroimmunology. Repeatable two times. A-F only. Pre: MICR 450 or consent. (Alt. years: fall)
TRMD 650 Ecological Epidemiology (2) Applications of population biology, pathogen/host life history, and population genetics to infectious disease epidemiology, including micro- and macroparasites, and implications of diseases and prevention of strategies. A-F only. Pre: 604 or equivalent, and 605 or consent, or consent. (Alt. years: spring)
TRMD 652 Advanced Genetics and Evolution of Infectious Diseases (2) An evolutionary perspective to examine the interaction and responses of infectious agents and the immune system. Topics will include natural selection, life history evolution, population genetics of pathogens and hosts, and anti-microbial resistance. A-F only. Pre: 604 (or concurrent) and 605 (or concurrent) or consent. (Alt. years: spring)
TRMD 654 Advances in HIV/AIDS (2) History of HIV, basic biology and virology, epidemiology, HIV pathogenesis and immunity, clinical features, and co-morbidities. Treatment and prevention of HIV/AIDS, including research methods, and strategies. Pre: consent. A-F only. Pre: 604 or concurrent) and 605 (or concurrent) or consent. (Fall only)
TRMD 655 Principles of Biostatistics (3) Lecture/lab to equip students in the biomedical sciences. Methodologies to include t-test, correlation, linear regression, analysis of variance, contingency table analysis, logistic regression, survival analysis, and non-parametrics. A-F only. Pre: algebra and one semester of calculus or consent. (Fall semester)
TRMD 671 Advanced Medical Parasitology (2) Consideration of ultrastructure, physiology, biochemistry, in-vitro cultivation and host-parasite relationship of parasites of medical importance. A-F only. Pre: consent. (Alt. years: fall)
TRMD 672 Advanced Medical Virology (2) In-depth study of the major groups of viruses pathogenic for human; virus replication, host range, pathogenesis, immunology, and epidemiology. Pre: 605 or equivalent, or consent. (Alt. years: fall)
TRMD 673 Advanced Medical Bacteriology (2) Role of bacteria in infectious diseases, with emphasis on clinical aspects and identification of etiological agents. Pre: 605 or equivalent. (Alt. years: fall)
TRMD 675 Epidemiology of Tropical Infectious Diseases (3) Epidemiology of infectious diseases as it relates to tropical medicine. Lecture/semiminar format. A-F only. Pre: TRMD graduate standing or consent. (Spring only)
TRMD 690 Seminar in Tropical Medicine and Public Health (1) Weekly discussion and reports on current advances in tropical medicine and public health. Repeatable unlimited times. (Cross-listed as PH 755)
TRMD 695 Plan B Master's Project (3) Independent study for students working on a Plan B master's project. A grade of Satisfactory (S) is assigned when the project is satisfactorily completed. Pre: graduate standing in TRMD.


TRMD 700 Thesis Research (V) Research for master's thesis. Approval of department faculty required. Repeatable unlimited times.

TRMD 705 Special Topics in Tropical Medicine (V) Advanced instruction in frontiers of tropical medicine and public health. Repeatable unlimited times. Pre: A-F only.

TRMD 800 Dissertation Research (V) Research for doctoral thesis. Approval of department faculty is required. Repeatable unlimited times.

Tropical Plant and Soil Sciences (TPSS)

College of Tropical Agriculture and Human Resources

TPSS 120 (Alpha) Plants for People (1) The origins and modern ceremonial traditions; culture; food and nutritional properties. Processing of a variety of tropical horticultural plants are presented, with tasting sessions and optional field trips. Topics will rotate among (B) beverage crops (e.g., coffee, tea, chocolate, kava, fruit juices); (C) herbs, spices, and flavoring (selection of examples to be determined); (D) tropical fruits (assortment offered depends on availability during semester); (E) ornamental plants (flowers, houseplants, popular landscape plants, bonsai, ethnic ornamentals). Does not count towards TPSS major. Pre: consent. DB

TPSS 200 Tropical Crop Science (3) Relation of plants, nutrients, and environment, cultural practices to tropical crop production. Pre: consent.

TPSS 220 Organic Food Crop Production (2) Combined lecture/lab on the theory and practice of certified organic food production. Field visits to organic farms/markets included. Open to nonmajors. (Fall only) DB

TPSS 300 Tropical Production Systems (4) (3 Lec, 1 3-hr Lab) Comparisons and contrasts of crop management systems, techniques, and technologies in protected and open field production of tropical crops. Pre: consent.

TPSS 304 Fundamentals of Soil Science (4) (3 Lec, 1 3-hr Lab) Origin, development, properties, management of tropical soils; classification of Hawaiian soils. A-F only. Minimum prequisite grade of C or concurrent with 210, 161L, or consent. (Fall only) (Cross-listed as NREM 304) DP DY

TPSS 311 Current Topics in Plant Science (1) Undergraduate seminar that provides the presentation and discussion of topics of current relevance to students preparing for careers in applied plant sciences. Oral focus designation. A-F only. Pre: 200 or NREM 220; or consent. (Alt. years) DS

TPSS 322 Marketing Perishable Products (3) Problems, pricing, costs, forecasts, regulations affecting marketing: proposed improvements. Pre: ECON 130, NREM 220; or consent. (Alt. years) DS

TPSS 336 Renewable Energy and Society (3) Combined lecture/discussion regarding the ability of renewable energy technologies to meet local, national, and global energy demands and their potential impacts on the environment and society. Pre: consent.

TPSS 341 Accounting and Financial Analysis (3) Principles and methods of agricultural accounting. Preparing and interpreting financial statements. Sources and costs of credit, capital budgeting, tax management, estate planning. Repeatable one time. A-F only. Pre: ECON 130 or NREM 220, or consent. (Cross-listed as NREM 341) DS

TPSS 350 Tropical Landscape Practices (3) (2 Lec, 1 3-hr Lab) Concepts and techniques of landscape installation and management in the tropics. Pre: 200 and 369; or consent. DB

TPSS 351 Enterprise Management (3) Introductions of practical concepts and methods used in business management. Introduce broad range of business strategies. Understand the design and play. Facilitate student's practice of analytical and critical thinking through case studies. (Cross-listed as NREM 351) DB

TPSS 352 Landscape Architecture History, Theory, and Practice (3) Surveying the development of landscape architecture as an art form from Mesopotamia to present. Exploring the theory, profession and art of landscape architecture in the world by physical, social, economic, political, and cultural environment. (Alt. years) (Cross-listed as ARCH 352) DH

TPSS 353 Landscape Graphics Studio (4) Basic skills of landscape graphic communication through a creative process model. Learning free hand and technical drawing techniques to creative effective landscape graphics. Pre: consent. (Alt. years) (Cross-listed as ARCH 353) DA

TPSS 354 Tropical Landscape Planting Design Studio (4) Students will develop basic skills of residential landscape design in order to clearly articulate the ability to think, analyze, and extend a physical solution in the proper scale. Repeatable one time. A-F only. (Alt. years) (Cross-listed as ARCH 354) DH

TPSS 364 Horticultural Practices (2) (1 Lec, 1 3-hr Lab) Techniques of culture and management of horticulture crops. Pre: 200 or (concurrent) DB

TPSS 369 Ornamental Plant Materials (3) (2 Lec, 1 3-hr Lab) Identification, origin, use, and cultural requirement of trees, shrubs, vines, and groundcovers used in Hawaiian landscapes. Pre: 200 or DB

TPSS 371 Genomics: Theory to Application (3) Fundamentals of genetic theory using biotechnological procedures to examine control of plant and animal breeding as practical application. Repeatable one time. A-F only. (Cross-listed as PEPS 371) DB

TPSS 401 Vegetable Crop Production (3) (2 Lec, 1 3-hr Lab) Crop biology, requirements, and production techniques for commercial vegetable production in Hawai'i will be stressed. Pre: 300 or DB

TPSS 402 Flower and Foliage Crop Production (4) Biology and production of cut flowers, blooming potted plants, foliage plants under field and protected cultivation in Hawai'i and globally. Pre: 300 or DB

TPSS 403 Tropical Fruit Production (3) (2 Lec, 1 3-hr Lab) Botanical aspects and horticultural management practices of selected tropical and subtropical fruit crops, with emphasis on small scale commercial production in Hawai'i. Pre: 300 or DB

TPSS 405 Turfgrass Management (4) (3 Lec, 1 3-hr Lab) Adaptability and selection, establishment, and cultural practices of grasses for various types of turf. Pre: 200 or DB

TPSS 409 Cultural Biogeography (3) Co-evolution of human societies and plants over the last 10,000 years. Foraging, farming and urban societies economies; spread and modification of selected plants; issues of preservation of genetic resources and traditional plant knowledge. The form and function of gardens. Pre: junior standing or higher, or consent. (Cross-listed as GEOG 409) DS

TPSS 416 Introduction to Social, Ethical and Political Issues Associated with Biotechnology (3) Introduces concepts of biotechnology, fundamental issues associated with use of this technology, with special emphasis on agricultural biotechnology. A-F only. Pre: BIOL 171 or NREM 210, or consent. (Alt. years) DB

TPSS 418 Turfgrass Pest Management (4) Provides students with knowledge and real world experience on common turfgrass pests and management strategies in Hawai'i; with emphasis on integrated pest management. Common cool-season turfgrass and pest management are also discussed. Repeatable unlimited times but credit earned one time only. A-F only. Pre: PEPS 210 or consent. (Fall only) (Cross-listed as PEPS 418) DB

TPSS 420 Plant Propagation (3) (2 Lec, 1 3-hr Lab) Theoretical and applied aspects of seed and vegetative propagation technology involving fruits, flowers, vegetables, and landscape plants. Pre: 200 or DB

TPSS 421 Tropical Seed Science (3) (2 Lec, 1 3-hr Lab) Principles of seed biology, seed production, and genetic modification. Hawai'i's seed industry and biotechnology. A-F only. Pre: consent. DB

TPSS 429 Spreadsheet Modeling for Business and Economic Analysis (3) Quantitative decision-making methods for effective agribusiness management in resource allocation, scheduling, logistics, risk analysis, inventory, and forecasting. Emphasis on problem identification, model formulation and solution, and interpretation and presentation of results. Pre: ECON 130 or NREM 220, and ECON 321 or NREM 310; or consent. (Once a year) (Cross-listed as ECON 429 and NREM 429) DS

TPSS 430 Nursery Management (3) (2 Lec, 1 3-hr Lab) Principles of production practices and operations of commercial nurseries in Hawai'i. Pre: 200 and 364; or consent. DB

TPSS 435 Environmental Soil Chemistry (3) Study of soil chemical processes such as weathering, adsorption, precipitation, ion exchange; causes of soil acidity, alkalinity, and salinity; reactions between soils and fertilizers, pesticides, or heavy metals. Management strategies to minimize environmental contamination by nitrate, phosphate, and trace elements such as As, Pb, and Se. A-F only. Pre: 304 or consent. (Fall only) DB

TPSS 440 Tissue Culture/Transformation (3) (2 Lec, 1 3-hr Lab) Application of tissue culture for plant scientists; study of genetically engineered plants; principles of plant tissue culture. A-F only. Pre: consent. Recommended: BOT 410 DB

TPSS 450 Nutrient Management of Soils and Plants (4) (3 Lec, 1 3-hr Lab) Principles and mechanisms governing the availability of plant nutrients in soil and nutrient management for enhanced plant productivity and maintenance for environmental and soil quality. Pre: 304 and CHEM 161, or consent. DB

TPSS 453 Plant Breeding and Genetics (3) (2 Lec, 1 3-hr Lab) Unique aspects of plant genetics and applications to crop improvement, with emphasis on breeding plants in Hawai'i. Pre: BIOL 375 (or concurrent) or consent. DB

TPSS 460 Soil Plant Environment (3) (2 Lec, 1 3-hr Lab) Bio-physical processes in the soil-plant-atmosphere continuum that influence crop growth and development. Methods to estimate the impact of soil and climate on crop performance. Use of crop models to simulate effects of planting date, plant spacing and density, fertilizer rates, rainfall or irrigation, and daily weather on crop yield and farm income. Pre: 304 and either PHYS 151 or PHYS 170, or consent. DB

TPSS 463 Irrigation and Water Management (3) Basic soil-water-plant relationships, irrigation water requirements, irrigation efficiencies, different methods of irrigation, planning, design and management of an irrigation system, fertigation and impact of irrigation on soil and water quality. Pre: NREM 203 (or equivalent) and NREM 304 (or equivalent) or consent. (Alt. years) (Cross-listed as NREM 463) DB

TPSS 470 Plant Physiology (3) Integration of form and function from cellular to whole plant levels in processes from seed germination, through photosynthesis, growth, and development, to flowering and senescence. A-F only. Pre: BIOL 171 or consent. DB

TPSS 470L Principles of Plant Physiology Lab (1) (3 3-hr Lab) Principles of experimentation in plant physiology, includes individual investigations. A-F only. Pre: consent. DY
TPSS 473 Post-Harvest Physiology (3) Comparative physiological and biochemical processes during growth, maturation, ripening, and senescence in fruits, vegetables, and flowers related to changes in quality and storage life of tropical commodities. Emphasized: A-F only. Pre: 200, BIOL 171, or BOT 201; CHEM 152; or consent. DB

TPSS 475 Plant Nutrient Diagnosis in the Tropics (3) Designed for students to identify essential nutrients required for plant growth and diagnose nutrient dis orders in plants; and propose environmentally sound solutions to correct disorders. Pre: 304/NREM 304 (or concurrent) and BIOL 172. (Cross-listed as NREM 475)

TPSS 481 Weed Science (3) (2 Lec, 1 3-hr Lab) Weed classification, identification, adaptations for weediness: principles of weed control; properties, uses, and action of herbicides. Lab: pesticide application equipment and techniques, no-till farming, greenhouse and field experimentation. A-F only. Pre: 200 and CHEM 152, or consent. (Fall only) (Cross-listed as PEP 481) DB

TPSS 491 Experimental Topics (V) Study and discussion of significant topics, problems. Offered by visiting faculty and/or for extension programs. Repeatable. Pre: consent.

TPSS 492 Internship (1) Integration and application of academic knowledge and critical skills emphasizing professional development. Placement with an approved cooperating supervisor/employer. Pre: consent.

TPSS 492L Internship Experience (3) Internship field experience for TPSS majors. TPSS majors only. A-F only. Pre: 200 (or concurrent) or consent.

TPSS 499 Directed Studies (V) Supervised individual instruction in field laboratory and library. Repeatable up to six credits. CR/NC only. Pre: 364 or consent.

TPSS 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate. Repeatable for credit. Pre: 300, 301, and 400. DB

TPSS 601 Crop Modeling (3) (2 Lec, 1 3-hr Lab) Principles of modeling crop growth and development, model types, techniques, simulation. Modeling influence of climate/environment on phenology, growth, development of horticultural crops. Pre: BOT 470 and NREM 310, or consent.

TPSS 603 Experimental Design (4) (3 Lec, 1 3-hr Lab) Design of experiments and variance analyses in biological and agricultural research. Pre: graduate standing or consent. Recommended: ZOOL 632. (Cross-listed as ANSC 603)

TPSS 604 Advanced Soil Microbiology (4) (3 Lec, 1 3-hr Lab) Study of biochemical and biogeochemical transformations mediated by soil microorganisms, emphasis on processes important to plant growth productivity and environmental quality. Pre: 304 and MICR 351, or consent.

TPSS 610 Nutrition of Tropical Crops (3) (1 2-hr Lec, 1 3-hr Lab) Mineral nutrition of plants in relation to plant metabolism, mechanisms of ion uptake, long-distance transport of solutes, and interactions at the root-soil interface. Special emphasis on problems associated with tropical crops. Pre: 450 and 470, or consent. (Alt. years)

TPSS 614 Molecular Genetics of Crops (3) (2 Lec, 1 3-hr Lab) Molecular techniques of molecular genetics to crop improvement. Pre: 453 and MBBE 402, or consent.

TPSS 615 Quantitative Genetics (3) Applications of quantitative genetics to crop and animal improvement. Pre: 453 and 4603, or consent.

TPSS 640 Advanced Soil Chemistry (3) (2 Lec, 1 3-hr Lab) Physical-chemical processes in soils and soil solutions, with emphasis on ionic equilibria, mineral stability, organic complexation, and surface sorption of major plant nutrients and heavy metals. A-F only. Pre: 435 and CHEM 351, or consent.

TPSS 650 Soil Plant Nutrient Relations (4) (2 Lec, 2 3-hr Lab) Soil-plant interactions, emphasis on characteristics of tropical soils and plants influencing nutrient uptake by plants. Diagnostic methods to identify nutrient deficiencies and element toxicity. Pre: 450 or consent.

TPSS 652 Information Research Skills (1) Examines use of libraries and information technology for scholarly investigation in support of scientific research; provides experience utilizing and critically evaluating a variety of print and electronic sources in basic and applied sciences. Pre: consent. (Cross-listed as ANSC 652, FSHN 652, and NREM 652)

TPSS 654 Communications in the Sciences (1) (3-hr Lab) Combined Laboratory course for improving communication abilities in the sciences and engineering. Presentations to lay audiences are emphasized. Hands-on experience in techniques and media. Pre: consent. Repeatable two times.

TPSS 657 Grant Writing for Graduate Students (1) Combined lecture/discussion on grants and grant writing. Designed to introduce graduate students to grants and grant proposal writing through lectures, class discussion, writing assignments, and peer review. Open to graduate students only; others with consent. (Cross-listed as ANSC 657 and FSHN 657)

TPSS 664 Orchidology (3) (2 Lec, 1 3-hr Lab) Classification, culture, cytogenetics, breeding of orchids. Pre: consent. Repeatable up to six credits. CR/NC only.

TPSS 667 Graduate Seminar (1) Presentation of research reports; reviews of current literature in plant and soil sciences. Repeatable four times. Pre: gradutation or standing.

TPSS 670 Agrarian Systems Analysis (3) Comparative analysis of processes of inter-disciplinary and participatory approaches to sustainable development and rural resource management including farming systems research and extension (FSR/Ext), agroeconomic analysis (AEA), participatory action research (PAR), and rapid rural appraisal (RRA). Repeatable one time. Pre: consent.

TPSS 674 Plant Growth and Development (3) Contemporary literature is used as the basis for understanding the growth and development of plants. Principles of growth and development. Aspects covered include vegetative and reproductive development, seed dormancy, senescence, abscission, and relevant biochemical and molecular processes. Pre: 470 and MBBE 402, or consent.

TPSS 680 Geospatial Analysis of Natural Resource Data (3) The application of geostatistics to estimate spatial dependence to improve soil and regional sampling; provide insight into underlying soil patterns and boundaries; and provide a basis for providing quantitative scaling up of point measurements to fields, regions, and watersheds. State-space modeling will also be included. A-F only. Pre: GEOG 388 or ZOOL 631; or consent. (Cross-listed as GEOL 680)

TPSS 695 Plan B Master’s Project (3) Independent study for students working on a Plan B master’s project. A grade of Satisfactory (S) is assigned when the project is satisfactorily completed. A-F only. Pre: graduate standing in TPSS program.

TPSS 699 Directed Research (V) In-depth study of specialized problems. Repeatable unlimited times. CR/NC only. Pre: consent.

TPSS 700 Thesis Research (V) Repeatable unlimited times. CR/NC only. Pre: consent.

TPSS 711 Special Topics (V) Specialized topics from various areas of plant and soil research such as experimental techniques, growth regulation, morphogenesis, genetics and breeding, and nutrition of tropical crops. A-F only. Pre: consent.

TPSS 800 Dissertation Research (V) Repeatable unlimited times. CR/NC only. Pre: consent.

PLANT 101 Sustainable Crops (3) How do we plan and design cities to meet our long-term economic and environmental needs? Students will learn how sustainability applies to key urban issues like energy, transportation, land, and food. A-F only.

PLAN 310 Introduction to Planning (3) Perspectives on planning: planning tools and methods; specific Hawaii‘i planning research problems from a multidisciplinary approach. Pre: junior standing or consent. (Cross-listed as DS 413)

PLAN 399 Directed Reading in Planning (V) Independent research on topics in urban and regional planning. Pre: 310.

PLAN 412 Environmental Impact Assessment (3) Introduction to analytical methods for identifying, measuring, and quantifying impacts of development or interventions in resource, human-environment, and other geographic systems. Pre: junior standing or higher, or consent. (Alt. years) (Cross-listed as GEOG 412)

PLAN 414 Building Community Resilience (3) Intended to give you a good understanding of the natural forces behind the most common natural disasters, and the human actions that reduce or increase vulnerability to natural disasters. A-F only. Pre: consent. (Spring only) (Cross-listed as GEOG 414)

PLAN 421 Urban Geography (3) Origins, functions, and internal structure of cities. Problems of urban settlement, growth, decay, adaptation, and planning in different geographical settings. Pre: GEOG 388 or 380, or consent. (Cross-listed as GEOG 421)

PLAN 473 GIS for Community Planning (3) Exploration of geographic information systems (GIS) area analysis techniques for spatial information management in community planning. Students will learn the basic concepts and principles, of the GIS skills of GIS through lectures, discussions, and labs. Repeatable one time. Pre: junior standing or higher. (Fall only)

PLAN 495 Housing, Land, and Community (3) Analyzes availability for housing, particularly affordable housing, and its relationship to use of land and building of community. Examines public policies impacting housing, land use, and community development and ways they can be improved. Pre: 310 or consent. DS

PLAN 500 Master’s Plan B/C Studies (1)

PLAN 600 Public Policy and Planning Theory (3) Designed to a) impart a historic and comparative perspective on the evolution of urban and regional planning in public policy; b) explore the spatial and behavioral dimensions of policy; c) provide an understanding of the theoretical basis of public and political policy formulation and implementation. A-F only. Repeatable two times.

PLAN 601 Planning Methods (3) Basic methods in planning including problem definition, research design, survey research, statistics and computer applications. Repeatable one time. Pre: one of ECON 321, GEOG 403, or SOC 476.

PLAN 602 Advanced Planning Theory (3) Advanced planning theory for PhD students (others by petition) to prepare for careers in planning education and/or high level professional practice. Covers key contemporary planning policy issues and themes from the perspective of values, explanations of the real world, policy alternatives and implementation. Students must have passed 600 or equivalent (by petition) with a B or better. Repeatable one time. Pre: 600 or consent.


PLAN 604 Qualitative Methods in Planning (3) Provides a general introduction to qualitative research methods for planning and planning research. Includes data collection methods (focus groups, interviews, ethnography, participant observation, and participatory action research) and various analytic
methods and approaches. Graduate standing only. Pr: 601.

PLAN 605 Planning Models (3) Allocation, decision, derivation, and forecasting models used in the analysis of demographic, economic, land use, and transportation phenomena in urban and regional planning. Repeatable one time. Pr: one of ECON 321, GEOG 380, or SOC 476; or consent.

PLAN 606 Comparative Planning Histories (3) Provides students with an overview of the history of urban and regional planning in the U.S., Europe, and Asia, and on the role that planning has played in shaping contemporary urban settlements. Graduate standing only. A-F only.

PLAN 607 Introduction to Public Policy (3) Perspectives on policy analysis; basic approaches to the study of public policy, political economy, and policy evaluation. (Cross-listed as PLS 670)

PLAN 608 Politics and Development: China (3) Consists of three parts: key theories for socialist transition as basis for seminar discussion, policy evolution to illustrate the radical changes, and emerging and prominent current development and practice. Pr: one of 600, POLS 308, or POLS 341; or consent. (Cross-listed as ASAN 608 and POLS 645C)

COMMUNITY PLANNING AND SOCIAL POLICY

PLAN 610 Community Planning and Social Policy (3) Social processes and conditions: consequences of social policies experienced by different groups; community social plans and programs organized by various kinds of agencies and organizations. Repeatable one time. Pr: after admission to candidacy in MURP. A-F only.

PLAN 615 Housing (3) Housing delivery systems as an aspect of urban and regional planning. Pr: 610 or consent.

PLAN 616 Community-Based Planning (3) Planning and programmatic aspects of community-based development projects. East-West and local planning perspectives on participatory development and international communities. Pr: 600 (or concurrent).


PLAN 619 Multiculturalism in Planning and Policy (3) Graduate seminar focuses on issues of power and planning in diverse multicultural societies. Differences in backgrounds, languages, privilege, preferences and values are often expressed in planning and policy controversies such as affirmative action and land use planning. Will examine these issues and explore theories of governance in a multicultural setting. Pr: 600 or consent.

ENVIRONMENTAL PLANNING AND RESOURCE MANAGEMENT

PLAN 620 Environmental Planning and Policy (3) Survey of the political, institutional, economic, and scientific aspects of environmental planning and policies. Repeatable one time. A-F only. Pr: 600 (or concurrent) or consent.

PLAN 622 Environmental Impact Assessment (3) Theory and procedures of environmental impact assessment. Policy and planning frameworks supporting environmental assessment in the U.S. and abroad. Cumulative environmental effects and strategic environmental assessment. Pr: graduate standing. (Cross-listed as GEOG 622) DS

PLAN 624 Environmental Valuation and Policy (3) Build valuation skills to assess best use, conservation, and policies relating to environmental amenities. Provides an overview of policy solutions to environmental degradation used by planners. Pr: 600 and 603.

PLAN 625 Climate Change, Energy and Food Security in the Asia/Pacific Region (3) Analysis of planning responses to human-induced climate change and related environmental problems. Part of the Asia/Pacific Initiative taught in collaboration with universities throughout the region via video-conferencing. Pr: 620 (or concurrent) or consent.

PLAN 626 Topics in Resource Management (3) Issues, analytical techniques and management strategies for different resource systems including land, water, energy, coastal resources, forests and fisheries. Course focus varies from year to year. Repeatable one time. A-F only. Pr: consent.

PLAN 627 Negotiation and Mediation in Planning (3) Applicability and limitations of selected approaches; role of planners; impact on planning. Pr: 600 or consent.

PLAN 628 Urban Environmental Problems (3) Seminar that examines environmental problems associated with urbanization. Reviews strategic approaches and collaboration among key actors to address such problems. Pr: 600 or consent.

PLAN 629 Urban and Regional Planning in Asia and the Pacific (3) Key issues and policies in urban planning, rural-urban relations, rural regional planning, and frontier settlement in Asia and the Pacific. Repeatable one time. Pr: 603 or consent. (Cross-listed as GEOG 630)

PLAN 632 Planning in Hawai’i and Pacific Islands (3) Urban and regional planning in island settings. Experiences in Hawai’i, Polynesia, Melanesia, and Micronesia. Pr: 600 or consent.

PLAN 633 Globalization and Urban Policy (3) Urbanization and urban policies in the Asia and Pacific region with focus on the international dimension of national and local spatial restructuring. Pr: 630 or consent.

PLAN 634 Shelter and Services in Asia (3) Examines government and non-government organizations’ responses to urban and rural shelter issues and services in Asia. Pr: 630 (or concurrent) or consent.

PLAN 636 Culture and Urban Form in Asia (3) Cultural and urban forms in contemporary times. Examination of tradition and modernity in urban space; spatial expression of state and society; perception and utilization of urban design, evolution of urban form in selected Asian capitals. Pr: 310, 600, or ASAN 312. (Cross-listed as ASAN 636)

PLAN 637 Environment and Development (3) Theories and practice of development; how changing development paradigms shape different ideas concerning the role and management of natural resources; emerging debates in development and environment in post-modern era. (Cross-listed as GEOG 637)

PLAN 638 Asian Development and Urbanization (3) Economic growth and sustainability in development, impacts of globalization and sustainability on development planning and policy formation, selected case studies of Asia-Pacific development. Pr: 630 or ASAN 600) with a grade of B or above. (Cross-listed as ASAN 638 and GEOG 638)

PLAN 639 Community-based Natural Resource Management (3) Concepts and theories of community, resource access, and governance. Practical challenges to CBNRM in contemporary political economy. Pr: graduate standing. (Cross-listed as GEOG 639)

LAND USE AND INFRASTRUCTURE PLANNING

PLAN 640 Land Use Policies and Programs (3) Land use policy public planning in urban and regional settings. Growth management and land use guidance systems. A-F only. Pr: 600 and 601, or consent.

PLAN 641 Neighborhood and Community Land Use Planning (3) Land use planning for urban neighborhoods and small towns. Theory and practice of neighborhood planning. Neighborhood and community dynamics, reinvestment, and stabilization. Pr: 640 (or concurrent) or consent.

PLAN 642 Planning Urban Infrastructure (3) Capital budgeting, project planning, and financing for large-scale urban infrastructure. Pr: 600, 601; and consent.

PLAN 643 Project Planning and Management (3) Examines project management in theory and practice and the roles and responsibilities of the project manager. Focuses on planning, organizing, the controlling of the efforts of projects. A-F only. Pr: consent.

PLAN 645 Land Use Planning (3) Issues and methods of urban land use planning practice and planning; A-F only. Pr: 640 or consent.

PLAN 647 Urban and Regional Planning for Sustainability (3) Focus on methods, conceptual models, accounting frameworks, appropriate technologies, and indicators of planning for sustainability. Central and local policies, plans, and best practices in various countries and settings will be covered. Repeatable one time. Graduate students only, A-F only. (Alt. years)

PLAN 648 Urban Transportation Policy and Planning (3) Theory and practice of urban transportation planning in developed and developing countries with an emphasis on the U.S., Asia, and Pacific region. A-F only. Pr: 600 and 601, or consent.

PLAN 649 Asian Cities: Historical Evolution of Urban Form (3) Examination of the impact of economy, society, and history on urban form; case study of the evolution of Asian urban form. Pr: 310 or ASAN 312. (Once a year) (Cross-listed as ASAN 649)

RESEARCH AND PLANNING METHODS


PLAN 652 Policy Implementation and Program Evaluation (3) Implementation and evaluation in public policy analysis; philosophical and methodological issues; impact evaluation; use of evaluation research in program implementation. Pr: 601 or consent.

PLAN 654 Applied Geographic Information System: Public Policy and Spatial Analysis (3) Use of advanced and specialized analytical methods and models in urban and regional planning. Uses GIS software and builds upon 601. Skills are useful applied to planning, economic development, and environmental planning and resource management. Repeatable one time. Pr: graduate standing or consent.

PLAN 655 Planning Research Methods (3) Advanced methods and deterministic and stochastic models used in urban and regional planning. Pr: 601, 605; or consent.

PLAN 661 Collaboration Between Sectors (3) Examine theories and practices of multiscalar collaboration (public, private, nonprofit). The use of collaboration as an alternative way of solving public problems.

PLAN 670 Interdisciplinary Seminar in Disaster Management and Humanitarian Assistance (3) Provides background for understanding the diverse components of this dynamic and expanding field. Pr: graduate standing or consent. (Once a year)

PLAN 671 Disaster Management: Understanding the Nature of Hazards (3) Combined lecture/discussion in disaster management focusing on the scientific understanding of the forces and processes underlying natural hazards; and human attempts to respond to these through mitigation and planning activities. Pr: 670 or consent. (Once a year) (Cross-listed as GG 604)

PLAN 672 Humanitarian Assistance Principles, Practices and Politics (3) Combined lecture/discussion aimed at understanding the theoretical basis and working structure of humanitarian assistance programs and international responses to natural and human-induced disasters. Pr: 670 or consent. (Once a year)

PLAN 673 Information Systems for Disaster Management and Humanitarian Assistance (3) Combined lecture/laboratory in disaster management focusing on essential methodological and practical issues that are involved in spatial analyses using GIS and other information technologies to inform deci-
sion making related to natural hazards, disasters, and human attempts to respond to these through mitigation and planning activities. Pre: 670 or consent. (Once a year)

PLAN 674 Disaster Recovery: Theory and Practice (3) How do communities recover from disaster? Provides students with an overview of recovery theory and an understanding of how planners, policy makers, and ordinary citizens rebuild communities, cities, and nations following catastrophic events. A-F only. Graduate standing only.

PLAN 675 Preservation: Theory and Practice (3) History and philosophy of historic preservation movement. Analysis of values and assumptions, methodologies and tactics, implications for society and public policy. (Cross-listed as AMST 675 and ARCH 628)

PLAN 676 Recording Historic and Cultural Resources (3) Techniques in recording and evaluation of historic buildings and other resources, with an emphasis on field recordings and state and federal registration procedures. Pre: graduate standing or consent. (Cross-listed as AMST 676 and ANTH 676)

PLAN 677 Historic Preservation Planning (3) Local-level historic preservation, with an emphasis on historic districts, design guidelines, regulatory controls, and community consensus-building. (Cross-listed as AMST 677)

PLAN 678 Site Planning (3) Fundamental principles that guide planning, including planning and design determinants of the site taking into account its regional context, site-specific characteristics and applicable codes, ordinances, and standards. PLAN majors only. (Fall only)

PLAN 680 Land Use Management and Control (V) Survey course of public land use management. (Cross-listed as LAW 580)

PLAN 699 Directed Reading and Research (V) Repeatable unlimited times. Pre: consent of instructor and department. PLAN 700 Thesis Research (V) Limited to MURP students under Plan A. Repeatable unlimited times. Pre: consent.

PLAN 721 Homeland Security: Terrorism (3) Combined lecture/discussion in disaster management and humanitarian assistance track focusing on developing a multidisciplinary understanding of international terrorism and anti-terrorism planning and response. Pre: 670 or consent. (Once a year)

SEMINARS AND PRACTICE

PLAN 740 Seminar in Planning Theory (3) Special topics in theory, history, analysis. Pre: 600 or consent. PLAN 741 Seminar in Planning Practice (3) Project planning, programming, and similar topics. Pre: 600 and 601, or consent.

PLAN 751 Planning Practicum (6) Team experience in defining and addressing a current planning problem; identification, substantive review, research design, preparation and presentation of analysis. Topic varies. Limited to 10 students. Pre: 600, 601, and consent.

PLAN 752 Directed Project (V) Individual project in analysis, plan preparation and evaluation, and policy/program evaluation. Pre: 600, 601; and consent.

PLAN 754 Urban Design Studio (6) Group experience in defining urban and regional design problems and potential solutions, and in evaluating alternatives, formulating strategies for implementation. Pre: 640 or consent.


Urdú (URDU)

College of Languages, Linguistics and Literature

URDU 205 Reading and Writing in Urdú (1) Introduces students to the Nastālīq (Urdū) script, alphabets, their various forms, and combination rules. Reading and writing is emphasized. A-F only. Pre: HNDI 102 or consent. Co-requisite: HNDI 201 or consent. (Fall only)

VIETNAMESE (VIET)

College of Languages, Linguistics and Literature

VIET 101 Elementary Vietnamese (4) Listening, speaking, reading, writing. Structural points introduced inductively. Meets one hour daily, Monday-Friday; four out of five hours devoted to directed drill and practice. HSL

VIET 102 Elementary Vietnamese (4) Continuation of 101. Pre: 101 or consent. HSL

VIET 201 Intermediate Vietnamese (4) Continuation of 102. After completion, students should be able to use all major sentence patterns to produce sounds, combinations of sounds, tones, and intonation and have some understanding of Vietnamese culture. Meets one hour daily, Monday–Friday. Pre: 102 or equivalent. HSL

VIET 202 Intermediate Vietnamese (4) Continuation of 201. Pre: 201 or consent. HSL

VIET 301 Third-Level Vietnamese (3) Continuation of 300. HSL

VIET 401 Fourth-Level Vietnamese (3) Continuation of 302. Emphasis on increased proficiency and cultural understanding through interaction with Vietnamese media, including newspapers, radio, film, etc. Pre: 202 or equivalent.

VIET 402 Fourth-Level Vietnamese (3) Continuation of 302. Pre: 302 or consent.

VIET 461 Introduction to Vietnamese Literature (3) Selected readings; emphasis on analysis. Modern literature. Pre: 402 or consent. DL

VIET 699 Directed Reading/Research (V) Repeatable unlimited times. Pre: consent.

Women’s Studies (WS)

College of Social Sciences

WS 151 Introduction to Women’s Studies (3) Introduction to feminist interdisciplinary analysis from global and critical perspectives; relationships between women and men from Asia-Pacific, Hawaiian, and other cultures, with a focus on gender, race, class, and sexual dynamics; exploration of women’s negotiations with institutional dynamics. DS

WS 151A Introduction to Women’s Studies (3) Introduction to feminist interdisciplinary analysis from global and critical perspectives; relationships between women and men from Asia-Pacific, Hawaiian, and other cultures. Focus on gender, race, class, sexual dynamics, and women’s negotiations with institutional dynamics. Honors students only. A-F only. Pre: departmental approval. DS

WS 175 History of Gender, Sex, and Sexuality in Global Perspectives to 1500 CE (3) Explores how gender, sex, and sexuality become key elements in human society from prehistory to 1500 CE. Examines ancient world civilizations from multiple perspectives stressing issues and forces still influential today. A-F only. (Fall only) FGA

WS 176 History of Gender, Sex and Sexuality in Global Perspective, 1500 CE to the Present (3) Explores how gender, sex, and sexuality become key elements in human society from 1500 CE to present. Examines world cultures from multiple perspectives, stressing issues and forces of continuing influence. A-F only. FGB

WS 200 Culture, Gender, and Appearance (3) Social construction of gender with culture and its visual expression through appearance. Analysis of role, identity, conformity, and deviance in human appearance. Open to nonmajors. (Cross-listed as FDM 200) DS

WS 202 Psychology of Gender (3) Survey of topics in psychology relevant to women’s lives: socialization of gender, mental health, violence against women, achievement motivation, lifespan issues, domestic violence. A-F only. Pre: 151 or PSY 100. (Cross-listed as PSY 202) DS

WS 230 Gender and Sport (3) Explores the influence of gender in sport from cultural, psychosocial and political perspectives. Examines women’s and men’s role as participants, spectators, and employees of sport and sports organizations. A-F only. Pre: one DS course.

WS 245 Women Writers of World Literature (3) Major women writers of world literature examined in context of female literary tradition. Pre: one of ENG 100A, 101, or ELI 100; or consent. DL

WS 257 Sexual Identity in Literature (3) Selected themes in major works of various cultures, periods. Requires a minimum of 3,000 words of writing. Pre: one of ENG 100A, 101, or ELI 100. DL

WS 304 Women, War, and the Military (3) The military as it includes and excludes women as soldiers, nurses, wives, prostitutes, and victims. Women and war: economics, feminism, war, and peace. Pre: one of 151, 362, 375 or SOC 362; or consent.

WS 305 Women and Health (3) Explores current issues in the conceptualization and delivery of health care for women. Pre: 151 or 362, or SOC 100 or any 200-level SOC course. Pre: ANTH 110; or consent. (Cross-listed as SOC 305) DS

WS 306 Indigenous Women’s Health (3) Examines issues of indigenous women’s health pre and post colonial in Hawai’i, Asia, and the Pacific region. Pre: 151 or 362, or SOC 100 or any 200-level SOC course. Pre: ANTH 110; or consent.

WS 315 Sex and Gender (3) Cross-cultural theories and perceptions of sexual difference; linkage between biology and cultural constructions of gender; relationship of gender ideology to women’s status. Pre: ANTH 115 or (concurrent). (Cross-listed as ANTH 315) DS

WS 318 Women and Social Policy (3) Social and economic policies affecting women in families, education, social services, government, health care, the economy; public policy implementation and development; policy impact on women’s health, pre and post colonial. Pre: 151 or any 200- or 300-level course, or SOC 100 or any 200-level SOC course; or consent. (Cross-listed as SOC 318) DS

WS 339 South Asian Minorities Culture and Politics (3) Historical and contemporary experiences of South Asian migrants in North America, Pacific, Caribbean, and/or African diaspora; causes and patterns of migration, inter-ethnic relations policies; role of race, gender, culture in community, identity formation. A-F only. Pre: one ES or WS course in the 100, 200 or 300 level; or consent. (Once a year) (Cross-listed as ES 339) DS

WS 345 20th-Century Literature by Women (3) Twentieth-century women writers and their works; novels, short stories, poems, autobiographies. Interrelationships of gender and literature. Pre: one of 151, 175, 176, and 245; or consent. DL

WS 346 20th-Century Chinese Women Writers (3) A survey and critical examination of contemporary Chinese women writers from China, Taiwan, and Hong Kong. Traces a genealogy of women’s writing from the early 1920s up until now through novels, poetry, drama, and film. Pre: one DH or DL course, or consent. (Cross-listed as ASIAN 364 and EALL 364) DL

WS 350 Sex Differences in the Life Cycle (3) Human sex differences, their biological basis and significance; genetic, hormonal, and behavioral determinants of sexual differentiation; biology of gender, sexuality, menopause, and aging. Pre: one semester of biological sciences. (Cross-listed as BIOL 350) DB
WS 351 Women, Ideas, and Society (3) Status of women in American society today in light of the cultural, historical, and philosophical forces that have produced it. Pre: HIST 151 and HIST 152; or consent.

WS 356 Women and Religion (3) Examining roles of, and attitudes toward, women in major religious traditions through autobiographies, films, and primary texts. Pre: 151 or ANTH 152 or REL 150. (Cross-listed as ANTH 356 DH)

WS 360 Pacific/Asian Women in Hawai‘i (3) Adaptive strategies of Hawaiian, Chinese, Japanese, Korean, Filipino, Samoan, and Southeast Asian women in Hawai‘i; feminist anthropological and historical analysis. Pre: any ANTH, SOC, or WS course. (Cross-listed as ANTH 360 and REL 350 DH)

WS 361 Seminar: Women and International Development (3) Topics: Women’s role, status, work and treatment in the Third World; economic development, changing work/family roles, agriculture and business, improvement/deterioration in gender equity across the Third World global feminization of poverty. Open to nonmajors. Pre: A 100 level economics course or any women’s studies course; or consent. (Cross-listed as ECON 361) DS

WS 362 Sociology of Gender (3) Effect of sex and gender roles (both traditional and nontraditional) on attitudes and behavior within the family and educational, economic, and governmental systems. Recommended for WS course. Pre: 151 or any 200- or 300-level WS course, or SOC 100 or any 200-level SOC course; or consent. (Cross-listed as SOC 362) DS

WS 367 Sustainability, Technoscience, and Social Justice (3) Examines politics of sustainability and technoscience with an explicit attention to social justice and power relations in society. A-F only. Pre: at least one course in WS. (Fall only) DS

WS 375 Women and the Media (3) Media portrayal of women: role of the media in reproducing gender inequality. Women as producers and consumers of media. Feminist alternatives to mainstream media. Pre: one of 151, 362, SOC 362. DS

WS 381 Gender, Sexuality and Literature (3) Basic concepts and representative texts for the study of literary constructions of gender and sexuality. Pre: one ENG DL course or consent. (Cross-listed as ENG 382) DL

WS 384 Women and Politics (3) Women’s role in political institutions and processes in the U.S. and other countries; female and male approaches to power; feminist political goals and actions. Pre: 151 (or concurrent) or 362 (or concurrent) or any 100 level POLS course; or consent. (Cross-listed as POLS 384) DS

WS 390 Gender and Race in U.S. Society (3) Historical and sociological studies of race and gender in U.S. society; grassroots feminist and racial/justice activism on the continent and in Hawai‘i. A-F only. Pre: 151 or ES 101 or junior standing. (Cross-listed as ES 390) DS

WS 392 Sexualities (3) Multi-disciplinary course draws from psychology, sociology, biology, history, cultural anthropology, film, and feminist, gay, and queer studies to explore human sexualities with emphasis on the U.S., Hawai‘i and the Asia-Pacific regions. A-F only. Pre: one of 151, 202, 351 or 350; or consent. (Cross-listed as POLS 392) DS

WS 399 Directed Reading (V) Pre: consent.

WS 400 Food, Body, and Women: Analysis of Biopolitics (3) Explores how food, body, and other "matter of life" are embodied in biopolitics from the feminist perspectives. A-F only. Pre: 151 or three credits of upper division WS courses; or consent. (Spring only) DS

WS 410 Gender and Politics in U.S.-Okinawa Relations (3) Examines gender in Okinawa in relation to historical dynamics in the Asia-Pacific region with attention to issues such as militarism and violence, colonialism and memory, and tourism and commodification of indigenous culture. A-F only. Pre: 151 or consent. (Cross-listed as ASAN 410)

WS 414 Women in Drama and Theater (3) The role of women and their representation in the theater from ancient Greece to the present; focus on the sociopolitical status of women. Pre: THEA 311 or consent. (Cross-listed as THEA 311) DS

WS 418 Women and Work (3) Gender and racial division of labor nationally and internationally; racial and gender differentials in wages, training, working conditions and unemployment; historical trends and future directions. Pre: one 300-level WS or PHIL course, or SOC 300; or consent. (Cross-listed as PHIL 418 and SOC 418) DS

WS 419 Feminist Issues in Philosophy (3) Examination of basic feminist issues in philosophy, and of responses to them. Pre: any course 200 or above in PHIL or WS, or consent. (Cross-listed as PHIL 419) DH

WS 424 Gender, Sexuality, and Cyberspace (3) Students learn how gender and sexuality are constructed online and produce a website to post their articles on gender and sexuality in cyberspace. A-F only. DH

WS 430 Seminar in the Biology of Women (3) Embryological, anatomical, and physiological development of female, male, neural, and behavioral determinants of female sexual behavior; psychobiology of pregnancy, ovulation, and menopause. Pre: 350 or BIOL 172 or BIOL 350, or consent. (Cross-listed as BIOL 430) DS

WS 434 Women and Madness (3) Interdisciplinary critical examination of the relationship between gender and mental health. Psychological research, feminist theory, autobiography, literature, and cinema. Pre: one of 202, 245, PSY 202; or consent. DS

WS 435 Women and Crime (3) Women’s relations with the criminal justice system; types of women’s offenses; responses to women’s crime; women as victims; women as workers in the criminal justice system. Pre: recommended to WS course. Pre: 151 or any 200- or 300-level WS course, or SOC 300; or consent. (Cross-listed as SOC 435) DS

WS 436 Gender, Justice and Law (3) Exploration of landmark U.S. Supreme Court cases related to sex and gender. Topics may include sex discrimination, sexual orientation discrimination, privacy, and reproductive freedom. A-F only. Pre: one of 151, 175, 176, 202, 360, 381, or consent. (Cross-listed as AMST 436 and POLS 436) DS

WS 437 Gender and Violence (3) Interdisciplinary course will examine effects of gender and violence on its correlates with ethnicity, class, sexual- ity, nation, and empire. Repeatable one time. A-F only. Pre: one of 151, 202, 360, 361, 439, 460, 462, or consent. DS

WS 438 Gender and Environmental Philosophy (3) Interdisciplinary approach to women’s perspectives and roles on ecological and environmental issues; critical analysis of eco-feminism as a social and political movement; cross-cultural comparison about gender and sexuality in cyberspace. A-F only. DH

WS 440 Seminar in the Biology of Men (3) Embryological, anatomical, and physiological development of male, neural, and behavioral determinants of male sexual behavior; psychobiology of sperm production, ovulation, and menopause. Pre: 350 or BIOL 172 or BIOL 350, or consent. (Cross-listed as BIOL 440) DS

WS 446 Gender Violence Over the Lifecycle (3) Examines the problem of violence, particularly sexual violence, over the life cycle. Offers gendered perspectives on activities aimed at prevention and treatment of violence, and cross cultural perspectives. Pre: 151 or any 200- or 300-level WS course, SOC 300; or consent. (Cross-listed as SOC 446) DS

WS 452 Marriage and Family: Feminist Perspective (3) Sex role socialization, motherhood, work- family intersections. Alternative structures in U.S. and other countries. Recommended: at least one WS course. Pre: 151 or any 200- or 300-level WS course, or SOC 300; or consent. (Cross-listed as SOC 452) DS

WS 453 Gender Issues in Education (3) Examination of current and historical issues in education and how they are impacted upon by gender, with particular reference to gender as it intersects with ethnicity and class, locally and globally. Pre: 151 or consent. (Cross-listed as EDUC 453 and EDEF 453) DS

WS 456 Politics of Men and Masculinity in U.S. Culture (3) Examines American understandings of man, manhood, and masculinity, at the intersection of gender, race, class, and sexuality in the context of American nation and empire building in the 19th and 20th centuries. A-F only. Pre: one of 151, 175, 176, or 202; or consent. DS

WS 460 Feminism, Nation and Empire (3) Examines feminist movements in the U.S. and 20th century by exploring how U.S. racism, nationalism and imperialism have provided the context from which feminism emerged. A-F only. Pre: 151, 360; or consent. DS

WS 468 Asian Women (3) History, culture, and contemporary reality of Asian women in Asia and the U.S. Includes critical analysis of American feminist methodology and theory. Pre: 360, 361, or 439 or AMST 310; AMST 318, AMST 373, AMST 455, or POLS 339; or consent. (Cross-listed as AMST 438 and POLS 372) DS

WS 463 Gender Issues in Asian Society (3) Construction of gender identities in contemporary Asia. How these interface with other aspects of social difference and inequality (class, religion, ethnicity). Pre: any WS course or ASAN 201 or ASAN 202, or consent. (Cross-listed as ASAN 463) DS

WS 465 Science, Sex, and Reproduction (3) Explores anthropological critical analysis of approaches to reproductive health and fertility, particularly in developing countries. Examines sex and reproduction as sites of intervention from public health, development, and biomedical specialists, while also considering local strategies. A-F only. Junior standing or higher. Pre: 151 or ANTH 152 or ANTH 425. (Alt. years: Fall) (Cross-listed as ANTH 465) DS

WS 481 Women and Film (3) Exploration of film as a philosophical and artistic form in the context of gender, race, and sexuality. Pre: one of 151, 175, 176, and THEA 201; or consent. DH

WS 483 Studies in Literature and Sexuality (3) Intensive study of selected problems and issues in the construction and representation of sexuality and gender in specific genres, social and cultural contexts, thematie or figurative clusters. Repeatable one time. Pre: ENG 320 and one other 300-level ENG course; or consent. (Cross-listed as ENG 483) DL

WS 492 Women and Revolution (3) Conditions under which women’s activism and participation in protest and revolutionary movements developed in the 19th- and 20th-centuries. Cross-cultural comparisons. (Cross-listed as ASAN 492 and HIST 492) DH

WS 495 Selected Topics (3) Problems and issues for reading and research: feminist theory, criticism, affirmative action, etc. Pre: any WS course in appropriate area. DS
Zoology (ZOOL)

College of Natural Sciences
All courses required in BS and BA degrees and minor require a minimum grade of C (not C-) or better.

ZOOL 101 Principles of Zoology (3) Structure, development, physiology, reproduction, evolution, behavior, and ecology of animals. DB

ZOOL 101L Principles of Zoology Laboratory (1) Laboratory to accompany 101. Pre: 101 (or concurrent). DY

ZOOL 200 Marine Biology (2) Biology and ecology of marine plants and animals; coral reefs, the deep sea, rocky shores, marine mammals, fisheries, aquaculture, pollution, and conservation of marine resources. DB

ZOOL 200L Marine Biology Lab (1) (3 hr Lab) Laboratory, field trips to accompany 200. Pre: 200 (or concurrent). DY

ZOOL 306 Ethology (2) Introduction to animal and human ethology and sociobiology; emphasis on social and interspecific behavior, its causes and adaptive significance. Lab optional. Pre: 101 and 101L with C grade (non-science majors), or BIOL 265 with C grade (life science majors); or consent. DB

ZOOL 306L Ethology Lab (1) (3 hr Lab) Application of methodology and analysis, films, and projects. Pre: 306 (or concurrent). DY

ZOOL 320 Vertebrate Zoology (3) Introduction to the evolution and systematics of vertebrates, with emphasis on comparative morphology, physiology, and ecology. Pre: BIOL 265. Co-requisite: 320L. DB

ZOOL 320L Vertebrate Zoology Lab (2) (3 hr Lab) Laboratory to accompany 320. Pre: BIOL 172 and BIOL 172L. Co-requisite: 320L. DY

ZOOL 340 Parasitology (2) Animal parasites of man and domestic and wild animals; systematics, comparative morphology, life history, pathology, treatment, control. Pre: BIOL 275, DB

ZOOL 340L Parasitology Lab (2) (3 hr Lab) Laboratory to accompany 340. Pre: 340 (or concurrent) and BIOL 275. DY

ZOOL 399 Directed Study (V) Pre: written consent.

ZOOL 410 Corals and Coral Reefs (3) The biogeography, evolution, ecology, and physiology of corals and coral reefs, and the application of this information to the management of coral reefs. Emphasis will be placed on processes such as dispersal, the evolution and operation of mutualisms, calcification, reproduction, and the maintenance of diversity. Pre: BIOL 300, 301, and AMST 401 (or concurrent). DB

ZOOL 416 Histology (3) Functional microanatomy of the animal body, emphasizing vertebrates. Oriented toward pre-professional students. Pre: BIOL 275. Recommended: BIOL 407. DB


ZOOL 417 Microtechnique (3) (2 Lec, 2-3 hr Lab) Preparation of tissues fixed in acetone or alcohol for microscopic examination; introduction to cytological and histochemical techniques. Pre: BIOL 275 or consent. DB


ZOOL 420L Developmental Biology Lab (2) (2-3 hr Labs) Analysis of animal development by experimental methods and observation, using live animals. Pre: 420 (or concurrent) and BIOL 275, or consent. Recommended: BIOL 407. DY


ZOOL 430L Animal Physiology Lab (2) (2-3 hr Lab) Laboratory investigation of function of organs, tissues, and cells, especially in vertebrates. Nerve and muscle physiology, circulation, membrane transport, respiration, excretion. Pre: BIOL 275. Co-requisite: 430L. DY

ZOOL 432 Comparative Physiology (3) Physiological and behavioral mechanisms of organ systems; often integrative principles from study of adaptation to diverse environments. Pre: BIOL 171 and 172, and MBBE 402 (or concurrent) or BIOL 441 (or concurrent); or consent. DB

ZOOL 439 Animal Ecology (3) Principles and theories; examples from current experimental and analytical literature. For students in biological sciences. Pre: BIOL 265 and MATH 205 or MATH 215 or MATH 241; or consent. DB

ZOOL 439L Animal Ecology Lab (2) (1-4 hr Lab) Introduction to methodology, experience in characterizing populations and communities. Pre: BIOL 265. DY

ZOOL 442 Introduction to Neuroscience (3) Nerve cells, their signaling capabilities and the developmental organization of nervous systems, both interneurons and axon projection, integration, behavioral command and learning; insights from on-going research using molecular, genetic, biophysical, and imaging methods. Pre: BIOL 275 or consent (Spring only).

ZOOL 450 Natural History of Hawaiian Islands (3) (2 Lec, 1-1 hr Lab) Geography, geology, climate, biotic environment of Pacific Basin and Hawaiian Islands; endemic and evolution in terrestrial and marine biota. Pre: one semester of biological sciences at college level. (Cross-listed as BOT 450) DB

ZOOL 460 Avian Biology (3) Broad coverage of the morphology, physiology, ecology, behavior, and evolution of birds, emphasizing the relationship of birds to general theory in biology. Pre: BIOL 265. DB

ZOOL 465 Systematic Ichthyology (3) Systematics and evolution of fishes; early fishes, fossil fishes, cartilaginous fishes, elasmobranch fishes, bony fishes, zoogeography, evolution in extreme environments. Pre: BIOL 265 and 465L (or concurrent). DB

ZOOL 465L Systematic Ichthyology Lab (1) (2-3 hr Lab) Overview of the major orders and families of fishes of the world; introduction to local Hawaiian fishes; coverage of basic fish identification to field and laboratory techniques in fish research. Pre: BIOL 265 and 465L (or concurrent). DY

ZOOL 466 Fisheries Science (3) General characteristics of fisheries; harvesting methods; principles and techniques to derive data and analyze fish populations. Field trips: Pre: one of the following: 410, 465, 470, 608, or 620; or consent. DB

ZOOL 467 Ecology of Fishes (3) Reproduction, early life history, age and growth, feeding, niche specificity, competitive interactions, communities, and evolutionary mechanisms. Pre: 465 or consent. DB

ZOOL 470 Limnology (2) Biology, physics, chemistry of lakes, streams, estuaries. Pre: BIOL 172 or consent. Co-requisite: 470L. DB

ZOOL 470L Limnology Lab (1) (3 hr Lab) Experimental and descriptive field projects on the biology, chemistry, hydrology, and physics of lakes, streams, and estuaries. Pre: BIOL 172 or consent. Co-requisite: 470L. DY


ZOOL 475L Biology of the Invertebrates Lab (2) (3 hr Lab) Pre: BIOL 172 and CHEM 161, or consent. Co-requisite: 475L. DY
ZOOL 480 Evolutionary Biology (3) Process of evolution: genetic basis, natural selection, population genetics, speciation, the fossil record. Pre: BIOL 265. Recommended: a BIOL or ZOOL course at 300 or 400 level. DB

ZOOL 485 Biogeography (3) Distribution of plants and animals and processes that cause, maintain, and modify them. Approach is synthetic and dynamic. Pre: BIOL 172. DB

ZOOL 490 (Alpha) Seminar in Zoology (1) Reports on research, reviews of literature, or research experience. Required of students majoring in zoology or entomology. (B) general zoology; (D) animal behavior; (E) ecology; (F) physiology; (G) developmental biology; (H) marine biology. Repeatable 2 times per alpha, credits earned for 3 credits only. Pre: 306 or equivalent or consent for (D).

ZOOL 492 Teaching Internship (1) Teaching internship in zoology. Required of ZOOL BS degree students. ZOOL BS majors only. CR/NC only. Pre: laboratory in an upper division ZOOL course.

ZOOL 499 Directed Reading or Research (V) Performance of a laboratory, field or library research project under the direction of a faculty advisor. Preparation of a proposal and written final report required. Limited to zoology majors. Pre: 500.

ZOOL 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.

ZOOL 606 Principles of Animal Behavior (2) Critical review of theories of ethology, sociobiology; social and interspecific behavior, communication, and evolutionary theory. Lab optional. Pre: graduate standing.

ZOOL 606L Principles of Animal Behavior Lab (1) (1 3-hr Lab) Group or individual research projects depending on interest of students. Pre: 606 (or concurrent).

ZOOL 608 Fish Behavior and Sensory Biology (2) Lectures, readings, and presentations on animal behavior and sensory systems and behavior of fish. A-F only. Pre: 306, 430, 465, 606; or consent. Co-requisite: 608L. (Alt. years)

ZOOL 608L Fish Behavior and Sensory Biology Laboratory (1) Laboratory study of fish sensory systems and behavior. A-F only. Pre: 306, 430, 465, 606; or consent. Co-requisite: 608L. (Alt. years)

ZOOL 610 Topics in Development and Reproductive Biology (V) Discussion and survey of literature on specific topics; some field and lab work may be required. Repeatable three times.

ZOOL 619 Seminar on Science Teaching (2) Effective teaching methods, organization of course, laboratory exercises; development and evaluation of examinations; computers and audio-visual aids. Open to graduate students in various science disciplines. Repeatable one time. (Cross-listed as NSCI 619)

ZOOL 620 Marine Ecology (3) Principles of ecology of marine biota and environment. Pre: graduate standing in zoology, oceanography, or botany; or consent.

ZOOL 623 Quantitative Field Ecology (3) (1 Lec, 1 2-hr Lab, 1 Discussion) Formal quantitative approach in identifying, designing, performing, analyzing, and interpreting ecological field problems. Pre: 439, 439L, and 631; or consent. (Alt. years)

ZOOL 631 Biometry (4) (3 Lec, 1 2-hr Discussion) Basic statistical methods; design of studies; data exploration; probability; distributions; parametric and nonparametric one-sample, two-sample, multiple-sample, regression, and correlation analyses; frequency tables. Pre: MAT 215 or 216 or 241 or 251A or NREM 203 (or equivalent), or consent.

ZOOL 632 Advanced Biometry (4) (3 Lec, 1 2-hr Discussion) Multivariate statistical methods: multiple regression and correlation; multivariate analysis; general linear models; repeated measures and multivariate analysis; log-linear analysis and logistic regression. Pre: 631 or consent.

ZOOL 642 Cellular Neurophysiology (3) Biophysical and membrane mechanisms of conduction, synaptic transmission, and other electrical responses of nerve cells. Pre: consent. (Alt. years: spring)

ZOOL 652 Population Biology (3) Theory and applications of population biology, behavior of population models, as revealed by analytical methods and computer simulation; application to population problems such as endangered species; discussion of classical and current literature in population biology. Pre: one of the following: 439, 467, 620, 623, BOT 453, BOT 454, BOT 456, NREM 680, PEPS 671; or consent. (Cross-listed as BOT 652)

ZOOL 690 Conservation Biology (3) Theories and concepts of ecology, evolution and genetics for conservation of biological diversity. Topics will include restoration ecology, management planning, laws and policies, biological invasions. Pre: BIOL 375 and either 480 or BOT 462; and either 439, 467, 620, 623, BOT 453, 454, 456, or 492. (Cross-listed as BOT 690 and NREM 690)

ZOOL 691 (Alpha) Seminar in Zoology (1) Reports on research or reviews of literature. Graduate students required to take this or one topics course (710–719) per year. (B) general zoology; (C) zoology literature; (D) animal behavior; (E) ecology; (F) animal physiology; (G) development biology; (H) marine biology. Repeatable five times.

ZOOL 699 Directed Research (V) Directed research and reading in various fields of zoology. Repeatable unlimited times.

ZOOL 700 Thesis Research (V) Repeatable unlimited times.

ZOOL 710 Topics in Biometry (V) Selected advanced topics in experimental design or data analysis for biologists. Repeatable unlimited times. Pre: 631 and 632, or consent.

ZOOL 712 Topics in Nerve/Muscle Physiology (V) Advanced treatment of selected topics under current active investigation. Repeatable unlimited times.

ZOOL 739 Topics in Animal Behavior (V) Lecture-discussion of selected topics. Repeatable three times. Pre: consent.

ZOOL 740 Topics in Animal Physiology (V) Selected problems in environmental physiology, electro-physiology, or neurophysiology. Basic concepts and measurements of function at the organismic or cellular level. Repeatable three times.

ZOOL 750 Topics in Conservation Biology (V) Advanced topics in conservation and environmental biology. Repeatable up to twelve credits. A-F only. Pre: consent. (Cross-listed as BOT 750)

ZOOL 751 Topics in Evolution and Ecology I (4) Graduate level introduction to evolution and ecology emphasizing foundational literature, modern models and inference, and major questions in evolution and ecology. Topics include population ecology, community ecology, the genetics of populations, systematics, and speciation. ZOOL majors only (or approval). (Alt. years: fall)

ZOOL 752 Topics in Evolution and Ecology II (4) Graduate level introduction to evolution and ecology emphasizing foundational literature, modern models and inference, and major questions in evolution and ecology. This is the second semester continuation of 750. ZOOL majors only (or approval). (Alt. years: spring)

ZOOL 800 Dissertation Research (V) Repeatable unlimited times.
The following facilities are an integral part of UH Mānoa. Some are designed for the purpose of research, some for research and teaching, and others to provide services to UH Mānoa students, faculty, staff, or the surrounding community. Other units under the jurisdiction of a particular college/school are listed in the appropriate college/school section.

**The Center on Aging (COA)**
BioMed T7058
1960 East-West Road
Honolulu, HI 96822
Tel: (808) 956-5001

The Center on Aging (COA) was established by the UH Board of Regents in July 1988 to stimulate and coordinate gerontological activities at UH Mānoa, to establish gerontology as an academic field at UH Mānoa, and to promote collaboration between UH and other organizations concerned with aging.

The center is involved in a number of research and training projects, including cultural variations in caregiving; help seeking; perceptions of chronic disease such as cancer, dementia, diabetes, and death and dying practices; client and caregiver satisfaction with homecare services; and coordinating specialized training and workshops in gerontology for local and international organizations.

The projects had been conducted in collaboration with a number of UH Mānoa departments including the School of Law, School of Nursing and Dental Hygiene, and the College of Social Sciences, along with community agencies such as the Executive Office on Aging, Hawaiian Islands Hospice Organization, Hawaiʻi Medical Services Association, and Papa Ola Lokahi among others.

**Assessment Office**
2500 Campus Road
Hawaii Hall 107
Honolulu, HI 96822
Tel: (808) 956-4283; (808) 956-6669
Web: manoa.hawaii.edu/assessment

The Assessment Office (AO) supports quality student learning and promotes excellence in educational practices. The AO assists in planning and implementing institutional- and program-level student learning outcome assessment. The AO provides consultation services on learning assessment-related issues to all academic programs. As the central academic assessment office on campus, the AO collaborates with the campus community to establish meaningful, manageable, and sustainable assessment.

**Institute for Astronomy**
2680 Woodlawn Drive
Honolulu, HI 96822
Tel: (808) 956-8312
Fax: (808) 988-2790
Web: www.ifa.hawaii.edu

The Institute for Astronomy (IFA) has offices and laboratories in Mānoa, on Maui, and on Hawaiʻi island, and access to all the observatories on the summit of Mauna Kea and most of those on Haleakalā. Its faculty conducts research into galaxies, cosmology, stars, the solar system, and the sun; develops new technologies for ground-based and space-based observatories; trains new astronomers through its undergraduate and graduate
programs; and educates the public through a variety of outreach projects.

Cooperating Institutions

UH Mānoa extends its research capacity and service to the state through cooperative agreements and relationships with various institutions, including Bernice P. Bishop Museum, East-West Center, Hawaiian Agricultural Research Center, Honolulu Academy of Arts, National Marine Fisheries Service, National Park Service, Nature Conservancy of Hawai‘i, Pacific International Center for High Technology Research, Tropical Fruit and Vegetable Research Laboratory, U.S. Fish and Wildlife Service, U.S. Geological Survey’s Hawaiian Volcano Observatory, several local hospitals, and numerous state agencies.

East-West Center

1601 East-West Road
Honolulu, HI 96848-1601
Tel: (808) 944-7111
Fax: (808) 944-7376
Email: ewcinfo@EastWestCenter.org
Web: www.eastwestcenter.org/

The East-West Center is an education and research organization established by the U.S. Congress in 1960 to strengthen relations and understanding among the peoples and nations of Asia, the Pacific, and the U.S. The center contributes to a peaceful, prosperous, and just Asia Pacific community by serving as a vigorous hub for cooperative research, education, and dialogue on critical issues of common concern to the Asia Pacific region and the U.S. Funding for the center comes from the U.S. government, with additional support provided by private agencies, individuals, foundations, corporations, and the governments of the region.

Diving Safety Program (SCUBA and Compressed Gas Diving)

Environmental Health and Safety Office
2040 East-West Road
Honolulu, HI 96822
Tel: (808) 956-9643
Fax: (808) 956-6952
Email: dpence@hawaii.edu
Web: www.hawaii.edu/ehso/diving

The UH Diving Safety Program (DSP) is vested with system-wide support and oversight authority for occupational diving activities of UH faculty, staff, students, and volunteers ensuring compliance with national standards. UH DSP is an organizational member of the American Academy of Underwater Sciences (AAUS) and adheres to the AAUS Standards for the Certification of Scientific Divers and Operation of Scientific Diving Programs. The governing body is the UH Diving Control Board. The diving safety officer is responsible for day-to-day execution of the program, with unit diving coordinators at HIMB, UH Hilo, and UH Maui College.

DSP provides standard scientific diver training courses on a periodic basis for UH personnel who use compressed gas diving for research or education. Advanced training in decompression techniques, mixed gas, and closed-circuit rebreathers is available as needed. A diving equipment inspection program for equipment to be used under UH jurisdiction is provided on the Mānoa and Hilo campuses. The main office at UH Mānoa also operates the Hawai’i Advanced Diving Facility.

Environmental Health and Safety Office (EHSO)
2040 East-West Road
Honolulu, HI 96822
Tel: (808) 956-8660
Fax: (808) 956-3205
Web: www.hawaii.edu/ehso

The Environmental Health and Safety Office (EHSO) works to promote a healthy and safe campus environment through the development and administration of various health and safety programs. Please visit our website for more detailed information about the programs listed below.

Diving Safety Program—supports SCUBA and compressed gas diving operations in research and educational programs and ensures that they are conducted in a safe manner. Provides training courses and offers inspections for diving equipment to be used under UH jurisdiction. Compiles reports on UH scientific diver activity and investigates accidents and complaints related to UH diving.

Environmental Protection Program—monitors university operations for compliance with federal and state rules and regulations related to storm water management, water and air pollution.

Fire Safety Program—monitors campus facilities and operations for compliance with applicable fire codes. Conducts inspections, provides training and maintains campus fire suppression equipment.

Hazardous Materials Management Program—manages the transportation, segregation, consolidation and storage of potentially hazardous chemicals. Manages the disposal of hazardous wastes generated by university operations in accordance with federal and state rules and regulations.

Occupational Health and Safety Program—assesses and monitors potential workplace hazards. Conducts inspections of on and off-campus facilities, laboratories, and operations for compliance with federal and state rules and regulations related to workplace safety and health. Responds to complaints and requests for hazard evaluations.

Radiation Safety Program—monitors the procurement, use, storage, and disposal of radioactive isotopes and radiation sources in accordance with the university’s Nuclear Regulatory Commission license.

External Affairs and University Relations

2444 Dole Street
Bachman 109H
Honolulu, HI 96822
Tel: (808) 956-8109
Fax: (808) 956-9701
Email: ur@hawaii.edu
Web: www.hawaii.edu/offices/eaur

External Affairs and University Relations (EAUR) works with the UH Mānoa advancement team and other marketing and public relations staff to promote the image of and enhance support for the UH System. Four units report to the Vice President for Student Affairs and University/Community Relations: Creative Services provides editorial, photographic, and design support for print and online publications; Governmental Relations serves as the liaison to state and federal lawmakers; Collegiate Licensing oversees use of the university’s names, identities, and marks; Public Relations and Special Events builds support among local, national, and international audiences through news media relations, public affairs, and events. Online resources available from the EAUR home page include
Newsroom, *Malamalama* magazine, the university style guide and graphics standards manual, News@UH employee newsletter, and stationery and business card procedures. Also see the UH Events Calendar at www.hawaii.edu/calendar.

**Office of Faculty Development and Academic Support**

Kuykendall 107  
1733 Donaghho Road  
Honolulu, HI 96822  
Tel: (808) 956-8075  
Fax: (808) 956-9535  
Web: www.ofdas.hawaii.edu

Since 1988 the Office of Faculty Development and Academic Support (OFDAS) has provided general academic support in instructional and professional development activities and services for UH Mānoa faculty and academic staff; provides leadership development workshops, seminars, and focus groups for department chairs; conducts TA training; supports faculty evaluation and professional development plans; supports departmental instructional and faculty development projects; coordinates new faculty orientations; coordinates the annual Excellence in Teaching awards and Faculty Community Service awards; assists with honors ceremonies; maintains faculty development resources; and coordinates a faculty mentoring program. In addition, OFDAS provides opportunities for faculty members to participate in an array of instructional and curriculum development activities to improve teaching and learning on the Mānoa campus. OFDAS has been deeply involved in the development of Mānoa classroom spaces based on the principle of agility in education—as in educational spaces—as a response to more immersive, more engaged opportunities to teach and learn. More complex than an initial design of an agile physical environment is the aligning of agile design with agility in teaching and learning, schedules, curriculum, and subsequent demands on faculty professional development. OFDAS staff have been involved in development of transformative environments such as Sakamaki Innovation Zone, Webster 101 Collaborative Classroom, and a number of classroom improvements in buildings across Mānoa campus, and in orienting and supporting faculty, TAs, and students in teaching and learning in such spaces. All OFDAS activities and services are available to full-time tenure track, full-time non-tenure track, adjunct, and part-time faculty. OFDAS is presently organized into three functional units: the Center for Instructional Support (CIS), the Center for Teaching Excellence (CTE), and the Faculty Mentoring Program (FMP), which are actively engaged in providing support in the areas of teaching, assessment, and instructional technology. While each of the functional units have distinct foci, they work in collaboration within OFDAS to respond to faculty requests and needs.

**Center for Instructional Support**

Kuykendall 103  
1733 Donaghho Road  
Honolulu, HI 96822  
Tel: (808) 956-8075  
Fax: (808) 956-9535  
Web: www.cis.hawaii.edu

The Center for Instructional Support (CIS) is organized into three primary divisions, MultiMedia services, Graphic Media Design services, and Campus Central Repair to provide academic and classroom support. Services include: media equipment loan, scanning for exams and surveys, graphic design for visual instructional and information materials, on-campus repair for media equipment, classroom equipment installation and repair with a full-time staff of seven professionals. CIS manages media and classroom upgrades and installations in the 180+ general classrooms to ensure that appropriate and desired instructional technology is easily accessible to faculty. Consultations with UH Mānoa academic units and faculty may be arranged to assist with the effective use of technology in teaching to help plan and provide the richest possible learning experiences for students. Serving as advocate for the faculty, CIS is included in the consultations for the design of all new construction and renovation of classroom facilities and serves as ombudsman to resolve faculty and student concerns about classrooms.

**Center for Teaching Excellence**

Kuykendall 107  
1733 Donaghho Road  
Honolulu, HI 96822  
Tel: (808) 956-6978  
Fax: (808) 956-9535  
Web: www.cte.hawaii.edu

The Center for Teaching Excellence (CTE) provides programs for professional development and assessment of teaching and learning through programs, services and publications, all contributing to the development of attitudes, values, skills, and knowledge to impact the complex processes of teaching and learning. Ongoing dialogues about good teaching are maintained through seminars, workshops, individual counseling, and course assessment offerings with individuals, departments, and colleges and schools. Excellence in teaching is achieved through instructional development activities, teaching performance evaluations, intensive classroom observations, small student group instructional diagnosis, individual consultations on teaching practice and mentoring, and professional development offerings directed toward developing high impact and innovative teaching and learning theories, technologies, and pedagogies. CTE is involved in providing opportunities for faculty professional and career development by conducting New Faculty Orientations, developing and supporting electronic Course and Faculty Evaluation (eCAFE), supporting Department Chairs Seminar Series, and for teaching assistants through TA Trainings and Preparing Future Faculty Series.

**Faculty Mentoring Program**

Kuykendall 108  
1733 Donaghho Road  
Honolulu, HI 96822  
Tel: (808) 956-6978  
Fax: (808) 956-9535  
Web: www.fmp.hawaii.edu

The Faculty Mentoring Program (FMP) within the broader mission of OFDAS has become part of an integrated effort to retain new faculty and to provide support for faculty with tenure and seniority throughout their academic careers. Orienting mentoring towards all faculty has accomplished the engendering of a broader base of collegiality across gender and ethnicities as well as academic departments. It provides a Summer Dossier Series of professional development events, a Dossier Library of successful tenure and promotion dossiers from Mānoa faculty and a Mentor-Mentee Pairing Program, pairing individual senior mentors with junior mentees.
**Hawai'i State Center for Nursing**

2528 McCarthy Mall
Webster 402
Honolulu, HI 96822
Tel: (808) 956-5211
Web: www.hawaiicenterfornursing.org

The Hawai'i State Center for Nursing (HSCN) was established by the Hawai'i State Legislature “to address nursing workforce issues” (Act 173) with the goal of ensuring that the State of Hawai'i has the nursing resources necessary to meet the health care needs of its people. HSCN is a dynamic and respected champion for the nursing profession and a source of reliable information on existing and emerging trends in nursing. Through strategic thinking, collaboration, and the pursuit of synergistic solutions, HSCN has become a recognized leader in workforce planning, nursing research, and professional practice.

The core values of HSCN focus upon excellence, accessibility, collaboration, innovation, education and cultural diversity. The functions of the center include:

1. Collection and analysis of data; preparation and dissemination of written reports and recommendations regarding the current and future status and trends of the nursing workforce;
2. Conducting research on best practices and quality outcomes;
3. Developing a plan for implementing strategies to recruit and retain nurses; and
4. Researching, analysis, and reporting of data related to the retention of the nursing workforce.

**Industrial Relations Center**

Hamilton A254A
2550 McCarthy Mall
Honolulu, HI 96822
Tel: (808) 956-8132
Fax: (808) 956-8165
Email: uhirc@hawaii.edu
Web: www.manoa.hawaii.edu/irc

The Industrial Relations Center (IRC) seeks to promote understanding of industrial relations and human resources development problems, techniques, and policies. Organized to facilitate UH Mānoa research and instruction in the disciplines and professions related to industrial relations, the IRC also serves labor, management, and the community as the link in a continuing dialogue, reporting on changes in the field. The center maintains a library for information services and current publications; provides reference service; conducts conferences, lectures, and group discussions; and assists in the training of students and practitioners in the field. Research studies in industrial relations problems are conducted and published by the IRC.

**Information Technology Services**

Main Office Tel: (808) 956-2808
Help Desk Tel: (808) 956-8883
Help Desk Email: help@hawaii.edu
Web: www.hawaii.edu/its

Information Technology Services (ITS) provides support for integrating technology in teaching and learning (including distance learning, online and hybrid courses), high performance computing and advanced cyberinfrastructure for research, enterprise information systems, networking, telephony, teleconferencing, and web hosting for UH Mānoa and the UH System.

ITS infrastructure includes central servers and services, Internet-based video and teleconferencing systems to support distance education and global collaboration, and local and state-wide networks with connections to the Internet, Internet2, and other national and global research and education network. All UH students, faculty, and staff can obtain access to the Internet and UH technology resources through their UH username. The ITS Help Desk provides a single point of contact for access to ITS services and technical support.

**Office of International and Exchange Programs**

Queen Lili‘uokalani Center for Student Services 206
2600 Campus Road
Honolulu, HI 96822
Tel: (808) 956-2223
Email: loiskk@hawaii.edu
Web: manoa.hawaii.edu/international/

The Office of International and Exchange Programs (OIEP), in consultation with faculty, administrators, and the campus community, provides the international vision for the university. It does so by guiding relevant policies and expanding the university’s international presence and reputation through networking with communities at home and around the world. This office advocates, supports, and promotes international opportunities and activities both on campus and overseas. Led by the Assistant Vice Chancellor, the chief international education officer and the principal advisor to the Chancellor and Vice Chancellor on all matters pertaining to international education, OIEP is comprised of the following functional units: Faculty and Scholar Immigration Services, International Student Services, Mānoa International Exchange, National Student Exchange, and the Study Abroad Center. The OIEP serves as a catalyst for the university’s international engagement, facilitating and coordinating its global activities and initiatives.

**Study Abroad Center**

Moore Hall 115
1890 East-West Road
Honolulu, HI 96822
Tel: (808) 956-5143
Fax: (808) 956-9319
Email: uhmsac@hawaii.edu
Web: www.studyabroad.org

The Study Abroad Center (SAC) collaborates with various UH Mānoa academic departments to provide opportunities for students to study, and faculty members to teach and conduct research in another country. For more details, go to the Programs section in “Undergraduate Education.”

**Mānoa International Exchange**

Queen Lili‘uokalani Center for Student Services 206
2600 Campus Road
Honolulu, HI 96822
Tel: (808) 956-4728
Fax: (808) 956-5076
Email: uhmix@hawaii.edu
Web: manoa.hawaii.edu/international/mix/

UH Mānoa International Exchange (MIX) provides an opportunity for UH Mānoa students to study overseas and students from our overseas partner universities to study at Mānoa. An international exchange may be for one or two semesters; some summer exchange programs are also available. Participating students are registered as full-time UH Mānoa students.
while on exchange, and pay only their normal tuition. Upon completing the exchange, students receive transfer credit based on an evaluation of the transcript provided by the host university.

**National Student Exchange**
Physical Science Building 205
2565 McCarthy Mall
Honolulu, HI 96822
Tel: (808) 956-6772
Email: sandyd@hawaii.edu
Web: [www.nse.org](http://www.nse.org) and [www2.hawaii.edu/~nse](http://www2.hawaii.edu/~nse)

The National Student Exchange provides full-time undergraduates with the opportunity to study for a semester or a year at one of 170 colleges and universities located throughout the Continental U.S., Canada, Puerto Rico, Guam, and the Virgin Islands. Tuition costs for exchange students are reasonable since participants pay either UH Mânoa tuition or resident tuition at the host school. Room, board, and transportation costs are additional. For those who meet the eligibility requirements (including a minimum cumulative GPA of 2.5), exchange is an excellent way to explore different academic, social, and cultural settings.

**International Student Services**
Queen Lili‘uokalani Center for Student Services 206
2600 Campus Road
Honolulu, HI 96822
Tel: (808) 956-8613
Fax: (808) 956-5076
Email: issmanoa@hawaii.edu
Web: [www.hawaii.edu/issmanoa/](http://www.hawaii.edu/issmanoa/)

International Student Services (ISS) provides assistance to international students who come from more than 90 countries to study at UH Mânoa. ISS advises students on regulations affecting their non-immigrant visa status in the U.S., provides opportunities to help students adjust to local and U.S. cultures, advocates for international students, and serves as a resource for the university and local communities. ISS is responsible for meeting international student federal compliance and serves as the liaison between UH Mânoa and federal agencies regarding student immigration matters.

**Faculty and Scholar Immigration Services**
Physical Science Building 102-106
2565 McCarthy Mall
Honolulu, HI 96822
Tel: (808) 956-0935
Fax: (808) 956-5030
Email: fsis@hawaii.edu
Web: [www.hawaii.edu/fsis/](http://www.hawaii.edu/fsis/)

The Office of Faculty and Scholar Immigration Services (FSIS) provides immigration advising and support services for international faculty, APTs, exchange visitors, and sponsoring departments across the UH System. FSIS reviews and updates UH immigration policies and procedures and serves as a liaison between UH and federal agencies on employment-based immigration matters.

**Institutional Research Office**
2500 Campus Road
Hawai‘i Hall 107
Honolulu, HI 96822
Tel: (808) 956-5366
Fax: (808) 956-7115
Email: miro@hawaii.edu
Web: [manoa.hawaii.edu/miro/](http://manoa.hawaii.edu/miro/)

The mission of the Mânoa Institutional Research Office is to enhance institutional effectiveness by: collecting, analyzing, and reporting information for institutional strategic planning, assessment, program review, policy formulation, and decision making for both academic and administrative functions; coordinating responses to inquiries for university-related information; and serving as a comprehensive source for information about the institution.

**Harold L. Lyon Arboretum**
3860 Mânoa Road
Honolulu, HI 96822
Tel: (808) 988-0456
Fax: (808) 988-0462
Web: [manoa.hawaii.edu/lyonarboretum/](http://manoa.hawaii.edu/lyonarboretum/)

The Harold L. Lyon Arboretum facilitates and conducts research, instruction, and public service in tropical biology and horticulture. Located on a 194-acre site in upper Mânoa valley are greenhouses, laboratories, classrooms, and an herbarium. The arboretum also houses living plant collections, comprising about 15,000 accessions that encompass more than 6,000 species, varieties, and cultivars. It is the only university arboretum in the U.S. located in a tropical rainforest, and it has one of the largest collections of palms of any botanical garden in the world. Other major collections include tropical trees, heliconias, gingers, aroids, and ti. Emphasis is increasingly placed on native Hawaiian plants, including research on propagation and restoration of endangered species, on restoration of Hawaiian ecosystems, and on ethnobotany of the Hawaiian Islands.
Spark Matsunaga Institute for Peace and Conflict Resolution
Saunders Hall 523 and 723
2424 Maile Way
Honolulu, HI 96822
Tel: (808) 956-6433
MIPC Fax: (808) 956-9121
Email: uhip@hawaii.edu
Web: www.peaceinstitute.hawaii.edu

The Institute for Peace was established in 1986 and renamed in 1990 to honor former U.S. Senator Spark Matsunaga, a leader in the movement to promote peace studies. The institute is a multi-disciplinary academic community of scholars, students, practitioners, and visitors who seek through teaching, research, service, and application to: educate and train professionals and future leaders in applied peacemaking and conflict resolution; develop and apply innovations to the peaceful resolution of conflicts, locally, regionally, and globally; and renew UH Mānoa’s commitment to providing a safe sanctuary for civil and respectful exchange of perspectives and ideas.

The institute offers courses in peace studies and conflict resolution and coordinates three academic programs. Undergraduates can obtain an interdisciplinary BA in peace studies and/or conflict resolution, or an undergraduate Certificate in Peace Studies, equivalent to a minor. Graduate students can obtain the Graduate Certificate in Conflict Resolution, which is available to students studying only for the certificate and also to students who are pursuing another graduate degree and wish to obtain an additional qualification in conflict resolution.

The institute also conducts research and organizes public forums and conferences on topics relevant to peace and conflict studies and human rights. Recent forums include: Is Climate Change a Threat to World Peace?; Torture, National Security and Accountability; Making Agent Orange History; Peacemaking and The Rights of Children; Nuclear Weapons: Is Abolition Possible?; China’s Burgeoning Internet; and Hong Kong and China: Successful Autonomy? (See www.peaceinstitute.hawaii.edu/events/index.cfm) The institute also cooperates with other departments and community groups to organize international conferences, including the annual International Forum on The Rights of Persons with Disabilities (organized every spring with UH Mānoa’s Center on Disability Studies) and the First Global Nonkilling Leadership Forum, which included Nobel Peace Laureat Mairead Corrigan Maguire. The institute also coordinates UH’s Alternative Dispute Resolution (UH-ADR) program, which provides facilitation, mediation, and deliberative dialogues and training for clients in the UH System and the broader community. The institute’s programs are diverse but united by a common goal: to encourage students, faculty, and the community to strengthen their theoretical understanding and practical skills in the fields of peace studies, human rights, mediation, and collaborative problem solving. Building on Hawai’i’s cultural heritage and values, the institute seeks to promote cross-cultural communication and peacemaking leadership.

Pacific Biosciences Research Center
Pacific Biosciences Research Center 215
1993 East-West Road
Honolulu, HI 96822
Tel: (808) 956-7401
Fax: (808) 956-4768
Web: www.pbrc.hawaii.edu

The Pacific Biosciences Research Center (PBRC) is an organized research unit that supports interdisciplinary biological/biomedical research and training in basic and applied areas with particular relevance to Hawai‘i. Current research is focused on cellular, developmental and molecular biology, Hawaiian evolutionary biology and conservation, and neuro-behavioral biology; the unit has implemented plans for a more cohesive focus on biodiversity. PBRC maintains core research support facilities in molecular biology (supporting genomics and bioinformatics) and in confocal and electron microscopy that serve the entire UH Mānoa campus and the state. PBRC fosters undergraduate and graduate research training through multiple programs funded by the National Science Foundation—Undergraduate Research and Mentoring in the Biological Sciences, ATE Partnership for Advanced Marine and Environmental Science Training for Pacific Islands, International Research Experiences for Students (IRES) and through the Minority Access to Research Careers (MARC U*STAR) honors undergraduate program funded by the National Institutes of Health. PBRC administers the Békésy Laboratory of Neurobiology and the Center for Conservation and Research Training on the UH Mānoa campus and the Kewalo Marine Laboratory off-campus. PBRC has served as an incubator for developing new research initiatives and units, having supported the development of the 2-year medical school in the 1960s, the Cancer Research Center in the 1980s, and a number of clinical and human-health related programs transferred to the John A. Burns School of Medicine in 2003-2004.

Office of Research Compliance
Biomedical Sciences Building T111
1960 East-West Road
Honolulu, HI 96822
Tel: (808) 956-9004
Fax: (808) 956-3535
Web: manoa.hawaii.edu/ovcr/research

The Office of Research Compliance at UH Mānoa enhances research excellence for the UH System through four programs:
1. The Animal and Veterinary Services Program (AVSP) oversees the health and well-being of all vertebrate animals used in research, testing, and teaching system-wide. The University Veterinarian provides veterinary oversight for these animals. AVSP operates two vivaria for which they procure, house, and care for research animals on a fee-for-service basis. For more information on AVSP, please visit our website at manoa.hawaii.edu/researchcompliance.

2. The Animal Welfare and Biosafety Program (AWBP) advises, educates, and certifies personnel in best practices for biosafety and for the proper care and use of animals in research, testing, and teaching.

AWBP helps protect personnel, the environment, and the public from exposure to biological agents (including select agents and toxins), microorganisms, and recombinant genetic materials. AWBP administers the Institutional Biosafety Committee (IBC), which reviews, approves, and monitors...
research adherence to research and teaching protocols that involve potentially infectious agents.

AWBP administers the Institutional Animal Care and Use Committee (IACUC), which reviews, approves, and monitors laboratory and field research protocols and instructional activities involving vertebrate animals to help ensure they are used ethically and humanely.

3. The Human Studies Program (HSP) helps protect the welfare, rights, and dignity of human participants in research. The HSP administers the Institutional Review Boards (IRBs) that evaluate, approve, and monitor new and continuing research protocols involving human research participants, while providing training and counsel for investigators involved in research on humans.

4. The Research Integrity Program (RIP), along with the UH Ethics Committee, addresses allegations of research and scholarly misconduct and whistleblower retaliation, and provides education in the responsible conduct of research.

Social Science Research Institute
Saunders Hall 704
2424 Maile Way
Honolulu, HI 96822
Tel: (808) 956-8930
Fax: (808) 956-2884
Email: sssi@hawaii.edu
Web: www.sssi.hawaii.edu

The Social Science Research Institute (SSRI) serves as the sponsored research division of the College of Social Sciences. SSRI facilitates and support interdisciplinary, applied research that addresses critical social, behavioral, environmental, and economic issues in Hawai’i and the Asia-Pacific region. This is done through collaboration with faculty throughout the UH and with other educational and research institutions, regional and international organizations, the private sector, federal, state, and county agencies. These collaborations are supported largely by contracts and grants from public agencies and private organizations.

SSRI provides administrative support for pre- and post-award activities related to extramural research and training grants in the college. SSRI houses the Telecommunications and Social Informatics Research Program (TASI)/Pan-Pacific Education and Community Experiments by Satellite (PEACESAT) program, the Center for Oral History, and the Office for Evaluation and Needs Assessment. The institute also cooperatively manages the UH Economic Research Organization (UHERO) with the Department of Economics.

The institute currently focuses on these areas: telecommunication and information policy; crime, drug abuse and youth problems; resources and sustainable development; adult mental health services; health services and health policy; and culture, language, and social problems.

University of Hawai’i Cancer Center
701 Ilalo Street
Honolulu, HI 96813
Tel: (808) 586-3010
Fax: (808) 586-3009
Web: www.uhcancercenter.org

The University of Hawai’i Cancer Center is a free-standing organized research unit of UH Mānoa focusing on cancer research. Its faculty members are comprised of scientists and clinicians from various disciplines reflecting the broad research interests of the center. The UH Cancer Center is a National Cancer Institute (NCI)-designated consortium cancer center, a prestigious designation granted only to the most eminent and successful cancer centers in the nation after a rigorous peer review. The designation comes with a Cancer Center Support Grant that provides funding for various core research facilities such as Analytical Biochemistry; Biostatistics and Informatics; Genomics; Metabolomics; Microscopy, Imaging, and Flow Cytometry; Nutrition Support; and Pathology. The UH Cancer Center also operates the Hawai’i Tumor Registry and the Clinical and Translational Research Services resource, which provides access to clinical trials for cancer patients in Hawai’i.

The UH Cancer Center faculty are engaged in all aspects of cancer research, and generated $20 million in extramural research support in 2014. In addition to conducting fundamental research, the UH Cancer Center also provides research opportunities for minority and underserved high school students and college undergraduates through internships, as well as MS, MD, MPH, and PhD students enrolled in academic disciplines closely aligned with the faculty’s research interests.

The UH Cancer Center’s research activities are organized into five programs. They are: (1) cancer epidemiology, which examines the underlying ethnic and racial differences in cancer incidence and mortality and the roles of lifestyle factors, genetics, hormones, and infectious agents in cancer causation; (2) cancer prevention and control, which seeks to advance the understanding of behavioral, psychosocial, biological, social, and environmental factors associated with cancer; test interventions to reduce cancer risk, increase early detection, and improve survivorship; and disseminate research that benefits multiethnic, multicultural, and underserved populations; (3) cancer biology, which studies cancer mechanisms that drive cancer development, progression, and invasion and works to translate the discoveries into more effective prevention, detection, and therapeutic interventions; (4) natural products and experimental therapeutics, which investigates anticancer targets and pathways of clinical and therapeutic significance; focuses on new drug discoveries and development, with the emphasis on identifying safe and effective natural product-based anticancer drugs, and taking advantage of the vast natural product resources of Hawai’i and the Pacific region; and (5) clinical and translational research that aims to translate research discoveries into clinical applications, while providing Hawai’i’s patients access to the most promising research opportunities and contributes Hawai’i’s unique multiethnic population to national trials.
University of Hawai‘i Press
2840 Kolowalu Street
Honolulu, HI 96822
Tel: (808) 956-8257
Fax: (808) 988-6052
Web: www.uhpress.hawaii.edu

University of Hawai‘i Press (UH Press) publishes and distributes books and journals of high merit that reflect the regional or special interests and responsibilities of UH and other scholarly research organizations. All titles carry the imprint “University of Hawai‘i Press.” UH Press is a member of the Association of American University Presses, Association of American Publishers, Society for Scholarly Publishing, Hawai‘i Book Publishers Association, and the International Association of Scholarly Publishers. UH Press publishes books of regional interest, scholarly monographs, textbooks, and scholarly journals. (UH Press also operates a sales program—East-West Export Books—in Asia and the Pacific on behalf of American scholarly publishers.) Editorial control (final approval of manuscripts) is vested in a board made up of UH faculty members appointed by the Vice Chancellor for Academic Affairs. Faculty members are encouraged to submit book-length manuscripts to the executive editor. Journal papers should be submitted to the editor-in-chief of the appropriate journal.

University of Hawai‘i Translational Health Science Simulation Center (UH THSSC)
2528 McCarthy Mall
Webster Hall
Honolulu, HI 96822
Tel: (808) 956-7466
E-mail: thssc@hawaii.edu
Web: thssc.nursing.hawaii.edu/

The UH Translational Health Science Simulation Center’s (UH THSSC) mission is to improve patient outcomes by providing effective programs which promote and enhance safe, quality healthcare through clinical competence, teamwork, trans-disciplinary collaboration, and translational research. The 8,000 square foot center integrates state-of-the-art simulation equipment, electronic patient records, and advanced audio-video systems to support education and research for Hawai‘i’s health care professionals.

Simulated patient care environments provide controlled instructional settings for professionals to practice clinical skills in a safe learning environment without impacting real patient outcomes. Designated physiological laboratories equipped with technologic resources support interdisciplinary biomedical and behavioral research. UH THSSC provides novice through technologic resources support interdisciplinary biomedical outcomes. Designated physiological laboratories equipped with in a safe learning environment without impacting real patient instructional settings for professionals to practice clinical skills health care professionals.

The Waikiki Aquarium is 110 years old and the second oldest aquarium in the U.S. Part of the university since 1919, it is the State Aquarium of Hawai‘i and gave rise to the Hawai‘i Institute of Marine Biology and the Pacific Biomedical Research Center. Focusing on South Pacific marine life, it houses over 2,500 specimens representing over 400 vertebrate and invertebrate species, including many that can be seen here and at no other aquarium worldwide. It is internationally renowned for the ecological accuracy of its award winning exhibits, and for its coral propagation and education programs: it houses probably the most diverse living coral collection of any aquarium in the northern hemisphere. Research activities include propagation of rare and endangered Hawaiian corals, Hawaiian monk seal biology, green sea turtle growth rates, studies of the threatened inarticulate brachiopod, and various aquaculture and husbandry-related projects, such as giant clam and jellyfish husbandry, and production of planktonic algae, and rotifer and other microcrustacean live feeds. The exhibits feature up-close experiences at the “Edge of the Reef” outdoor exhibit, educational presentations about the Hawaiian monk seal, and other interpretive activities. An audio tour provides additional information about exhibits. The Aquarium also offers a diverse array of marine education programs, with classes, workshops and schools tours. The Aquarium is open daily to the public from 9:00 am, last entry at 4:30 pm, and closes at 5:00 pm. Please check the website for special hours.

Water Resources Research Center
Holmes 283
2540 Dole Street
Honolulu, HI 96822
Tel: (808) 956-7847
Fax: (808) 956-5044
Web: www.wrrc.hawaii.edu

Water Resources Research Center (WRRC) conducts research on Hawai‘i’s water resources, assists and promotes instruction in water resources in several academic departments, provides training opportunities for engineers and scientists through research, and communicates research results to users. Interdisciplinary research is broadly based in physical and biological sciences, technology, ecology, and social sciences. The research encompasses hydrology and hydraulic engineering, geology, geophysics and geochemistry, microbiology, chemistry, zoology, oceanography, sanitary engineering and public health, climatology and soil physics, agricultural engineering and forestry, and socioeconomic and legal issues. WRRC operates laboratories and field research facilities. The Environmental Center, whose mission focuses on ecological relationships, natural resources, and environmental quality, is administered by WRRC.
University of Hawai‘i Board of Regents

MOORE, Randolph G. (Chair)
SULLIVAN, Jan Naoe (Vice Chair)
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ACOBA, Simeon (Interim)
BAL, Dileep G. (Interim)
GEE, Chuck Y.
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MIZUNO, Barry T.
NIELSEN, Helen (Interim)
PORTNOY, Jeffrey
PUTNAM, Lee
TAGORDA, Michelle
YUEN, Stanford

Former Presidents

POPE, Willis T., 1907–1908 (Acting) (Deceased); BS 1898, Kansas State; MS 1916, California; DSc 1926, Hawai‘i
GILMORE, John W., 1908–1913 (Deceased); BSA 1898, BSA 1906, Cornell
DONAGHHO, John S., 1913–1914 (Acting) (Deceased); AB 1889, AM 1897, Marietta
DEAN, Arthur L., 1914–1927 (Deceased); BA 1900, Harvard; PhD 1902, Yale; LLD 1947, Hawai‘i
CRAWFORD, David L., 1927–1941 (Deceased); BA 1911, LLD 1933, Pomona; MA 1912, Stanford; LLD 1957, Hawai‘i
KELLER, Arthur R., 1941–1942 (Acting) (Deceased); LLB 1907, National University Law School; MS 1916, MIT; ScD 1942, Hawai‘i
SINCLAIR, Gregg M., 1942–1955 (Deceased); BA 1912, LLB 1949, Minnesotta; MA 1919, LLD 1954, Columbia; LLD 1951, Ohio State; LLD 1955, UC Berkeley; HHD 1956, Hawai‘i; DLit 1960, Keio
BACHMAN, Paul S., 1955–1957 (Deceased); BS 1922, Ohio State; MA 1925, PhD 1927, Washington
WILSON, Willard, 1957–1958 (Acting) (Deceased); BA 1929, LLD 1961, Occidental College; MA 1930, Columbia; PhD 1939, Southern California
SNYDER, Laurence H., 1958–1963 (Deceased); BS 1922, ScD 1947, Rutgers; MS 1924, ScD 1926, Harvard; ScD 1960, Ohio State; HHD 1962, North Carolina
HIATT, Robert W., 1968–1969 (Acting) (Deceased); BA 1936, San Jose State; PhD 1941, UC Berkeley
TAKASAKI, Richard S., 1969 (Acting) (Deceased); BS 1940, Hawai‘i; MA 1949, Columbia; MPA 1960, Harvard
MATSUBA, Fujio, 1974–1984; BS 1949, Rose Polytechnic Institute; ScD 1952, MIT
SIMONE, Albert J., 1984–92; BA 1957, Tufts; PhD 1962, MIT
YUEN, Paul C., 1992–93 (Acting) (Deceased); BS 1952, Chicago; MS 1955, PhD 1960, Illinois Institute of Technology
McCLAIN, David, 2004–2009; BA 1968, Kansas; PhD 1974, MIT

University of Hawai‘i System Administration

LASSNER, David, President
THOMPSON, Nainoa, Advisor on Hawaiian Affairs
DICKSON, Rita, President for Academic Affairs
GOUVEIA, Jan, Vice President for Administration
YOUNG, Kalbert, Vice President for Budget and Finance/Chief Financial Officer
MORTON, John F., President for Community Colleges
YOSHIMI, Garrer, Vice President for Information Technology and Chief Information Officer
LENDOIO, Darolyn H., Vice President for Legal Affairs and University General Counsel
SYMOS, Vassilis L., Vice President for Research and Innovation
JAVINAR, Jan, Interim Associate Vice President for Student Affairs

UH Mānoa Administration

*BLEY-VROMAN, Robert, Interim Chancellor
*ERICSON, David P., Faculty Athletics Representative

Academic Affairs
*DASENBROCK, Reed W., Vice Chancellor for Academic Affairs and Professor of English
*AUNE, Kristyn S., Dean of Graduate Division and Professor of Communicology
*CAMBRA, Ronald E., Assistant Vice Chancellor for Undergraduate Education and Professor of Communicology

GOODWIN, April N., Program Officer, BA 2002, Hamline U; MIPA 2008, Wisconsin-Madison
McCREARY, Beverly, Assistant Vice Chancellor for Academic Personnel and Assistant Specialist; BS 1987, USC; MS 1990, PhD 1993, Oregon

KIMURA, Trisha, Program Officer; BS 1988, UC Berkeley; JD 1991, Boalt Hall School of Law, UC Berkeley

PEARSON, Wendy L., Program Officer; BA 1993, Michigan State; MA 1996, Hawai‘i
ZHANG, Yang, Director of Institutional Research; BA 2002, Shandong U (China); MS 2005, Wisconsin-Milwaukee; MBA 2011, Edgewood College; PhD 2011, Wisconsin-Madison

Research
*TAYLOR, Brian, Interim Vice Chancellor for Research and Dean of Ocean and Earth Science and Technology
KAMEOKA, Velma A., Interim Associate Vice Chancellor for Research; BA 1972, MS 1975, PhD 1979, Hawai‘i

GALLAND, John C., Assistant Vice Chancellor for Research Compliance; BA 1971, Adams State; MS 1985, PhD 1989, UC Davis

Administration, Finance and Operations
CUTSHAW, Kathleen D., Vice Chancellor for Administration, Finance and Operations; BA 1984, UC San Diego

*MERED, Stephen E., Interim Assistant Vice Chancellor for Planning and Facilities

FRENCH, Alexandra (Sandy), Director of Finance and Accounting; BA 1980, Reed College; MPA 1987, Lewis & Clark College

HUEBLER, Deborah T., Director of Campus Services; BS 1996, Arizona State

KUNIYOSHI, Tammy M., Director of Human Resources; BBA 1989, Hawai‘i

NAGAO, Robert W., Budget Director; BA 1968, Chaminade

* Indicates that dates and institutions of degrees are listed under "Faculty."
Student Affairs
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Academic Administration
Architecture
FRIEDMAN, Daniel S., Dean

Arts and Sciences
*ARNADE, Peter, Dean, College of Arts and Humanities
*BRIAN, Thomas, Interim Associate Dean, College of Arts and Humanities
*CARR, Jeffery, Interim Dean, College of Languages, Linguistics and Literature
*DITTO, William L., Dean, College of Natural Sciences
*KONAN, Denise E., Dean, College of Social Sciences
*KONO-DRAKE, Kimi, Interim Associate Dean, College of Languages, Linguistics and Literature
*ROBINOW, Steven, Interim Associate Dean, College of Natural Sciences
*SUTHERLAND, Ross A., Interim Associate Dean, College of Social Sciences

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*CHEN, Qimei, Interim Associate Dean for Academic Affairs
VARLEY, Richard, Director, Internships and Career Development
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Education
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*ANDRADE, Ivy, Director, Center for Hawaiian Studies

Law
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KAU, Wesley, Administrative Officer
*KIMURA, Spencer, Director of LLM and Summer Programs
*LEE, Dale W., Director of Professional Development
MORDECAI, Minara, Director of Special Projects
NONZEE, Pyada, Registrar
*SKILLING, Liam, Director of the Evening Part-Time JD Program and Academic Success
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Medicine
*HEDGES, Jerris R., Dean
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MAGNUSSON, A. Roy, Associate Dean for Clinical Affairs
*HARRIGAN, Rosanne, Director of Faculty Development
*SAKAI, Damon, Director of Medical Education
SMERZ, Richard, Director of Student Affairs
*BURGESS, Lawrence P. A., Director of Telehealth Research Institute
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SEYMOUR, Corrine M., Director of Fiscal and Administrative Services

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*ZIEHM, Scott R., Associate Dean for Academic Affairs

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Pacific and Asian Studies
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*AUNG THWIN, Michael, Chair, Asian Studies

Social Work
*MOKUAU, Noreen, Dean

Travel Industry Management
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*Dates and institutions of degrees are listed under "Faculty."
Endowed Chairs and Distinguished Professorships

Victor and Peggy Brandstrom Pavel Endowed Chair in Astronomy.

Gladys Kamakakūokalani ‘Ainoa Brandt Endowed Chair in SHK, funded by the estate of Gladys ‘Ainoa Brandt.

Dr. Edwin C. Cadman Endowed Professorship for the Study of Neurodegenerative Disorders funded by the Cadman endowment fund of the UH Foundation.

Carlsmith Ball Faculty Scholar, funded by Carlsmith Ball LLP of Honolulu.

Barbara Cox Anthony Chair in Aging in the Center on Aging, funded by an anonymous donor.

Dai Ho Chun Chair in the Colleges of Arts and Sciences, funded by the will of Dai Ho Chun.

Dai Ho Chun Distinguished Chair in Educational Leadership in the College of Education, funded by the late Dai Ho Chun.

The Citizens’ Chair in English Literature in LLL, funded by the Hawai‘i State Legislature.

Coral Industries Professorship in Renewable Energy Resources in HNEI, funded by Coral Petroleum, Inc.

Donald A. Corbin Distinguished Professorship in Accounting in the Shidler College of Business, funded by Donald and Martha Corbin and other individuals, corporations, and foundations.

John and Sue Dean Distinguished Professorship in the Shidler College of Business, funded by John and Sue Dean.

Judith Pyle Dean’s Chair in the Hawai‘inui‘akea School of Hawaiian Knowledge.

The Endowed Director of the Center for Cardiovascular Research in JABSOM, funded by an anonymous donor.

First Hawaiian Bank Endowment Fund for the Distinguished Professor of Management and Leadership.

First Insurance Company Distinguished Professorship in the Shidler College of Business, funded by First Insurance Company Hawai‘i Charitable Foundation.

Lloyd Fujie and Deloitte Foundation Distinguished Accounting Professorship in the Shidler College of Business, funded by Deloitte & Touche, LLP, the Deloitte Foundation.

Wallace S. Fujiyama Visiting Professorship of Law, funded by Duty Free Shoppers Group, Ltd.

Hawai‘i Medical Service Association Chair for Health Care Services Quality Research in JABSOM, funded by the Hawai‘i Medical Services Association.

Sidney and Erica Hsiao Endowed Chair in College of Natural Sciences, funded by the Sidney and Erica Hsiao Trust.

Dan and Maggie Inouye Distinguished Chair in Democratic Ideals in Law and College of Arts and Humanities, funded by the Inouye endowment fund of the University of Hawai‘i Foundation.

George M. Johnson Visiting Professorship in Law, funded by the will of Evelyn W. Johnson.


W. Ruel Johnson Distinguished Professorship in the Shidler College of Business, funded by William R. Johnson, Jr.

Fred T. Korematsu Professor of Law and Social Justice, funded primarily by Minie Kosasa.

Benjamin A. Kudo Chair of Law in Law, funded by an anonymous donor.


Gordon A. Macdonald Chair in Volcanology in SOEST, funded by the Hawai‘i State Legislature.

Michael J. Marks Distinguished Professor in Business Law, funded primarily by The Michael J. Marks Foundation.


Frances A. Matsuda Chair in Women’s Health in Nursing, funded by Frances A. Matsuda Sano.

Harold and Sandy Noborikawa Chair of Entrepreneurship, Marketing, and Information Technology in the Shidler College of Business, funded by Harold and Sandy Noborikawa.

Yehan Numata Chair in Buddhist Studies in SPAS, funded by Yehan Numata.

Jean E. Rolles Distinguished Professorship in the Shidler College of Business, funded by Jean E. Rolles.

Soshitsu Sen XV Professor of Traditional Japanese Culture and History in College of Arts and Humanities, funded by Soshitsu Sen XV.

Shidler College Distinguished Professorships in the Shidler College of Business, funded by Jay Shidler.

The J and M Sullivan Endowed Cancer Chair in UHCCC, funded by Joanna and Maurice Sullivan.


Key to Abbreviations

CCCR–Center for Cardiovascular Research
CRDG–Curriculum Research & Development Group
CTAHR–College of Tropical Agriculture and Human Resources
HCAC–Hawai‘i Center for Advanced Communications
HIGP–Hawai‘i Institute of Geophysics and Planetology
HIMB–Hawai‘i Institute of Marine Biology
HNEI–Hawai‘i Natural Energy Institute
HSFL–Hawai‘i Space Flight Laboratory
HSGCP–Hawai‘i Space Grant College Program
HURL–Hawai‘i Undersea Research Lab
IRC–Industrial Relations Center
IFA–Institute for Astronomy
IPRC–International Pacific Research Center
IRTF–Infrared Telescope Facility
JABSOM–John A. Burns School of Medicine
JAAC–Japanese American Archives and Cultural Center
JIAM–Joint Institute for Marine and Atmospheric Research
QFDAS–Office of Faculty Development and Academic Support
PRRC–Pacific Biosciences Research Center
PMP–Pacific Mapping Program
SGCP–Sea Grant College Program
SHK–Hawai‘inui‘akea School of Hawaiian Knowledge
SOEST–School of Ocean and Earth Science and Technology
SSRI–Social Science Research Institute
UHCCC–University of Hawai‘i Cancer Center
WRRC–Water Resources Research Center
Myron “Pinky” Thompson Endowed Chair in JABSOM’s Native Hawaiian Center of Excellence, funded by the National Institutes of Health.

Henry A. Walker, Jr., Distinguished Professor of Business Enterprise in the Shidler College of Business, funded by the Amfac Foundation.

Barry and Virginia Weinman Dean’s Chair in JABSOM, funded by Barry and Virginia Weinman.

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*LIN, Haosheng, Astronomer*
*LIU, Michael, Astronomer*
*LU, Jessica, Assistant Astronomer*
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*MEECH, Karen J., Astronomer*
*MENDEZ, Roberto, Astronomer*
*MORRISON, Glenn, CFHT Resident Astronomer, Associate Astronomer*
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Kimura, Rene, Academic Support

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*Dates and institutions of degrees are listed under "Faculty."
Hawai'i Space Grant Consortium
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*SCOTT, Edward R., Associate Director (Fellowship), Hawai'i Space Grant Consortium
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Hawai'i State Center for Nursing
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Hawai'i Undersea Research Laboratory
*WILTHORNE, John C., Director and Associate Chair of Ocean and Resource Engineering
*CHAVE, E. H., Associate Specialist
*CREMER, Maximilian D., Assistant Specialist
*GREENEON, Ben, Dred Dandridge, Specialist
*KELLEY, Christopher D., Associate Specialist
*MALAHOFF, Alexander, Emeritus Professor of Oceanography
ORANGE, Rachel S., Junior Specialist
*SMITH, John R., Jr., Specialist

Honors Program
*GONZALEZ, Venardette V., Director
CUSTODIO, Jennifer, Educational Specialist
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Industrial Relations Center
*NAJITA, Joyce M., Director and Researcher
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Information Technology Services
SMITH, Steven L., Interim Vice President for Information Technology and Chief Information Officer, BGS 1973, Iowa; MA 1984, Hawai'i
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Interdisciplinary Studies Program
*ODIN, Jashere, Director
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International and Exchange Programs
PERUSHEK, Diane, Director of Global Relations
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International Pacific Research Center
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FU, Joshua Youhua, Associate Researcher
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IKUKUCHI, Kanyushla, Assistant Researcher
LEE, June-Yi, Assistant Researcher
*LI, Tim, Professor of Atmospheric Sciences
MAXIMENKO, Nikolai, Senior Researcher
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*SNYDER, Niklas, Professor of Oceanography
TIMMERMANN, Axel, Professor of Oceanography
TOKINAGA, Hiroki, Assistant Researcher
*WANG, Bin, Professor of Atmospheric Sciences
WANG, Yuqing, Professor of Atmospheric Sciences
*XIE, Shang-Ping, Professor of Atmospheric Sciences
*YU, Zuojun, Associate Researcher

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*DUCKWORTH, Linda, Director
*ALLEN, Raymond W., International Student Advisor
*NGO, Viet, International Student Advisor
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Joint Institute for Marine and Atmospheric Research
*FELLOWS
*MERRIFIELD, Mark A., Director and Associate Professor of Oceanography
*BARNES, Gary M., Professor of Atmospheric Sciences
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*DECARLO, Eric, Research Professor of Oceanography
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*FIRING, Eric, Associate Professor of Oceanography
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Center for Language & Technology
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Library Services

*HEBOLD, Irene M. H., University Librarian and Librarian V, Administration
*ADAMSON, James Paul, Librarian V and Head, Systems
AGUNAT, Wayne S., Information Technology Specialist
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*ANDERSON, Kristen L., Librarian V, Head, Science & Technology Reference
*BAZZELL, Toko Y., Librarian V, Asia Collection
*BRIER, David J., Librarian V and Head, Business, Humanities and Social Sciences Reference
*CARLSON, Amy J., Librarian IV and Head, Serials
*CHANG, Erica S., Librarian IV, Cataloging
*CHANTINTY, Martha E., Librarian V, and Head, Desktop Network Services
*CHOPEY, Michael A., Librarian IV, Cataloging
*CHOW, Naomi L., Librarian II, Access Services
*CLARIZA, M. Elena, Librarian II, Asia Collection
*DAVIS, Lynn A., Librarian V and Head, Preservation
*DAWRS, Stuart V., Librarian III and Head, Special Collections
*DENNISON, Carolyn, Librarian III, Science and Technology Reference
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*FLYNN, David A., Librarian IV, Business, Humanities & Social Sciences Reference
*GHOSH, Monica G., Librarian V, Asia Collection
*HERRING, Eileen C., Librarian V, Science Technology Reference
HOSÉ, Carla, Educational Specialist
IRWIN, Seth, Educational Specialist
ISHIMITSU, Daniel, Information Technology
JAMES, Ryan, Educational Specialist
*KAHINKA-LOU, Krisy K., Librarian II, Sinclair Library
*KELLETT, Carol S. Y., Librarian II, Systems
KIM, Erin, Informational Technology
*KLEIBER, Eleanor J., Librarian III, Special Collections
*KWOK, Theodore J., Librarian IV, Government Documents and Maps
LAI HIPP, Sean, Information Technology
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LEUNG, Wing, Information Technology
*MATTOS, Judie H., Librarian IV, Special Collections
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PASCUA, Mark-Roel, Building Manager Assistant
*PASENG, Rohayati, Librarian V and Head, Asia Collection
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*POLANSKY, Patricia, Librarian V, Asia Collection
*SACK, Nancy, Librarian IV, Cataloging
*SAKAI, Lori A., Librarian II, Serials
*SABRA, Asako, Librarian II, Cataloging
SHUM, Arthur, Educational Specialist
*SINCLAIR, Gwen E., Librarian IV, Government Documents and Maps
*SKEEM, Dainam, Librarian II and Acting Head, Archives & Manuscripts
*SOLYOM, Brownen, Librarian V, Charlot Collection
*SPRINGR, Hisami K., Librarian IV, Cataloging
*SUNG, Naclil, Librarian IV and Head, Acquisitions
TAKATA, Christine, Educational Specialist
*TANAKA, Faith, Administrative and Fiscal Support Specialist

*TILLINGHAST, Beth H., Librarian V, Interim Assistant University Librarian for Information Technology, Administration
TOM, Lois, Educational Specialist
TONES, Kari, Educational & Academic Support Specialist
WEATHERLY, Alexis, Media Specialist
WONG, Chiwah (Wendi), Administrative and Fiscal Support Specialist
YAGI, Jerard, Information Technology
*YANG, Jude Y., Librarian II, Asia Collection

Harold L. Lyon Arboretum

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*ENG, Matt, Junior Specialist
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Marine Option Program

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Military Science Program

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National Foreign Language Resource Center

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SUKUMA, Rodney H., Administrative Officer
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YON-DOTINCHEM DE RANDE, Sandra, Research Analyst; MEA 2009, University of Duisburg-Essen (Germany)
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Credit Programs

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Non credit Programs

*FEENEY, Pauline C., Assistant Specialist
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Community Services Programs

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International Programs

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Békésy Neurobiology Program
*HARTLINE, Daniel K., Program Director and Researcher
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*CASTELFRANCO, Ann, Associate Researcher
*CHRISTIE, Andrew E., Associate Specialist
*COOKE, Ian M., Professor Emeritus of Zoology and Pacific Biosciences Research Center
*COUVILLON, Patricia A., Associate Professor
*LENS, Petra H., Researcher
*YANAGIHARA, Angel A., Assistant Researcher
*YEW, Joanne Y., Assistant Researcher

Biotechnology Program
*PATTI, Suresh S., Researcher Emeritus in Plant Pathology
*MOEZ, Gabor, Specialist

Center for Conservation Research and Training
*KANESHIRO, Kenneth Y., Program Director and Researcher
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*HADFIELD, Michael G., Program Director, Undergraduate Research and Mentoring in the Biological Sciences Program (URM); and Professor of Zoology
*HAYES, Kenneth A., Principal Investigator, International Research Experience for Students (IRES); and Assistant Researcher
*RICHMOND, Robert H., Program Director, NSF-ATE Partnership for Advanced Marine and Environmental Science Training for Pacific Islanders; and Researcher

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SATO, Lisa, BSE 1999, Hawai‘i
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Office of the Registrar
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Sea Grant College Program
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*KONAN, Denise, Director, Center for Sustainable Tourism
*MEDER, Stephen, Director, Center for Smart Building and Community Design
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*CHING, Kelly, Program Management Specialist
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*FELLENIUS, Karl, Coastal Management Extension Agent
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*KAPMAN, Lucinda, Communications Leader
*LUM, Cassidy, Volunteer Assistant Coordinator
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Social Science Research Institute
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*YAKABU-MURAMOTO, Christine, Administrative and Fiscal Support Specialist; BA 1994, Hawai‘i
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SEYMOUR, Kamana, Residence Director, Student Housing Services; BS 2008, Hawai‘i
SHARMA, Sheila, Student Services Specialist, Office of Multicultural Student Services; BA 2001, UCLA
SHIGANO, Jill, Administrative Officer, Student Life and Development; BEd 1978, Hawai‘i
SHIMABUKURO, Laura, Assistant Director of Student Union for Meetings & Event Services, Student Life and Development; BBA 2004, Hawai‘i
SHIROMA, Sarah, Administrative and Fiscal Support, Administrative Services; BBA 2010, MBA 2012
*SOLOMON, Angelique, Junior Specialist, Student Equity, Excellence & Diversity
SOLOMON, Lisa M., Paramedical Assistant, University Health Services
SONODA-PALE, Melinda, Instructional & Student Support Specialist, Student Life and Development
*SORA, Wendy H. T., Director, Mānoa Career Center
*TAKAHASHI, Melanie, Assistant Specialist, Mānoa Career Center
TAKASHIGE, Cheryl K. S., Early Childhood Specialist III, Children’s Center; BEEd 1976, Hawai‘i
*TANOUYE, Allyson, Director and Specialist, Counseling and Student Development Center; PhD 1990, Missouri-Columbia
TRABA, Ashley A., RN, University Health Services
*TUTSUMOTO, Thomas, Junior Specialist, Mānoa Career Center
UKISHIMA, Joan, Psychometrist, Counseling and Student Development Center; BA 1968, MEd 1998, Hawai‘i
ULRICH, Jennifer A. G., Early Childhood Special I, Children’s Center; BA 1998, Hawai‘i
UWONO, Dee, Director of Judicial Affairs, Office of Judicial Affairs; BA 1998, MEd 2004, Hawai‘i, EdD 2010, USC
VALDEZ, Audette, Coordinator of Behavior Management, Assessment and Compliance, Student Housing Services; BS 2008, Hawai‘i
VALENZUELA, Tasha N., Assistant Retention Coordinator, College Opportunities Program; BBA 2006, Hawai‘i
VILLANUEVA, Geraldine, Graphic Artist in Mānoa Career Center; BA 2012, Hawai‘i
WATANABE, Randall K., Information Technology Specialist, Student Housing Services; BS 1999, Hawai‘i
WATKINS, Wayne C., Director, Children’s Center; BA 1976, Florida
*WELIN, Stephanie, Coordinator of Student Union Programs, Student Life and Development
*WESTFALL-SENDY, Mandy, Coordinator of New Student Orientation, Student Life and Development
*WISCHMAN, Kim, Specialist and Physician, University Health Services; BA 1986, MD 1996, GWU
WONG, Patricia C., Pharmacist, University Health Services; BS 1997, San Francisco; PharmD 1981, USC
*WONG, Wesley L., Specialist and Physician, University Health Services; BS 1983, MD 1987, Hawai‘i
YODA, Stephanie, Student Health Insurance Coordinator, University Health Services; BA 1991, Hawai‘i
YORITA, Sheila K., Early Childhood Special II, Children’s Center; BEA 1991, MEd 2000, Hawai‘i
YOSHIMURA, Dana, Associate Director of Operations, Student Housing Services; BBA 1980, Hawai‘i
*Dates and institutions of degrees are listed under * Faculty.

**Student Athlete Academic Services**
*AMBROZICH, Kari, Junior Specialist
*CLAIN, Garrett, Junior Specialist

*DAVIDSON, Timothy, Junior Specialist
*GILLESPIE-SCANLON, James, Junior Specialist
*TSUMOTO, Courtney, Junior Specialist

**College of Tropical Agriculture and Human Resources**
*GALLO, Maria, Dean and Director
*EVENSEN, Carl L., Interim Associate Dean and Associate Director for Cooperative Extension
GRACE, J. Kenneth, Interim Associate Dean and Director for Research
KINOSHITA, Charles M., Associate Dean for Academic and Student Affairs

**Study Abroad Center**
*RAI, Sarita, Director
*CHONG KUNA, Vanessa M., Study Abroad Advisor
*LEE, Max, Study Abroad Advisor

**College of Tropical Agriculture and Human Resources**
*GALLO, Maria, Dean and Director
*EVENSEN, Carl L., Interim Associate Dean and Associate Director for Cooperative Extension
GRACE, J. Kenneth, Interim Associate Dean and Director for Research
KINOSHITA, Charles M., Associate Dean for Academic and Student Affairs
CHANG, Annette, Director, Administrative Services

**Study Abroad Center**
*RAI, Sarita, Director
*CHONG KUNA, Vanessa M., Study Abroad Advisor
*LEE, Max, Study Abroad Advisor

**College of Tropical Agriculture and Human Resources**
*GALLO, Maria, Dean and Director
*EVENSEN, Carl L., Interim Associate Dean and Associate Director for Cooperative Extension
GRACE, J. Kenneth, Interim Associate Dean and Director for Research
KINOSHITA, Charles M., Associate Dean for Academic and Student Affairs
CHANG, Annette, Director, Administrative Services

**Study Abroad Center**
*RAI, Sarita, Director
*CHONG KUNA, Vanessa M., Study Abroad Advisor
*LEE, Max, Study Abroad Advisor

*Dates and institutions of degrees are listed under * Faculty.
KIM, Minna, Research Associate
*KIM, Young-Soo, Researcher, Human Nutrition, Food and Animal Sciences
KITAGAWA-AKAGI, Lisa C., Student Services Specialist; BS 2002, MEd 2009, Hawai‘i
*KO, Wen-Hsiao, Plant Pathologist
*KOBAYASHI, Kent D., Associate Horticulturist, Tropical Plant and Soil Sciences
KONG, Kefi, Distance Education Specialist
KRUSHELNYCKY, Paul, Junior Researcher, Plant and Environmental Protection Sciences
KUNIPO, Gabriel K., Institutional Support; BA 2011, Hawai‘i
*KURASAKI, Ryan, Facilities Planning and Design, Molecular Biosciences and Bioengineering
LAM, Janna, Institutional Support; BBA 2014, Hawai‘i
*LE, Thao, A, Associate Professor, Family and Consumer Sciences
*LEARY, James J. K., Assistant Specialist, Natural Resources and Environmental Management
LEE, Adrian I. D., Institutional Support; MBA 1990, Hawai‘i
*LEE, Chin Nyean, Specialist, O‘ahu, Human Nutrition, Food and Animal Sciences
LEONG, Gladys, Research Support, Molecular Biosciences and Bioengineering
*LEONARD, Kenneth W., Specialist, Tropical Plant and Soil Sciences
LEUNG, Ping Sun, Professor, Natural Resources and Environmental Management
*LEWIS-BIZAN, Selva, Assistant Professor, Family and Consumer Sciences
*LI, Qing Xiao, Pesticide Chemist, Molecular Biosciences and Bioengineering
*LI, Wenfang, Junior Researcher, Human Nutrition, Food and Animal Sciences
LI, Young, Associate Professor, Human Nutrition, Food and Animal Sciences
LICHT, Yvonne S., Research Associate, Tropical Plant and Soil Science
LILLICH, Georgina M., Research Support
LIM, Thomas, Director of Planning and Management Systems
LIN, Shu-Hwa, Associate Professor, Family and Consumer Sciences
*LITTON, Creighton M., Associate Professor, Natural Resources and Environmental Management
*MA, Hao, Junior Plant Pathologist, Plant and Environmental Protection Sciences
*MADAMOU, Marleine, Research Support
*MANSUR, Michael, Jr., Assistant Professor, Tropical Plant and Soil Sciences
*MARDUKA, D., Instrument Support, Plant and Environmental Protection Sciences
*MAHENDRA, Anil, Associate Professor, Human Nutrition, Food and Animal Sciences
*MANGUAR, Rhonda A., Associate Extension Agent, Natural Resources and Environmental Management
*MARTINI, Mary, Professor, Family Resources
*MASUO, Diane, Associate Professor, Family Resources
*MATSUOTO, K., Associate Researcher, Tropical Plant and Soil Sciences
*MATSUYAMA, Dennis T., Research Support, Natural Resources and Environmental Management
*MAU, Ronald F. L., Specialist, Plant and Environmental Protection Services
*MCDONALD, Ty G., Assistant Extension Agent, Tropical Plant and Soil Sciences
McDOWELL, Meryl L., Junior Researcher, Natural Resources and Environmental Management
McGEAHER, Robert, Institutional Support, Molecular Biosciences and Bioengineering
McGLONE, Katalina, Junior Researcher, Human Nutrition, Food and Animal Sciences, PhD 2009, Hawai‘i
*MEILO, Cathy L., Research Support, Hilo, Plant and Environmental Protection Sciences
*MELZER, Michael, Jr., Researcher
*MESSING, Russell H., Entomologist, Kaua‘i
*Meyer, Donna, Research Support, Plant and Environmental Protection Sciences
*MIN, Hosik, Assistant Specialist, Center on the Family
*Miyakawa, Susan C., Agronomist, Hilo, Tropical Plant and Soil Sciences
*Mura, Tomoko, Associate Professor, Natural Resources and Environmental Management
*Moots, Terri, Research Support, Plant and Environmental Protection Sciences
*MORITA, Janis, Director, Administrative Services; BA 1986, Hawai‘i; MBA 1990, Chaminade
*Muroaka, Janice M., Institutional Support; BBA 1979, Hawai‘i
*Nagai, Gary, Agriculture Research Technician, Plant and Environmental Protection Sciences
*Nagamine, Charles, Academic Support
*Nagano, Steven V., Extension Agent, O‘ahu, Natural Resources and Environmental Management
*Nagata, Norman, Assistant Extension Agent, Maui, Tropical Plant and Soil Sciences
*Nakamoto, Stacy T., Specialist, Marketing, Human Nutrition, Food and Animal Sciences
*Nakamura-Tengan, Lynn C., Associate Extension Agent, Human Nutrition, Food and Animal Sciences, Maui
*Nakayukui, Claire, Extension Agent, O‘ahu, Family and Consumer Sciences
*Nelson, Scott C., Plant Pathologist
*Nerukkar, Prabhita V., Associate Professor, Molecular Biosciences and Bioengineering
*Nguyen, Loc, Junior Researcher, Human Nutrition, Food and Animal Sciences
*Nie, Yanhan, Junior Specialist, Center on the Family
*Nii-no-Diponte, Ruth, Research Support
*Novotny, Rachel, Professor, Human Nutrition, Food and Animal Sciences
*Ogata, Desmond, Research Support, Agricultural Diagnostic Service Center
*Ogoshi, Richard M., Associate Biofuel Agronomist, Tropical Plant and Soil Sciences
*Okubo, Diane N., Institutional Support; BAcc 1992, Chaminade
*Oleson, Kristin L., Assistant Professor, Natural Resources and Environmental Management
*Onaga, Jodie S., Institutional Support; MA 2009, U of Phoenix
*Oshiro, Sherry, Research Support
*Paul, Robert E., Plant Physiologist and Chair, Tropical Plant and Soil Sciences
*Peretz, Eden, Junior Researcher, Plant and Environmental Protection Sciences
*Pitz, Karen, Junior Researcher
*Porter, Brad, Junior Researcher, Molecular Biosciences and Bioengineering
*Porter, Guy S., Research Support, Tropical Plant and Soil Sciences
*Presing, Germaine, Associate Professor, Molecular Biosciences and Bioengineering
*Radovich, Theodore J., Assistant Researcher, Tropical Plant and Soil Sciences
*Ranquez, Kimberly S., Institutional Support; MHRM 2007, Hawai‘i
*Rapouli, Madhusudhan, Junior Researcher, Molecular Biosciences and Bioengineering
*Reilly, Andrew H., Associate Professor, Family and Consumer Sciences
*Romero, Ysidro, Junior Researcher, Molecular Biosciences and Bioengineering
*Ron, Tetsu, Junior Researcher, Molecular Biology and Bioengineering
*Ross, Cynthia F., Junior Researcher, Human Nutrition, Food and Animal Sciences
*Rubinoff, Daniel, Professor, Plant and Environmental Protection Sciences
*Safer, Rose W., County Extension Agent, O‘ahu, Family and Consumer Sciences
*Sakaida, Casi, Institutional Support, Human Nutrition, Food and Animal Sciences; BBA 2012, Hawai‘i West Oahu
*Sako, Glenn T., Assistant Extension Agent, Tropical Plant and Soil Sciences
*Saulo, Aurora A., Specialist in Food Technology, Tropical Plant and Soil Sciences
*Segobiano, Mark A., Instructor, Human Nutrition, Food and Animal Sciences
*Selmants, Paul C., Junior Researcher, Natural Resources and Environmental Management
*Dates and institutions of degrees are listed under “Faculty.”
SETTLAGE, Rebecca L., Associate Extension Agent, Hawai‘i, Family and Consumer Sciences

*SEWAKE, Kelvin T., Extension Agent, Hilo

SHIMARUKU, Candace Y., Institutional Support

*SHIMABUKU, Robin S., Extension Agent

SHOW, Anne C., Associate Professor, Human Nutrition, Food and Animal Sciences

SHRESTHA, Raj, Research Associate, Family and Consumer Sciences

*SINGLETON, Paul W., Professor and Agronomist, Maui, Tropical Plant and Soil Sciences

*SIPES, Brent S., Chair and Plant Pathologist, Plant and Environmental Protection Sciences

SMITH, Josephine T., Academic Support, Natural Resources and Environmental Management

*SPAFFORD, Helen, Assistant Professor, Plant and Environmental Protection Sciences

SPIELMAN, Steven P., Research Support, Human Nutrition, Food and Animal Sciences; MS 1980, Hawai‘i

STERN, Ivette Rodrigues, Junior Specialist, Center on the Family

*STEVENSEN, Matthew H., Assistant Extension Agent, Kaua‘i, Human Nutrition, Food and Animal Sciences

*STEWARD, Maria L., Assistant Professor, Human Nutrition, Food and Animal Sciences

*STOKES, Ashley M., Associate Specialist, Human Nutrition, Food and Animal Sciences

*SU, Wei-Wen, Professor, Molecular Biosciences and Bioengineering

SU, Yuhua, Junior Researcher, Human Nutrition, Food and Animal Sciences

SUENO, Justin F., Research Support, Plant and Environmental Protection Sciences

*SUGANO, Jari S., Extension Agent, Oahu

SYLVA, Traci, Assistant Researcher, Molecular Biosciences and Bioengineering

TACHIBANA, Alvin, Research Support, Human Nutrition, Food and Animal Sciences

*TAMARU, James, Researcher & Director of Natural Resources and Environmental Management

*TAMARU, Clyde, Extension Specialist, Molecular Biosciences and Bioengineering

TANI, Jacqueline N., Institutional Support; BA 1989, MEd 2014, Hawai‘i

TANGUCHI, Glenn Y., Research Support, Plant and Environmental Protection Sciences

TARUTANI-WEISSMAN, Cathy, Academic Support

TAUYAN, Socorro C., Research Support, Human Nutrition, Food and Animal Sciences; BS 1972, Philippines; MPH 1995, Hawai‘i

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TURANO, Brian P., Assistant Specialist, Tropical Plant and Soil Sciences

TURANO, Helen M., Assistant Researcher, Tropical Plant and Soil Sciences

*UCHIDA, Janice Y., Associate Plant Pathologist

UCHIDA, Raymond, Manager, Agricultural Diagnostic Service Center and County Administrator, O‘ahu

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*VAUGHAN, Mehana D. B., Assistant Professor, Natural Resources and Environmental Management

VIJAYADEVA, Vinutha, Junior Researcher, Human Nutrition, Food and Animal Sciences

VILLALOBOS, Ethel M., Junior Researcher, Plant and Environmental Protection Sciences

*VINCENT, Douglas L., Chair and Animal Scientist, Human Nutrition, Food and Animal Sciences

WAGNER, Tom A., Research Associate

WANG, Koon-Hui, Assistant Professor, Plant and Environmental Protection Sciences

WANG, Jun, Junior Researcher, Molecular Biosciences and Bioengineering

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XIA, Yunqing, IT Specialist

*XU, Ronghui, Junior Researcher, Molecular Biosciences and Bioengineering

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*YAMAKAWA, Roy, Extension Agent, Kaua‘i, Tropical Plant and Soil Sciences

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*YANAGIDA, John F., Researcher, Natural Resources and Environmental Management

*YANAGIHARA, Joan, Research Support, Molecular Biosciences and Bioengineering

*YANAGIHARA, Karl, Research Support, Molecular Biosciences and Bioengineering

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YANG, Jimzang, Associate Professor, Human Nutrition, Food and Animal Sciences

YATES, Julian R. III, Specialist, Plant and Environmental Protection Sciences

YEE, Barbara W. K., Professor and Department Chair, Family and Consumer Science

*YOST, Russell S., Agronomist, Tropical Plant and Soil Science

*YOUKANHA, Adel, Junior Researcher, Natural Resources and Environmental Management

YOUNG, Colleen, Institutional Support; BA 1986, Hawai‘i

YOUNG, Michael, Agricultural Research Technician, Plant and Environmental Protection Sciences

YUAN, Sarah, Assistant Specialist, Center on the Family

YUEN, Christen Y. L., Junior Researcher, Molecular Biosciences and Bioengineering

YUEN, Sylvia, Director of the Center on the Family and Professor of Family Resources

*ZALESKI, Halina M., Specialist, Human Nutrition, Food and Animal Sciences

*ZAN, Hua, Assistant Researcher, Center on the Family

*ZEZE, Julia, Extension Agent, Human Nutrition, Food and Animal Sciences

**Undergraduate Education**

*CAMBRA, Ronald E., Assistant Vice Chancellor for Undergraduate Education

*CASTA, Jan, Administrative Officer; BBA 1985, Hawai‘i

**University of Hawai‘i Cancer Center**

*HEDGES, Jerri, Interim Director, UH Cancer Center

BLANCETTE, Patricia, Associate Director for Administration & Chief Operating Officer

ACOBA, Jared, Assistant Researcher

ALIMBUGUEN, Nida, Administrative & Fiscal Support Specialist

ARAKAKI, Lydia, Administrative & Fiscal Support Specialist

BANTUM, Erin O., Assistant Researcher

BAUMANN, Francine, Assistant Researcher

BERENBERG, Jeffrey L., Professor

BLANCO, Francis, Director, Facilities Management Office

BOUSHEY, Carol J., Associate Researcher

CARBONE, Michele, Researcher

CAO, Shueng, Assistant Researcher

CASSEL, Kevin, Assistant Researcher

CAYAWAS, Antonio, Auxiliary & Facilities Services Manager

CHANG, Amber, HR Specialist

*CHIN, Stephanie, Fiscal Administrator

CHI, Wen-Ming, Associate Researcher

*CO, Roland, Administrative & Fiscal Support Specialist

ELLIS, Henry Jr., Director, Fiscal Administration Office

FAGAN, Pebbles, Associate Researcher

*FARRAR, Christine, Assistant Specialist & Faculty Director of Microscopy, Imaging, & Flow Cytometry Shared Resource

FEI, Prisheen, Associate Researcher

FERNANDEZ, Analyn, Administrative & Fiscal Support Specialist

FLEIG, Andrea, Researcher

FRANKE, Adrian A. H., Specialist & Faculty Director of Analytical Biochemistry Shared Resource

FULGENCIO, Corie, Director, HR Office

FURUYA, Hideki, Junior Researcher

GAMIRE, Lana X., Assistant Researcher

GAWECKA, Joanna, Junior Researcher

GUIANG, Kriszel, Fiscal Administrator

GURUNG, Namrata, Operations Coordinator

HARRISON, Tammy J, Administrative & Fiscal Support Specialist

HERNANDEZ, Brenda Y., Faculty Director of Hawaii Tumor Registry, Associate Director of Pathology Shared Resource, & Associate Researcher

HERNANDEZ, Jamie, Fiscal Administrator

HERZOZ, Thaddeus A., Associate Researcher

HIRAMOTO, Matthew, Environmental & Health Safety Specialist

IRAHA, Janet, Administrative & Fiscal Support Specialist

ISSELL, Brian F., Researcher & Associate Director for Clinical Science & Translational Research

JARAMILLO, Leilani, Fiscal Administrator

JAYABAL, Panneerselvam, Junior Researcher

JL Junfang, Assistant Researcher

JIA, Wei, Researcher & Associate Director for Shared Resources

KAU, Michelle, Assistant Director, Fiscal Administration Office

KHA, Joanne, Administrative & Fiscal Support Specialist

LAU, Alan, Researcher

LAU, Ka Hung Phillip, IT Specialist

LE MARCHAND, Lois, Researcher

LIM, Unihee, Associate Researcher

LOO, Lenora W. M., Assistant Specialist

MASKARINEC, Gertraud, Researcher

MATSUDA, Erin, Fiscal Administrator

MATTIER, Michelle, Assistant Researcher

MUNECHIKA, Guy, Auxiliary & Facilities Services Officer

NAKAMURA, Lesley, Fiscal Administrator

NAKASHIMA, Jaymi, Administrative & Fiscal Support Specialist

NI, Yan, Assistant Specialist

OHKAWA, Nana, Public Information Officer

OKIMOTO, Gordon S., Assistant Specialist & Co-Director of Biostatistics & Informatics Shared Resource

PAGANO, Ian S., Assistant Specialist

PARK, Song-Yi, Assistant Specialist

PASTORINO, Sandra, Assistant Researcher

PENNER, Reinhold, Researcher

PKHRELL, Pallav, Assistant Researcher

POWERS, Amy A., Associate Clinical Researcher & Co-Director of Pathology Shared Resource

RAMOS, Joe, Professor & Director of Cancer Biology Program

REED, Kevin, Administrative & Fiscal Support Specialist

REMS, Hazel, Senior IT Specialist

RICHARDS, Wendy, Director, IT

ROSSER, Charles, Researcher & Director of Clinical & Translational Research Program

SCHRUNK, Jason, HR Specialist

SHL Geng-Xuan, Assistant Researcher

SHIBUYA, Chad, Administrative & Fiscal Support Specialist

SHIGEMASA, Sharon, Events & Information Coordinator

SHVETSOV, Yurii, Assistant Researcher

SONSON, Harry, Web Developer

SUGIHARA, Abby, Administrative & Fiscal Support Specialist

TIIRIKAINEN, Maarit, Associate Specialist & Faculty Director of Pathology Shared Resource

TSUHOTA, Tina, Fiscal Administrator

TURKSON, James, Researcher & Director of Natural Products & Experimental Therapeutics Program

UYEDA, Grant, Administrative & Fiscal Support Specialist
University of Hawai‘i Press

Duckworth, Michael P., Director; BA 1989, Reed College; MS 1990, MIA 1991, Columbia

ABE, Carol S., Advertising and Promotion Manager; BA 1974, Hawai‘i

ACNO, Lucile C., Production Editor; BBA 1979, MBA 1987, Hawai‘i

Barbasas, Santos B., Jr., Production and Design Manager; BFA 1986, Hawai‘i

Chun, Cindy E. K. C., Production Editor; BBA 1981, Hawai‘i

Chun, Stephanie W. Y., Editorial Associate; BA 1986, Hawai‘i

Clifford, Rebecca D., Journals Managing Editor; BA 2007, CSU-Chico; MA 2013, Hawai‘i

Cosseboom, Joel M., Business Manager; BA 1994, UC Santa Barbara; MBA 2002, Hawai‘i

Crosby, Patricia E., Executive Editor; BA 1976, Colorado; MA 1978, Hawai‘i

Dunn, Cheri J., Managing Editor; BA 1987, MA 1994, Hawai‘i

Higa, Kyle S., Business Support Specialist; BA 2002, North Carolina State

Hirashima, Steven, Publicity and Promotion Manager; BS 1985, Southern California

Ikeda, Masako I., Acquisitions Editor; BA 1986, Sophia U (Japan); MA 1991, PhD 1996, Hawai‘i

Kaneshiro, Norman, Subscriptions Manager; BA 2001, Hawai‘i

Kawai, Colin A., Marketing Manager; BA 1976, Hawai‘i; MBA 1989, Eastern Colorado

Kelley, Pamela W., Acquisitions Editor; BA 1977, Pomona; MA 1983, Hawai‘i

Knutsen, Trond, Digital Publishing Manager; BA 2001, LA Trobe; MA 2004, Oxford Brookes

Li, Danny, Business Support Specialist; BA 1992, Kapiolani CC

Little, Nadine T., Acquisitions Editor; BA 1986, Cornell; MA 1989, Case Western Reserve

Matsuo-Chun, Julie S., Production Editor; BA 1994, Western Washington

Melton, Maureen D., Production Editor; BFA 1994, Hawai‘i

Miyasato, Terri S. L., Production Support Specialist

Murakana, Royden T., Manager, EWP Export Books; BBA 1982, Hawai‘i

Nishimoto, Kiera A., Marketing Officer; BA 2002, Hawai‘i

Tang, Debra D. S., Editorial Associate; BA 1996, Hawai‘i; MA 1999, Toronto

To lentino, Elaine M., Marketing Specialist; BA 2009, Hawai‘i

Wen, Grace Y., Journals Production Editor; BA 2000, UCLA; MA 2007, Johns Hopkins

UH Translational Health Science Simulation Center (UH THSSC)

Wong, Lorraine C., Director, Associate Professor of Nursing; BS Hawai‘i; MS Columbia; PhD Hawai‘i

Deutsch, Melodee J., Associate Director for Quality and Patient Safety; BSN Temple; MSN, MPH Hawai‘i

Hanberg, Allen D., Associate Director for Graduate Simulation; BSN, Weber State; MSN U of Phoenix; PhD Northern Colorado

Ing, Dana, Associate Director for Pediatrics and Women’s Health; BS, MS Hawai‘i

Oda, Kathleen, Simulation Technician; BS, Hawai‘i

Sumida, Brian, Simulation Technician; BS, Hawai‘i

Thal, Lauren, Simulation Coordinator; BS Hawai‘i

Todoki, Susan, Simulation Coordinator; BS Hawai‘i

Wong Chang, Hector, Information Technology Audio/Visual Specialist; BS, Hawai‘i

Waikiki Aquarium

Rossiter, Andrew, Director; PhD 1983, Wales (UK)

Apo, Byron, Alumni Relations Officer; MBA 2004, Chaminade

Banguill, Donnieson, Administrative Specialist; BS 1993, HPU

Chan, Noreen, Aquarium Biologist; BA 1994, Hawai‘i

Ciletti, Jessica, Research Associate; BS 2005, William Smith College

Crow, Gerald, Facility Manager; BS 1980, San Diego State

Cutitta, Jaci, Info, Events, Publications; BA 1999, Hilo

Ehrhart, Guarin, Academic Support; MEd 2000, Florida Atlantic U

Foley, Marylou, Community Outreach Coordinator; BA 1969, Washington

Fothergill, Gerard, Visitor Services Coordinator; BA 1995, U Charles De Gaulle

Fujitani, Ruma, Events and Membership Manager; BA 1993, Hawai‘i

Ige, Kelely, Graphic Artist; BFA 2011, Hawai‘i

Katayama, Mariko, Aquarium Biologist; BA 2000, CSU Long Beach

Lentes, Gwendolen, Research Associate; BS 2011, HPU

Lodis, Lindsay, Info, Events, Publication; MS 2010, MA 2012, Maine

Ma, Ling, Administrative Assistant; BBA 2011, Hawai‘i

Matthews, Mercedes, Volunteer Coordinator; BA 2009, Staint Mary’s College

Nelson, Alan, Research Associate; BA 1983, Hawai‘i

Nidee, Kelley A., Research Associate; BA 2001, Hawai‘i

Roney, Mary P., Academic Support; BA 1996, Hilo

Soediamo, Indahwati, Giftshop Manager; BA 1989, Indonesia

Spencer, Dean K., Academic Support; BS 2000, Chaminade

Young, Mark, IT Specialist; BS 2003, U Phoenix

Water Resources Research Center

*Lerner, Darren T., Interim Director

*Babcock, Roger W., Associate Researcher

*Batenni, Sayed, Assistant Researcher

*Cusick, John, Assistant Specialist

*El-Kadi, Aly J., Associate Director and Researcher

Hirakawa, Patricia Y., Publications Specialist; BFA 1981, BA 1990, Hawai‘i

Kam, April W. L., Publications Specialist; BFA 1980, Hawai‘i

*Kirs, Marek, Assistant Researcher

Lichfwa, Joseph, Research Support; BS 1969, Pimburg

*Moravcik, Philip S., Junior Specialist

Affiliates

Burrnett, Maxine, Associate Professor of Law

Coffman, Makena, Assistant Professor of Urban and Regional Planning

Curts, George D., Affiliate Professor and Lecturer, Natural Sciences, UH Hilo; BS 1952, North Texas

Dashiell, Eugene P., Environmental Planning Center

Curtis, George D., Affiliate Professor and Lecturer, Natural Sciences, UH Hilo; BS 1952, North Texas

Dashiel, Eugene P., Environmental Planning Center

Coffman, Makena, Assistant Professor of Urban and Regional Planning

Burkett, Maxine, Associate Professor of Law

Coffman, Makena, Assistant Professor of Urban and Regional Planning

Curts, George D., Affiliate Professor and Lecturer, Natural Sciences, UH Hilo; BS 1952, North Texas

Dashiell, Eugene P., Environmental Planning Center

*Konan, Denise E., Professor of Economics

Miller, Jacobin N.; BA 1956, UC Riverside; MS 1966, Scripps Institution of Oceanography; PhD 1997, Wales (UK)

Ray, Chittaranjan, Researcher; Ray, BS 1980, Orissa U of Agriculture and Technology; MS 1984, Texas Tech U; PhD 1994, Illinois-Urbana Champaign

Takemoto, Helene Y., U.S. Army Corps of Engineers; AB 1972, Wells; MS 1982, Hawai‘i

*Wilkens, Roy, Emeritus Faculty in HIGF

*Dates and institutions of degrees are listed under “Faculty.”
Academic Year Starts at the beginning of the fall semester, ends at the close of the spring semester; does not include summer sessions.

Accreditation Official certification by an external academic organization that a college, school, or academic unit meets minimum requirements for academic achievement, curriculum, facilities, etc.

Add Period Time at the beginning of each semester during which registered students may enroll in additional courses.

Articulated General Education Courses UH system courses reviewed by the systemwide Articulation Standing Committees and accepted by campus core/curriculum committees as meeting undergraduate requirements at one or more system campuses.

Auditors Regularly admitted students who register, with the consent of the instructor, for informational instruction only and who receive no credit. They do not take course examinations and the extent of their classroom participation is at the instructor’s discretion. Auditors are generally not allowed in art studio, laboratory science, mathematics, elementary and intermediate Hawaiian and foreign languages, creative writing, English composition, physical education, speech and other performance courses or in classes where they might displace credit students. Audit courses are entered on the student’s transcripts with a grade of L and are subject to regular tuition and fee charges.

Bachelor’s Degree Undergraduate degree signifying successful completion of the Mânoa General Education Core, major, elective, and credit requirements of UH Mânoa and any academic unit.

Backtracking Completion of a lower-level or prerequisite course after (or while) taking an advanced course. Additional credit and grade points are not awarded for lower-level courses if they are taken after or concurrently with the advanced course for which they are explicitly or implicitly prerequisites.

Classified Students (Graduate) Students admitted by the Graduate Division to a program that offers a graduate certificate, or a master’s or doctoral degree.

Classified Students (Undergraduate) Students who intend to earn an undergraduate degree and/or are admitted into a degree-granting college or school such as Arts and Sciences, Business, Education, Engineering, etc.

Community Colleges Campuses within the UH system that usually offer lower division courses and grant two-year degrees and certificates.

Conditional Students (Graduate) Students admitted to graduate programs on the condition that they make up academic deficiencies or other requirements within a prescribed period of time.

Continuing Students For registration purposes, those who were registered for the previous semester (fall or spring), are in good standing, have not completed withdrawal, have not graduated in their current classification, and intend to register for the upcoming semester.

Co-requisite A course that must be taken in conjunction with and at the same time as another course. Co-requisites are indicated in the course descriptions.

Core Requirements See “Undergraduate General Education Requirements.”

Credit Overload (Graduate) For classified graduate students, registration for more than 16 credits (9 credits for graduate assistants) in any one semester. Permission from the graduate dean is required.

Credit Overload (Undergraduate) Registration for more than 19 UH Mânoa credit hours in any one semester for undergraduate and professional diploma students. Permission from the appropriate college/school dean is required. The request for credit overload is processed during late registration only.

Credits (or Semester Credit Hours) Earned after successful completion (pass) of a course. If students fail a course, they have only attempted (but not earned) the credits for the course. Three semester credits are approximately equivalent to three 50-minute meeting periods per week in a 15-week semester.

Cross-Listed Courses Courses whose contents are identical and are jointly offered by more than one department. Although the departments and course numbers are different—for example, AMST 365 and HIST 379—these courses are the same.

Curriculum All the courses of study offered by UH Mânoa. May also refer to a particular course of study (major) and the courses in that area.

Discipline A branch of knowledge or teaching. Typically refers to an area of study or a major field.

Diversification Requirement (Undergraduate) Specified courses in the General Education Core intended to assure that every student has a broad exposure to different domains of academic knowledge, while at the same time allowing flexibility for students with different goals and interests.

Double Major Multiple majors falling under one degree will normally be approved for students who show promise of success in both, provided there is sufficient divergence between the majors. No one course may be used to satisfy more than one major requirement.

Drop Period Time at the beginning of each semester during which registered students may drop unwanted courses and not have them appear on their transcripts.

Early-Admits Academically superior and accomplished youths under 18 years of age who are continuing high school students admitted to UH Mânoa to take specific courses for which they are qualified.

Electives Courses not designated as part of the General Education Core, college/school, or major requirements. Students should consult their major advisors and college advisors to discuss the selection of electives.

Emeriti Faculty Recognition, designation, and privileges given by the UH Board of Regents to faculty members who have retired but still retain ties to UH Mânoa.

Excess Credit Policy (Undergraduate) Students who, by the end of any semester, have earned 24 credit hours beyond those required for graduation and have fulfilled all specific program and UH Mânoa requirements may graduate by action of their college or school.
Focus Requirement (Undergraduate) Specified courses in the UH Mānoa Graduation Requirements identifying important skills and discourses necessary for living and working in diverse communities.

Foundation Requirement (Undergraduate) Specified courses in the General Education Core intended to give students skills and perspectives that are fundamental to undertaking higher education.

Freshmen Students who have earned 0–29.99 semester credit hours.

Full-Time Students For academic purposes, undergraduates carrying 12 or more credits per semester or graduates carrying 8 or more credits.

General Education Core Specified courses labeled “Foundation” or “Diversification” that are intended to give students fundamental college skills and perspectives and broad exposure to different domains of academic knowledge.

Grade Point Average (GPA) Determined by first multiplying the number of credits for each course taken for a letter grade by the points earned for that course (i.e., A+ is 4.0, A is 4.0, A- is 3.7, B+ is 3.3, B is 3, B- is 2.7, C+ is 2.3, C is 2, C- is 1.7, D+ is 1.3, D is 1, D- is 0.7 and F is 0), then by adding all the points, and finally by dividing total grade points by the total number of credits attempted for courses in which letter grades were given.

Graduate Assistants Graduate students hired by UH Mānoa as teaching or research assistants.

Graduate Courses Courses offered as part of a graduate degree program, numbered 600–800 level.

Graduate Faculty Members of the UH Mānoa community eligible to advise classified graduate students.

Graduate Record Examination (GRE) A standardized test required for admission to many graduate fields of study.

Graduate Students Students admitted to the Graduate Division to pursue advanced degrees.

Hawaiian or Second Language Requirement (Undergraduate) A special General Education graduation requirement intended to prepare students to function in a global society and provide an educational experience with an international dimension. The Hawaiian or Second Language (HSL) requirement varies by UH Mānoa college/school. Students should check with their college/school advisor to learn about their requirement.

Incomplete Grades With the instructor’s approval, students may receive a grade of I if they are unable to complete a small, but important part of a course’s requirements by semester’s end but are committed to doing so by a specified deadline.

Interdisciplinary Studies An undergraduate program within the Office of Undergraduate Education that allows students to design their own major.

Introductory Courses All 100-level courses and those 200-level courses without explicit college course prerequisites.

Juniors Students who have earned 60–89.99 semester credit hours.

Lower Division Courses Freshman- and sophomore-level courses that generally do not require any prerequisite courses and are numbered 100–299.

Major The area of academic concentration or specialization in which the degree is conferred.

Maximum Registration No more than 19 credit hours per semester for undergraduate and professional diploma students without special approval from a college dean. Graduate students are limited to 16 credit hours per semester (9 for graduate assistants) unless special approval is given.

Minor Limited concentration of courses in an area other than the major and relating to an approved baccalaureate degree.

Part-Time Students For academic purposes, undergraduates carrying fewer than 12 credits per semester, or graduates carrying fewer than 8 credits per semester.

Placement Examinations Noncredit tests used to measure a student’s proficiency in a specific subject area in order to determine the appropriate level of courses in which to enroll.

Post-baccalaureate Unclassified Students Those who have earned a bachelor’s degree from a regionally accredited college or university and wish to enroll as unclassified students.

Pre-professional Programs Programs designed to prepare students to pursue admission into professional programs, such as dentistry, law, medicine, or veterinary medicine.

Prerequisite A necessary condition for enrollment in a course. Prerequisites for courses usually consist of a previous course or courses in a related subject and/or the instructor’s consent. Prerequisites are specified in the course descriptions.

Residence This word is used in several ways in this Catalog: (1) to denote registration in a regular session (i.e., when a student is “in residence” during the fall or spring semesters); (2) to denote the period of time that a student must be registered at UH Mānoa in order to be eligible for graduation (i.e., academic residence); (3) to denote a student’s state of residence (e.g., Hawai‘i) to determine if nonresident tuition must be paid (i.e., legal residence); (4) to indicate the student’s place of residence (i.e., living quarters).

Residents Individuals at any level of post-graduate medical education in a program accredited by the Accreditation Council for Graduate Medical Education (ACGME).

Returning Students Students resuming studies after staying out of school for one semester or longer.

Sabbatical A leave of absence granted to UH Mānoa faculty members for research, professional improvement, etc.

Seniors Students who have earned 90 or more semester credit hours.

Sophomores Students who have earned 30–59.99 semester credit hours.

Test of English as a Foreign Language (TOEFL) Test required of students whose first language is not English.

Transcript Official record of courses and grades earned at a secondary or postsecondary institution.

Transfer Students Students admitted to UH Mānoa who have previously attended another college or university.

Tuition Waiver An exemption from the requirement to pay UH Mānoa tuition. Waivers awarded by the UH can range from partial to full waivers and do not include student fees.

UH System The state of Hawai‘i’s postsecondary education system, comprised of 10 campuses and other research and learning facilities throughout the islands. In addition to UH Mānoa, it includes UH Hilo, UH West O’ahu, and the seven campuses of the UH Community Colleges.

Unclassified Students Students who have not been accepted into a degree or certificate program but who have been admitted into Outreach College and may enroll in regular credit courses and graduate courses with the permission of the instructor.

Undergraduate Students Students who have not earned a bachelor’s degree.

Upper Division Courses Junior- and senior-level courses, numbered 300–499, which generally have prerequisites.

Variable Credit Courses Courses in which the number of credits to be earned is determined in advance by the student and instructor.

Withdrawal Grades Grades of W are given for courses from which the student has officially withdrawn with the approval of the instructor and the student’s college dean. Withdrawals are only approved until the end of the ninth week.

Writing-Intensive Courses Courses that put emphasis on written work as part of the regular course of study and are officially designated as WI sections. WI sections are identified in each semester’s Registration Guide (formerly Schedule of Classes).