



UNIVERSITY of HAWAII®

HILO

2014-2015 University Catalog

This printed catalog is an abridged version. For the complete catalog, please see the online version at <http://hilo.hawaii.edu/catalog/>

Prospective students who have questions may contact:

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200 W. Kāwili Street, Hilo, HI 96720-4091**

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please contact University Disability Services Office at (808) 932-7623 or 932-7002 (TTY).

It is the goal of the University of Hawai'i at Hilo to publish a University catalog that provides both an introduction and a practical, comprehensive guide to the programs, courses, policies, and related information regarding the University.

Please direct any omissions or inaccuracies to: Catalog Editor,
Division of Student Affairs, University of Hawai'i at Hilo, 200 W. Kāwili Street, Hilo, HI 96720-4091;
(808) 932-7447 or catalog@hawaii.edu.

Disclaimer

This document is published for informational purposes only. It provides general information about the University of Hawai'i at Hilo's programs and services and summarizes major policies and procedures as they relate to students. Because this university catalog, however, is published annually or less frequently, it may not always reflect the most recent information concerning programs, courses, services, regulations, policies, procedures, and other matters contained herein. Students should check with their advisors to obtain the most recent academic information regarding their departments, courses, and programs. Students should check with appropriate student affairs professionals for updated information about other facets of campus student life.

The University reserves the right to change, delete, supplement, or otherwise amend at any time any information, requirements, and policies contained in this catalog. This right extends to tuition and fee charges which are subject to change in accordance with Hawai'i state law and/or actions by the Board of Regents or University administration.

Table of Contents

Campus Maps	inside front & back covers
Degrees and Certificates	3
Academic Calendar	4
Services and Resources	5
Admissions	6
Tuition and Fees	10
Financial Aid	12
Academic Regulations	15
Institutional Information and Policies	22
Baccalaureate Degree Requirements	25
College of Agriculture, Forestry, and Natural Resource Management	31
Animal Science—Livestock Production Speciality.....	31
Animal Science—Pre-Veterinary Speciality.....	31
Aquaculture Speciality.....	32
Tropical Plant Science and Agroecology Specialty.....	33
Tropical Horticulture Specialty.....	34
Agriculture Minor.....	34
Beekeeping Certificate.....	35
Forest Resource Management and Conservation.....	35
Plant Tissue Culture Certificate.....	35
Tropical Farming Certificate.....	35
College of Arts and Sciences	36
Administration of Justice.....	36
Anthropology.....	37
Global Engagement Certificate.....	37
Art.....	38
Astronomy.....	39
Biology.....	40
Chemistry.....	43
Communication.....	45
Computer Science.....	46
Computer App Development Specialization Certificate.....	46
Database Management Certificate.....	47
E-Commerce Technology and Business Certificate.....	47
Education.....	47
Engineering.....	48
English.....	49
Teaching English as a Second Language Certificate.....	49
Environmental Studies/Science.....	50
Environmental Studies Certificate.....	51
Geography.....	52
Planning Certificate.....	52
Geology.....	53
Earth and Space Science Minor.....	54
History.....	54
Kinesiology and Exercise Sciences.....	56
Languages.....	57
Japanese Studies.....	57
Chinese Studies Certificate.....	57
Filipino Studies Certificate.....	58
Liberal Studies.....	58
Marine Science.....	59
Marine Option Program Certificate.....	61
Mathematics.....	62
STEM Research Honors Certificate.....	62
Natural Science.....	63
Nursing.....	64
Pacific Islands Studies Certificate.....	66
Performing Arts.....	67
Performing Arts Certificate.....	69
Philosophy.....	67
Physics.....	70
Political Science.....	71
International Studies Certificate (International Relations).....	71
Pre-Pharmacy Program.....	72
Psychology.....	72
Sociology.....	73
Women's Studies Certificate.....	73
College of Business and Economics	74
Business Administration.....	74
Accounting.....	75
Business Administration Certificate.....	76
International Studies Certificate (Tourism).....	76
Economics.....	77
Daniel K. Inouye College of Pharmacy	78
Bachelor of Arts in Pharmacy Studies.....	78
Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language	79
Hawaiian Studies.....	79
Hawaiian Language Certificate.....	80
Hawaiian Culture Certificate.....	80
Multidisciplinary Hawaiian Studies Certificate.....	81
Linguistics Program.....	81
Contemporary Indigenous Multilingua Certificate.....	82
College of Continuing Education and Community Service	83
Summer Session.....	83
Travel Study Programs.....	83
North Hawai'i Education and Research Center (NHERC).....	83
Fitness for Life.....	84
SeniorNet.....	84
English Language Institute (ELI).....	84
Undergraduate Courses	85
Graduate Programs	133
Graduate Admissions Policies & Procedures.....	133
Graduate Tuition and Fees.....	135
Graduate Registration and Degree Requirements.....	137
China-U.S. Relations.....	142
Counseling Psychology.....	143
Education.....	144
Teaching.....	145
Kahuawaiola Indigenous Teacher Education Program.....	146
Indigenous Language and Culture Education.....	147
Hawaiian Language and Literature.....	148
Hawaiian and Indigenous Language Culture Revitalization.....	149
Nursing Practice.....	150
Pharmacy.....	151
Pharmaceutical Sciences.....	152
Clinical Psychopharmacology.....	153
Tropical Conservation Biology and Environmental Science.....	154
Graduate Courses	155
Index	170

Degrees and Certificates

Bachelor's Degrees

Administration of Justice, B.A.
 Accounting, B.B.A.
 Agriculture, B.S.*
 Anthropology, B.A.*
 Art, B.A.*
 Astronomy, B.S.*
 Biology, B.A., B.S.*
 Business Administration, B.B.A.*
 Chemistry, B.A.*
 Communication, B.A.*
 Computer Science, B.S.*
 Earth and Space Science Minor
 Economics, B.A.*
 English, B.A.*
 Environmental Science, B.S.
 Environmental Studies, B.A.
 Geography, B.A.*
 Geology, B.A., B.S.*
 Hawaiian Studies, B.A.*
 History, B.A.*
 Japanese Studies, B.A.*
 Kinesiology and Exercise Sciences, B.A.
 Liberal Studies, B.A.
 Linguistics, B.A.*
 Marine Science, B.A., B.S.*
 Mathematics, B.A.*
 Natural Science, B.A.*
 Nursing, B.S.
 Performing Arts, B.A.
 Pharmacy Studies, B.A.
 Philosophy, B.A.*
 Physics, B.A.*
 Political Science, B.A.*
 Psychology, B.A.
 Sociology, B.A.*

* Baccalaureate and minor offered

Master's Degrees

China-U.S. Relations, M.A. - *Not accepting new applicants*
 Clinical Psychopharmacology, M.S.
 Counseling Psychology, M.A.
 Education, M.Ed.
 Hawaiian Language and Literature, M.A.
 Indigenous Language and Culture Education, M.A.
 Teaching, M.A.
 Tropical Conservation Biology & Environmental Science, M.S.

Doctoral Degrees

Indigenous Language and Culture Revitalization, Ph.D.
 Nursing Practice, D.N.P.
 Pharmaceutical Sciences, Ph.D.
 Pharmacy, Pharm. D.

Certificate or Licensure Programs

Accounting
 Asia-Pacific Economic Relations
 Beekeeping
 Business Administration
 Chinese Studies
 Computer Application Development Specialization
 Contemporary Indigenous Multilingua
 Database Management
 E-Commerce, Technology, and Business
 Educational Studies
 Environmental Studies
 Filipino Studies
 Finance
 Forest Resource Management and Conservation
 Global Engagement
 Hawaiian Culture
 Hawaiian Language
 International Studies (International Relations)
 International Studies (Tourism)
 Kahuawaiola Indigenous Teacher Education
 Marine Option Program
 Multidisciplinary Hawaiian Studies
 Pacific Islands Studies
 Performing Arts
 Planning
 Plant Tissue Culture
 STEM Research Honors
 Teaching English as a Second Language
 Tropical Farming
 Women's Studies

Academic Calendar 2014-2015

Fall 2014 Semester*

Holiday: Statehood Day.....	Aug 15 (F)
Orientation, Advising and Registration.....	Aug 18-22 (M-F)
Last Day to Register without \$30 Late Fee.....	Aug 24 (Su)
Last Day to Withdraw from Classes without Owing Tuition & Fees	Aug 24 (Su)
First Day of Instruction	Aug 25 (M)
<i>(A \$30.00 Late Registration Fee will be charged for new registrations on or after the first day of instruction)</i>	
Last Day to Register or Add Classes	Aug 29 (F)
Late Add with Permission Only.....	Aug 30-Sep 5 (Sa-F)
Holiday: Labor Day	Sep 1 (M)
Last Day to Completely Withdraw from Classes without Owing Tuition	Sep 5 (F)
<i>(If you register and decide to not attend, you must officially withdraw by this date. Failure to withdraw will result in a financial obligation to the UH System and may result in an "F" for the class(es) not attended. Student fees are still owed.)</i>	
Last Day to Exercise Credit/No Credit	Sep 12 (F)
Last Day to Submit Auditors Form.....	Sep 12 (F)
Final Deadline to Apply for Fall 2014 Graduation	Sep 12 (F)
Last Day to Drop Classes Online without "W"	Sep 15 (M)
<i>(To drop ALL your UH Hilo classes you must turn in a Complete Withdrawal Form)</i>	
Last Day to Receive 50% Refund of Tuition for Complete Withdrawals	Sep 15 (M)
<i>(If you have not yet paid for your tuition, your account will be charged for 50% of the tuition and all fees)</i>	
No refunds will be issued after this date	Sep 15 (M)
Priority Deadline to Apply for Spring 2015 Graduation	Oct 1 (T)
Last Day to Drop a Class Online with "W"	Oct 17 (F)
<i>(To drop ALL your UH Hilo classes you must turn in a Complete Withdrawal Form)</i>	
"I" Removal Deadline: Student to Instructor.....	Nov 3 (M)
Last Day to Apply for Credit-by-Exam for Fall	Nov 3 (M)
Graduate Thesis/Dissertation to Committee Deadline....	Nov 14 (F)
Holiday: Veteran's Day	Nov 11 (T)
"I" Removal and Change of Grade Deadline: Instructor to the Office of the Registrar	Nov 17 (M)
Last Day to Submit Credit-by-Exam Results to Office of the Registrar.....	Nov 17 (M)
Graduate Thesis Defense/Dissertation Deadline.....	Dec 1 (M)
Holiday: Thanksgiving Day	Nov 27 (R)
Non-Instructional Day	Nov 28 (F)
Graduate Form 3: Thesis/Dissertation to Library & Office of the Registrar Deadline	Dec 11 (R)
Last Day to Apply for Spring 2015 Classified Admission	Dec 1 (M)
Last Day of Instruction.....	Dec 11 (R)
Last Day to Completely Withdraw (from all classes) with a "W"	Dec 11 (R)
Final Examinations	Dec 15-19 (M-F)
Fall Semester Ends	Dec 19 (F)
Fall 2014 Commencement	Dec 20 (Sa)
Final Grades Due in MyUH at 12 noon	Dec 22 (M)
Graduate Form 4 for Fall Graduates: Certificate of Completion of Degree Requirements due to the Office of the Registrar. No extensions.	Jan 16, 2015 (F)
Early Registration for Spring 2015* Advising Begins	TBA
Early Registration Begins via MyUH Portal.....	TBA

Spring 2015 Semester*

Holiday: New Year's.....	Jan 1 (R)
Orientation, Advising and Registration.....	Jan 7-9 (W-F)
Last Day to Withdraw from Classes without Owing Tuition & Fees	Jan 11 (Su)
Last Day to Register without \$30.00 Late Fee.....	Jan 11 (Su)
First Day of Instruction	Jan 12 (M)
<i>(A \$30.00 Late Registration Fee will be charged for new registrations on or after the first day of instruction)</i>	
Last Day to Register or Add a Class.....	Jan 16 (F)
Late Add with Permission Only.....	Jan 17-23 (Sa-F)
Holiday: Martin Luther King Day	Jan 19 (M)
Last Day to Completely Withdraw from Classes without Owing Tuition	Jan 23 (F)
<i>(If you register and decide to not attend, you must officially withdraw by this date. Failure to withdraw will result in a financial obligation to the UH System and may result in a "F" for the class(es) not attended. Student fees are still owed.)</i>	
Last Day to Exercise Credit/No Credit	Jan 30 (F)
Last Day to Submit Auditors Form.....	Jan 30 (F)
Final Deadline to Apply for Spring 2015 Graduation ...	Jan 30 (F)
Last Day to Drop Classes Online without "W"	Feb 2 (M)
<i>(To drop ALL your UH Hilo classes you must turn in a Complete Withdrawal Form)</i>	
Last Day to Receive 50% Refund of Tuition for Complete Withdrawals	Feb 2 (M)
<i>(If you have not yet paid for your tuition, your account will be charged for 50% of the tuition and all fees)</i>	
No refunds will be issued after this date	Feb 2 (M)
Holiday: President's Day.....	Feb 16 (M)
Last Day to Drop a Class Online with "W"	Mar 6 (F)
<i>(To drop ALL your UH Hilo classes you must turn in a Complete Withdrawal Form)</i>	
Spring Recess	Mar 23-27 (M-F)
Holiday: Prince Kuhio Day	Mar 26 (R)
"I" Removal Deadline: Student to Instructor.....	Apr 1 (W)
Last Day to Apply For Credit-by-Exam for Spring	Apr 1 (W)
Priority Deadline to Apply for Summer & Fall 2015 Graduation.....	Apr 1 (W)
Graduate Thesis/Dissertation to Committee Deadline....	Apr 3 (F)
"I" Removal and Change of Grade Deadline: Instructor to Office of the Registrar	Apr 15 (W)
Last Day to Submit Credit-by-Exam Results to the Office of the Registrar.....	Apr 15 (T)
Holiday: Good Friday	April 3 (F)
Graduate Thesis/Dissertation Defense Deadline.....	Apr 17 (M)
Graduate Form 3: Thesis/Dissertation to Library and Office of the Registrar Deadline	Apr 24 (F)
Last Day of Instruction.....	May 6 (W)
Last Day to Completely Withdraw with a "W"	May 6 (W)
Final Examinations	May 11-15 (M-F)
Spring Semester Ends.....	May 15 (F)
Spring 2015 Commencement.....	May 16 (Sa)
Final Grades Due in MyUH portal at 12 noon	May 18 (M)
Graduate Form 4 for Spring Graduates: Certificate of Completion of Degree Requirements due to the Office of the Registrar. No extensions.	June 12 (F)
Final Deadline to Apply for Summer 2015 Graduation	June 12 (F)
Last Day to Apply for Fall 2015 Classified Admission...	July 1 (W)
Early Registration for Fall 2015* Advising Begins	TBA
Early Registration Begins via MyUH Portal.....	TBA
Summer 2015 Graduate Thesis/Dissertation Deadlines* Graduate Thesis/Dissertation to Committee Deadline..	June 19 (F)
Graduate Thesis/Dissertation Defense Deadline.....	July 10 (F)
Graduate Form 3: Thesis/Dissertation to Library and Office of the Registrar	July 24 (F)
Graduate Form 4 for Summer Graduates: Certificate of Completion of Degree Requirements due to the Office of the Registrar. No extensions.	Aug 7 (F)

* Subject to change without notice. Rev. 5/5/14.

Services and Resources

Advising Center

Portable Building 2, Room 103
(808) 974-7688
<http://hilo.hawaii.edu/studentaffairs/advising/>

Academic Computing Services

(808) 974-7768
<http://hilo.hawaii.edu/uhh/otdl/acs/>

Advising Center

Student Services Center, Room E-203
(808) 932-7776
<http://hilo.hawaii.edu/~advising/home>

Board of Regents and Administration List

<http://hilo.hawaii.edu/catalog/board-of-regents-and-administration.html>

Business Services

Building 300A, Room 112
(808) 932-7397
<http://hilo.hawaii.edu/uhh/bo/>

Campus and Community Service

Campus Center, Room 316
(808) 933-1907
<http://hilo.hawaii.edu/campuscenter/service/>

Campus Recreation

Student Life Center
(808) 933-7626
<http://hilo.hawaii.edu/rec/>

Career Development Services

Campus Center, Room 202A
(808) 974-7687
<http://career.uhh.hawaii.edu/>

Counseling Services

Student Services Building, 2nd floor
(808) 974-7399
<http://hilo.hawaii.edu/studentaffairs/counseling/>

Dean of Students

Student Services Center (SSC), Room W-305
(808) 932-7445
<http://hilo.hawaii.edu/studentaffairs/conduct/index.php>

Disability Services

Hale Kauano'e A Wing Lounge
Phone: V (808) 933-0816, TTY (808) 933-3335
<http://hilo.hawaii.edu/studentaffairs/uds/>

Distance Learning

(808) 974-7664
<http://hilo.hawaii.edu/academics/dl/>

Exchange Programs

National Student Exchange (NSE)
Campus Center, Room 313
(808) 974-7389
<http://hilo.hawaii.edu/studentaffairs/nse/>

Faculty Lists

Faculty: <http://hilo.hawaii.edu/catalog/faculty.html>
Emeriti Faculty: <http://hilo.hawaii.edu/catalog/emeriti-faculty.html>
Affiliate Faculty: <http://hilo.hawaii.edu/catalog/affiliate-faculty.html>

International Student Services

Student Services Building, Room 206
(808) 974-7313
<http://hilo.hawaii.edu/studentaffairs/international/services.php>

Kilohana Academic Support Services

Mookini Library, Room 123
(808) 933-3428
<http://hilo.hawaii.edu/kilohana/>

Kipuka Native Hawaiian Student Center

Portable Building 12-8
(808) 933-0897
<http://kipuka.uhh.hawaii.edu/>

Edwin H. Mookini Library

Circulation Desk and Hours: (808) 974-7344
Reference Desk: (808) 974-7346
Library Administration: (808) 974-7759
<http://library.uhh.hawaii.edu/>

Medical Services and Women's Health Clinic

Campus Center, Room 212
(808) 974-7636
<http://hilo.hawaii.edu/studentaffairs/health/>

Minority Access and Achievement Program

Student Services Building, Room 202
(808) 974-7451
<http://hilo.hawaii.edu/studentaffairs/maap/>

Native Hawaiian Serving Institutions Program

(808) 974-7413
<http://hilo.hawaii.edu/catalog/nhsi.html>

New Student Programs

Campus Center, Room 313
(808) 933-0732
<http://hilo.hawaii.edu/nsp/>

Pacific Internship Programs for Exploring Science

Pacific Aquaculture and Coastal Resources Center
(808) 933-0705
<http://hilo.hawaii.edu/uhintern/>

Registrar

Student Services Building, Room E-101
(808) 974-7326
<http://hilo.hawaii.edu/studentaffairs/records/>

Student Affairs

Student Services Building,
<http://hilo.hawaii.edu/studentaffairs/>
(808) 932-7445

Student Organizations

Campus Center, Room 210
(808) 974-7499
<http://hilo.hawaii.edu/campuscenter/>

Student Support Services Program

Student Services Building, Room 211
(808) 974-7616
<http://hilo.hawaii.edu/studentaffairs/sssp.php>

Study Abroad

Center for Global Education and Exchange
Portable Building 9, Room 6
(808) 933-8810
<http://hilo.hawaii.edu/uhh/studyabroad>

UH Hilo Mission, Vision, and Strategic Plan

<http://hilo.hawaii.edu/strategicplan/finaldraft.php>

Upward Bound

College Hall 1
(808) 974-7337
<http://hilo.hawaii.edu/academics/ub/>

Women's Center

Campus Center, Room 312
(808) 974-7306
<http://hilo.hawaii.edu/studentaffairs/womenscenter>

Admissions

UH Hilo Admissions Office
 Student Services Building
 200 W. Kāwili Street, Hilo, HI 96720-4091
 (808) 932-7446 or (800) 897-4456
 (808) 933-0861 (fax)
 Email: uhhadm@hawaii.edu
 Web: hilo.hawaii.edu/admissions/

Admission Requirements for Undergraduates

Application and admission information may be obtained from high school counselors in Hawai'i, from the Admissions Office, or the University's Web site. The University of Hawai'i system application form is used by all campuses in the UH system. For students applying to a degree program, applications and all supporting documents must be received by July 1 for Fall semester admission and December 1 for Spring semester admission. International applicants should apply by June 1 for Fall semester admission and November 1 for Spring semester admission. Complete applications include a \$50 application fee; official transcripts of all high school, college, university, business and other post-secondary schools attended sent directly from each institution involved; and all other credentials noted in the system application. The \$50 application fee is non-refundable and required each time the student applies. Students accepted to degree programs are called "classified" students.

All applications and fees are valid for a single semester only. Acceptance does not imply that on-campus housing and/or financial aid are available. While the University will make every effort to assist, students must arrange for their own financial aid and housing by directly contacting the Office of Financial Aid and/or the Office of Student Housing.

Admission to the University is based primarily on high school or college prep courses completed, grade point averages, and test scores. Academic criteria are outlined in the sections that follow.

Candidates for admission are required to specify on the application form all current and previous enrollment in any post-secondary institution. Any candidate for admission who fails to inform the University of such enrollment, or who submits or has submitted on his/her behalf any required information or document which is fraudulent, or which has been altered without proper authorization, may be denied admission to the University of Hawai'i at Hilo. If the omissions and/or alterations are discovered after the student is enrolled, enrollment may be cancelled and/or the student will be subject to the Student Conduct Code, which may result in disciplinary action.

Admission may be denied if previously documented actions or behavior affected the safety of others.

Residency Regulations for Tuition Purposes

Students who do not qualify as bona fide residents of the State of Hawai'i, according to the University of Hawai'i rules and regulations in effect at the time they register, must pay the nonresident tuition. An official determination of residency status will be made prior to enrollment. 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/her term at the college until he/she can present clear and convincing evidence to the residency officer that proves otherwise.

Some of the more pertinent University regulations follow. For additional information or interpretation, contact the residency officer in the Admissions Office.

Definition of Hawai'i Residency

A student is deemed a resident of the State of Hawai'i for tuition purposes if the student (19 or older) or the student (under 19) and his/her parents or legal guardians have:

1. Demonstrated intent to permanently reside in Hawai'i (see below for evidences);
2. Been physically present in Hawai'i for the 12 consecutive months prior to the first day of instruction, and subsequent to the demonstration of intent to make Hawai'i his/her legal residency; 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/her parents or legal guardians who are not legal residents of Hawai'i.

To demonstrate the intent to make Hawai'i your legal residency, the following evidence applies:

1. Filing Hawai'i resident personal income tax return.
2. Voting/registering to vote in the State of Hawai'i.

Other evidence, such as permanent employment and ownership or continuous leasing of a dwelling in Hawai'i, may apply, but no single act is sufficient to establish residency in the State of Hawai'i.

Other legal factors in making a residency determination include:

1. The 12 months of continuous residence in Hawai'i shall begin on the date upon which the first overt action (see evidences) is taken to make Hawai'i the permanent residence. Residence will be lost if it is interrupted during the 12 months immediately preceding the first day of instruction.
2. Residency in Hawai'i and residency in another place cannot be held simultaneously.
3. Presence in Hawai'i primarily to attend an institution of higher learning does not create resident status. A nonresident student enrolled for 6 credits or more during any term within the 12 month period is presumed to be in Hawai'i to attend college. Such periods of enrollment cannot be applied toward the physical presence requirement.
4. The residency of unmarried students who are minors follows that of the parents or legal guardian. Marriage emancipates a minor.
5. 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 United States Armed Forces, while engaged in navigation, or while a student at any institution of learning, provided that Hawai'i is claimed and maintained as the person's legal residence.

Board of Regents Exemptions

Nonresidents may be allowed to pay resident tuition if they qualify as one of the following:

1. United States military personnel and their authorized dependents during the period such personnel are stationed in Hawai'i on active duty.
2. Members of the Hawai'i National Guard and Hawai'i-based Reserves.
3. Full-time employees of the University of Hawai'i and their spouses and legal dependents.

4. East-West Center student grantees pursuing baccalaureate or advanced degrees.
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 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.

Misrepresentation

A student or prospective student who provides incorrect information on any form or document intended for use in determination of 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 by contacting the residency officer for information on how to initiate an appeal.

Admission Procedures

Prospective students should do the following:

1. File an official application for admissions and submit the \$50 application fee by July 1 for Fall semester and December 1 for Spring semester. International applicants must file by June 1 for Fall semester and November 1 for Spring semester.
2. Forward official transcripts from your high school if you have not attended college before, or if you have completed less than 24 semester credit hours. SAT or ACT scores are required for admission directly from high school.
3. If you have attended college, forward official transcripts from each institution you have attended.
4. If you are interested in receiving financial assistance, please request a financial aid application or go online at www.fafsa.gov and file by March 1. (See the Financial Aid section of this catalog for more details.)
5. In order to receive on-campus housing you should submit your Student Housing Application by March 1. Acceptance to the University does not guarantee on-campus housing. (See the Student Housing section of this catalog for more details.)

Admission of First-Time Freshmen

Students applying for admission directly from high school as freshmen are advised to submit scores of the Scholastic Aptitude Test (SAT) or the American College Test (ACT), high school transcripts or the General Education Development high school equivalency records, and recommendations from school officials.

Admission from high school requires the following:

- 3.0 academic GPA in 17 units to include 4 English, 3 Math (including Algebra II), 3 Science and 7 college-prep electives (including social studies, language, and additional math and science)
- SAT or ACT scores are required but will not be used unless the academic GPA is less than 3.0
- GPA below 3.0 considered on a sliding scale with test scores

Applicants denied admission may reapply as transfer students after satisfactorily completing 24 semester hours of transferable courses at another regionally accredited college or university.

Admission of Transfer Students

Transfer students are those who were previously enrolled at a college or university other than the University of Hawai'i at Hilo.

Students who are transferring to UH Hilo from outside the UH system must arrange for all official college transcripts to be sent to the Admissions Office directly from institutions previously attended. Those who have completed fewer than 24 acceptable semester hours of college-level work or who have enrolled in an unaccredited institution must also submit their high school transcript and SAT or ACT results. Transfer students who have completed at least 24 semester hours in a curriculum comparable to UH Hilo from an accredited U.S. college or university with a minimum GPA of 2.0 will be evaluated for transfer on the basis of their college transcripts.

Transcripts Required

Students who have enrolled at other colleges and universities may not disregard their records at such institutions. Students are required to file complete official transcripts of any and all academic work taken at other institutions. The final grades for courses-in-progress of admitted students are required to be on file at the Admissions Office no later than the deadline stated in the official letter of acceptance from the Admissions Office. Students who do not submit final, official college transcripts will not be permitted to register for classes.

Failure to report previous college attendance and/or to file all required transcripts is sufficient cause for the cancellation of the student's admissions acceptance, denial of registration, and/or dismissal from the University.

Transfer Credit

Coursework eligible for transfer credit must be of baccalaureate-level and must be from regionally accredited institutions if from the U.S. or from nationally recognized institutions if from a foreign country. Grades in these courses must be "C-" or above to transfer, except for courses completed at other campuses in the University of Hawai'i system (for which any passing grade will be accepted). Students transferring with any work done more than ten years prior to their admittance to UH Hilo may find such work non transferable by the individual academic department.

To complete an evaluation, the Admissions Office must be in possession of the previous school's catalog, bulletin, handbook, or other institutional document which describes the courses completed. Students may be asked to submit course descriptions from previous colleges attended.

When applicable, transfer credits may be counted towards the specific requirements of a program; otherwise, they will be counted as general electives. However, neither grade points nor grade point averages earned at other institutions are used in the computation of the UH Hilo cumulative grade point average.

Students transferring into UH Hilo with a transferable A.A. degree from an institution accredited by a U.S. regional accreditation agency will be exempted from the General Education requirements, unless specific course requirements are needed for a given major or specialty. The A.A. degree must have been completed prior to initial matriculation to UH Hilo.

Students from within the UH system, who have six credits or fewer to complete their University of Hawai'i community college A.A. degree, may transfer to UH Hilo and be exempt from the UH Hilo General Education requirements **providing the community college A.A. degree is completed in the first semester at UH Hilo.**

Students transferring into UH Hilo from a UH system community college in Fall 2011 or later and who have completed the basic/foundation requirements at their previous campus will be exempt from the UH Hilo General Education basic requirements; similarly, such students who have completed the area/diversification requirement at their previous campus will be exempt from the UH Hilo General Education area requirements. See the UH system policy (May 2010) on transfer of GE core requirements among UH system campuses: http://www.hawaii.edu/offices/app/aa/articulation/JL_MOA.pdf.

However, all students must complete the UH Hilo Integrative requirements in Writing Intensive, Hawaii Pan-Pacific, and Global and Community Citizenship, as well as all major and other UH Hilo requirements. All other transfer students must fulfill the General Education requirements appropriate to their major and degree as stated in this catalog.

Admission of International Students

International students may apply to the University of Hawaii'i at Hilo either as a graduate from high school or as a transfer student from another college or university. International applicants must fulfill all requirements for admission as well as comply with the regulations of the United States Department of State and the U.S. Department of Homeland Security.

All documents, forms and/or test scores, should be received by June 1 for the Fall semester and November 1 for the Spring semester. Applicants who require the F-1 or J-1 student visa are encouraged to submit complete applications by May 1 for Fall and October 1 for Spring.

The online application, or the University of Hawaii'i system application form, is required. International applicants who require the F-1 or J-1 student visa must also submit the Supplemental Information Form. The financial support requirement is \$33,000US. This amount includes an estimated cost for health insurance which is required of all international students enrolled at the University.

Applicants must present evidence of having completed secondary school. Such evidence may include an official copy of secondary school academic records, and/or certificates of the results of qualifying examinations and certified true copies of mark sheets. All documents must be in English. For applicants applying from international high schools, admission is based on above average performance (75%) in high school and/or qualifying examinations. For applicants applying from international colleges or universities, admission is based on a 70% average. Students who have attended college less than one year should also submit their secondary school academic records. Course descriptions in English are required to complete the transfer credit evaluation.

Applicants whose native language is not English may choose to submit the results of the TOEFL, Cambridge IELTS, SAT, ACT, or equivalent national examination taken in their home country. Information about the TOEFL may be obtained at www.toefl.org, from the local United States embassy or consulate office, or by writing directly to Test of English as a Foreign Language, Box 899, Princeton, New Jersey 08540, USA.

Applicants whose native language is not English may choose to submit the results of the Cambridge, EIKEN, IELTS, SAT/ACT, TOEFL or an equivalent national examination taken in their home country. Information about the TOEFL may be found at www.toefl.org, and at local United States embassy or consulate offices, or by writing directly to Test of English as a Foreign Language, Box 899, Princeton, New Jersey 08540, USA. Applicants who meet the academic admission requirements and have a test of English score of TOEFL 500/equivalent may be admitted directly into a degree program at the University. Applicants who meet the academic admission requirements and have an equivalent score below 500, as well as those who choose not to submit test scores, may be admitted first to the UH Hilo English Language Institute (ELI).

During orientation, at UH Hilo non-native speakers of English take the English Language Placement Assessment and the Writing Placement Assessment. The results guide and inform course selection prior to registration. For students admitted to the ELI, the assessment results determine the placement level in English as a Second Language (ESL) courses. ELI students are registered in the ESL courses prescribed for them, and, they may enroll in up to two regular University courses with the consent of both the ELI director and the course instructor.

The United States government and the State of Hawaii do not grant financial aid to F-1 or J-1 students. There are a limited number of UH Hilo institutional scholarships available to international students. After enrollment, those who establish a record of academic excellence may be eligible to apply for available institutional aid. Students from COFA Pacific island nations are eligible for U.S. federal financial aid.

Health insurance is required of all international students enrolled at the University.

Admission of Unclassified, Non-degree Students

A person who wishes to take courses at UH Hilo but does not wish, or does not qualify, to enroll in a degree program, may apply for admission as an unclassified student. An unclassified student is not a candidate for a degree or a Board of Regents-approved certificate and will not be allowed to become a candidate unless he/she meets the admission standards required of students seeking a degree. Moreover, most types of financial aid programs will not be available to unclassified students. International visa students and WUE students are not eligible for unclassified, non-degree status. Students who are on academic dismissal or suspension do not qualify under this status. Contact the Admissions Office for more information.

Admission of Returnees

Any student who terminates his/her enrollment at the University by withdrawing from all classes, by not registering for a semester, or by graduating, and who subsequently desires to return, must reapply for admission by the application deadline. This includes a \$50 application fee (except when a student is away from the University for one semester only, an application fee is not required). If the student enrolled at another college or university in the interim, he/she must reapply as a transfer student. Contact the Admissions Office for more information.

Admission of Auditors

Persons wishing to participate in University courses for informational instruction only may apply by completing the auditor's application form no earlier than the first day of instruction. Permission of the instructor is required and standard tuition and fees apply. Auditors receive no credit, and they do not take course examinations. For more information, see "Classification of Students" in the "Academic Regulations" chapter of this Catalog.

Running Start/Early Admission Program

The Running Start/Early Admission Program is intended to encourage highly motivated and academically talented high school juniors or seniors to advance in their schooling by supplementing their regular high school work with selected college courses. Interested applicants must comply with the regular admissions application process. After consultation with their high school counselor and the University Admissions staff, qualified candidates may be admitted on a part-time, non-degree status. Continuation in the Early Admission Program depends upon the maintenance of a 2.0 grade point average at the University and approval of the University in consultation with the high school counselor. Federal financial aid is not available for Running Start/Early Admission students.

A student seeking Running Start/Early Admission should submit the following items to the Admissions Office: a) an application for admission to the university; b) a letter of recommendation from the principal, teacher, or the guidance counselor; c) an official high school transcript and d) scores from the Scholastic Aptitude Test (SAT) or American College Testing (ACT) exam.

Students planning on attending a second or subsequent semester must re-apply by submitting: a) an application for admission; b) a new letter of recommendation from the principal, teacher, or the guidance counselor and c) a new official high school transcript. New test scores from the SAT or the ACT are not necessary unless the student has re-taken the test and new scores are available.

Admission to Summer Session

Admission to Summer Session is open to high school graduates and individuals 18 years of age or older. Applicants are not required to submit high school transcripts/college entrance test scores or college transcripts. Admission to the Summer Session does not constitute admission to a regular semester as a degree candidate.

High school sophomores, juniors, and seniors are encouraged to enroll in summer classes. Sophomores and juniors are asked to work with their high school counselor to complete the Running Start application and submit it to the College of Continuing Education and Community Service.

All students are expected to have satisfied prerequisites for the course(s) in which they enroll and are reminded that grades earned in college courses during the summer may affect their admission to college in the future. Students whose native language is not English must demonstrate English proficiency.

Graduate-level applicants are required to send in college transcripts to confirm receipt of a baccalaureate degree. Applicants wishing to enroll in particular graduate-level courses may be subjected to remit college transcripts from each of the colleges previously attended.

Admission to Agriculture Development Program

The College of Agriculture, Forestry and Natural Resource Management offers an Agriculture Development Program for students who may not meet the usual requirements of admission, but who show exceptional promise. First-time students admitted into this program are regarded as students in good standing and are subject to the same academic regulations as other students of the college but are, in addition, provided with special testing, advising, course work, tutoring, and counseling to improve their abilities and chances of success. Please refer to the College of Agriculture, Forestry and Natural Resource Management section for further information.

Profile of Admitted Freshmen Students 2013

1,676 freshmen applied:

1,257 were accepted (75%); 492 enrolled (29%)

Average high school GPA: 3.33

Resident = 62% Non-Resident = 38%

Average SAT Math = 472 Average SAT Reading = 469

Average SAT Writing = 449

Information for Admitted Students

Partial Advance Tuition Deposit

Newly accepted students will be asked to submit a \$60 tuition deposit if they intend to enroll at the University of Hawai'i at Hilo. The deposit is non-refundable, cannot be transferred to another campus, and applies only for the term the student was accepted. Students who are experiencing financial difficulty and who are awaiting financial aid should contact the Admissions Office in writing to secure their enrollment for the following term.

Medical Clearance

1. In accordance with Hawaii State law, all newly-enrolled students must submit the following:
2. A completed Mandatory Health Requirements form (mailed from the Admissions Office with the student's acceptance letter or available at http://hilo.hawaii.edu/studentaffairs/health/documents/UHH_Health_History_3-11.pdf);
3. Results of a tuberculin skin test (PPD) not more than 12 months

prior to attending first day of classes and if the PPD is positive, a chest x-ray performed not more than 12 months prior to attending first day of classes (note: tuberculin tests and chest x-rays performed in foreign countries are not acceptable for clearance);

4. If born after 1956, proof of immunity to measles (rubeola), mumps, and rubella (MMR). Documentation of 2 MMR vaccinations or a titer is required.
5. These requirements must be met before the start of classes. Tuberculin skin tests (TB), MMR and other immunizations are available at the Student Medical Services on campus (costs are on the Student Medical Services website).

Note: TB tests and chest x-rays performed in foreign countries are not acceptable for clearance.

Writing Placement

Beginning Fall 2011, students' SAT-W score or ACT score will be used for placement into ENG 100 or 100T. If you do not have an SAT or ACT score and you have not yet earned credit for ENG 100 (or the equivalent), you will need to take the Writing Placement Assessment before you can register for ENG 100 or 100T.

English Proficiency Test

All non-native speakers of English are required to sit for the Writing Placement Assessment and the English Proficiency Placement (EPT) to determine if supplemental ESL classes are required. More information can be found at hilo.hawaii.edu/academics/eli/english_proficiency.php.

Math Placement

UH Hilo offers a wide range of math courses for entering students. Completing the math Placement Assessment is required to enroll in most Math courses. The Math Placement Assessment is an online assessment which should be taken well ahead of registration. Information about the Math Placement Assessment can be viewed at <http://hilo.hawaii.edu/kilohana/mathpe.php>.

Students with questions about their placement score should meet with an advisor or representative from the Math Department during orientation.

New Student Orientation

New Student Orientation is offered during the week before classes begin in the Fall and Spring semesters. Students enrolling at UH Hilo for the first time are provided with an extensive program of academic and social activities designed to facilitate their adjustment to the University and to the Hilo community. During orientation, academic advisors assist new students with course selection and registration. Additional orientation activities and services help students to become more knowledgeable about their campus, to become familiar with the diverse opportunities available to get involved in campus life, and to become a member of our campus community.

For students entering in the Fall semester, UH Hilo conducts early registration and academic advising sessions periodically throughout the summer. During these sessions, students learn about degree programs and requirements as well as receive assistance with selecting and registering for courses. Students attending these sessions are expected to participate fully in our New Student Orientation program as well.

Students enrolling for the first time at UH Hilo are strongly encouraged to participate in New Student Orientation. During orientation, new students will be able to build a solid foundation to ensure a successful collegiate experience and to make the essential support connections to fellow students, faculty, and staff. For more information, contact the orientation coordinator, (808) 933-0732.

Tuition and Fees

Tuition and fees are charged according to the number of semester hours in which the student enrolls. Classified students are charged the full-time tuition rate if they are enrolled for 12 or more credits per semester. Unclassified students are charged per credit hour for all the courses in which they enroll, and are charged undergraduate tuition rates for courses numbered between 001 and 499V, and graduate tuition rates for courses numbered 500 or higher. (See the distinction between classified and unclassified students.)

In accordance with University concurrent enrollment policy, students enrolling at multiple campuses during the same semester pay the applicable tuition rate at each campus. Students who audit courses pay the same tuition as students enrolled for credit.

All tuition and fee charges at the University of Hawaii'i campuses are subject to change in accordance with requirements of State law and/or action by the University of Hawaii'i Board of Regents or Administration.

Tuition for the 2014-2015 Academic Year

Full-time undergraduate students (Classified)

Resident: \$3,324.00

Non-resident: \$9,324.00

Part-time undergraduate students, per credit hour (PCH)

Resident: \$277.00

Non-resident: \$777.00

Graduate Tuition

Please see the Graduate Tuition and Fees schedule in the Graduate Programs section of this catalog or visit http://hilo.hawaii.edu/uhh/bo/cashier/tuition_schedule.php.

For information, please contact:

Cashier's Office

University of Hawaii'i at Hilo
200 West Kāwili Street Hilo, HI 96720-4091
Tel: (808) 932-7025 Fax: (808) 932-7586
Web: hilo.hawaii.edu/uhh/bo/cashier/
Email: uhhcash@hawaii.edu

Cashier window hours: Monday–Friday, 8:00 a.m. to 4:00 p.m.

Fees for the 2013-2014 Academic Year

Fee	1-4 credits	5+ credits
Student Publications	\$ 9.00	\$18.00
Student Activities	9.00	18.00
Student Association	9.00	18.00
Campus Center	10.00	20.00
Media Broadcasting	6.50	13.00
Student Health	7.00	7.00
Student Life Center	78.00	78.00
TOTAL	\$128.50	\$172.00

Application Fee

A \$50 fee is required for all applicants. This fee is not refundable, not transferable to another semester, and is required each time an application is submitted.

Late Registration Fee

Students will be assessed a \$30.00 fee for registering during the late registration period, which begins on the first day of instruction.

Special Fees and Charges

Fee/Charge	Amount
Student Identification Card	\$10.00
Graduation Application Fee	\$15.00
Transcript of Record	\$5.00
Rush Transcript	\$15.00
Institutional Credit by Examination	\$15.00
Replacement of laboratory equipment	Cost of broken or lost item(s)

Performing Arts majors and minors taking applied music courses (MUS 135-136, 235-236, 335-336, and 435-436) must pay an additional fee for instruction in individual lessons. Contact the Performing Arts department chair for information.

Undergraduate Nursing students also pay a \$500/semester professional fee.

Graduate Fees

Please see the Graduate Tuition and Fees schedule in the Graduate Programs section of this catalog or visit <http://hilo.hawaii.edu/catalog/graduate-tuition-and-fees.html>.

Tuition and Fees for the Summer Sessions

Credit courses are offered at UH Hilo during the summer under the auspices of the College of Continuing Education and Community Service. Resident and nonresident students pay the same tuition rate for summer courses:

Tuition, Per Credit Hour, for Summer Session 2014

Level	Resident	Non-Resident
Undergraduate Students	\$258.00	\$366.00
Graduate Students	\$483.00	\$514.00

A \$2.00 student activity fee and a \$35 Student Life Center fee are assessed to each student. In addition, some classes may have lab fees.

Tuition for Offerings of the College of Continuing Education and Community Service

In addition to summer programs, the College of Continuing Education and Community Services (CCECS) provides a limited number of credit courses through distance learning and instructional outreach at off-campus sites. CCECS also offers noncredit courses and programs.

The CCECS website provides information about its current course offerings: hilo.hawaii.edu/academics/ccecs/. Contact CCECS for more information: (808) 974-7664; or email ccecs@uhh.hawaii.edu.

Payments

Students are not sent a bill. For registration to be official, however, all tuition and fees must be paid at time of registration.

Tuition and fee payments can be made by:

- MyUH Online: Pay by MasterCard, VISA, or any credit card accepted by the Discover Network (Discover, Diners, and JCB) pinless debit card or web check (checking or savings account). Registered students may sign up for an installment payment plan for the fall and spring terms. Log on to MyUH for more details. The payment plan is not available during the summer terms.
- Mail: Make checks payable to "University of Hawai'i at Hilo" and mail to: UH Hilo Business Office, 200 W. Kawili St., Hilo, HI 96720. Mail payments must be RECEIVED by the appropriate payment deadline. You should allow a minimum of 5 days for delivery prior to the deadline. Do not use Campus Mail. To ensure proper crediting to your account, write your UH number on the bottom left corner of the check.
- In Person: Pay by cash, check, money order, or cashier's check at any campus business office.
- Parents and Other Authorized Users: If you have been set up as an Authorized User, you may logon to the Authorized User site (https://epay.hawaii.edu/C24372_tsa/web/login.jsp) with your email address and the password provided to you.
- EFT: The University of Hawai'i does not accept wire transfers or e-mail payments from individual student.

UH Hilo offers an Installment Payment Plan for those students who are interested in this option.

Current term information can be found at <http://hilo.hawaii.edu/uhh/bo/InfotoStudents.php>.

Partial Advance Tuition Deposit

All new, transfer, and returning classified students are required to pay a partial advance tuition deposit of \$60.00 (\$500.00 for College of Pharmacy). Scholarship or financial aid recipients are not exempt from this payment. Students who are experiencing financial difficulty, however, and are awaiting financial aid should contact the Admissions Office in writing to secure their enrollment for the following term. This partial advance tuition deposit is applied at registration time toward tuition for that semester. The payment is nonrefundable and nontransferable if the student does not register (College of Pharmacy advance tuition deposit is not transferable to other programs). Continuing classified students are not required to make the partial advance tuition deposit.

Returned Checks

Checks tendered to the University of Hawai'i or any department therein, and returned to the maker's bank for any reason will result in a \$25.00 charge and a "hold" will be placed on the account. Do not 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 the University.

Financial Obligations to the University

Students who have not satisfactorily adjusted their financial obligations (tuition and fees, traffic violations, library fines, locker fees, laboratory breakage charges, transcript fees, loans past due, rental payments, etc.) may be denied transcripts, diplomas, and registration. A copy of the "Rules and Regulations Governing Delinquent Financial Obligations Owed the University of Hawai'i," issued by the Board of Regents, is on file in the Business Office or online at <http://www.svpa.hawaii.edu/svpa/apm/treas/a8731.pdf>

Tuition and Fees Refund Policy

Tuition

Percent Refund

Refund Policy

100%	If, on or before the last day of late registration, complete withdrawal, change from full-time to part-time status, or change from one tuition rate to another tuition rate is made.
50%	If, on or before the last day of the third week of instruction, complete withdrawal, change from full-time to part-time status, or change from one tuition rate to another tuition rate is made.
0%	If, after the third week of instruction, complete withdrawal, change from full-time to part-time status, or a change from one tuition rate to another tuition rate is made.

Fees

Percent Refund

Refund Policy

100%	If, on or before the last day of late registration, complete withdrawal is made.
0%	If, after the last day of late registration, complete withdrawal is made.

Financial Aid

For information, please contact:

Financial Aid Office

University of Hawai'i at Hilo

200 West Kāwili Street, Hilo, HI 96720-4091

Jeff Scofield, Director (808) 932-7449 Fax: (808) 932-7459

E-mail: uhhfao@hawaii.edu hilo.hawaii.edu/financialaid/

The office is located in the front lobby of the Student Services Building.

Office Hours: Monday-Friday, 7:45 a.m. to 4:30 p.m.

Counseling Hours by Appointment:

Monday-Friday, 9:00 a.m. to 2:00 p.m.

The purpose of this section is to provide an overview of financial aid and the policies and procedures that must be followed to receive financial aid at the University of Hawai'i at Hilo. Detailed financial aid policies can be found in the annual "Guide to Financial Aid" available from the Financial Aid Office and on our website.

Financial Aid includes a number of programs funded by federal and state governments, UH Hilo, educational institutions, and private organizations for the purpose of assisting individuals interested in obtaining an education but who do not have the financial resources to do so. Aid programs consist of scholarships, grants, work programs, and loans.

Steps Necessary to Receive a Financial Aid Award

To be considered for financial aid, you must complete the Free Application for Federal Student Aid (FAFSA). You are strongly encouraged to complete the FAFSA via the Internet at www.fafsa.gov. On the FAFSA, you should list the University of Hawai'i at Hilo, code number **001611**, as one of the schools to receive your application information. UH Hilo will receive your data electronically from the United States Department of Education and will then be able to calculate your eligibility. The priority filing date (submitted via the Web to the federal processor) is March 1. Remember, grant funds are limited and expended quickly. File on time to ensure full consideration. Also, you must be accepted for admission to the University as a classified student before a financial aid award can be issued.

Upon receipt of the FAFSA results in the Financial Aid Office, a Financial Aid Award notice will be sent to you. You must review the award via the MyUH Portal and accept or decline the award within three weeks of the date of the notice. In addition, other documents may be requested from you at this time.

Verification of Application Information

Your application for federal student aid may be selected for a process known as verification. This means that the Financial Aid Office must verify the accuracy of the information that you submit on the FAFSA. If selected, you must submit a verification worksheet, federal income tax data from the IRS, and/or other supporting documents. Until your information has been verified, a financial aid award cannot be issued to you.

You will be notified in writing if you have been selected for verification. You will normally have 60 days to submit the required verification documents. Failure to submit the verification documents will result in your

financial aid file being closed and no award being issued. If any of the data reported on the FAFSA is found to be incorrect, your financial aid eligibility will be recalculated.

Financial Aid Satisfactory Academic Progress

Federal student aid regulations require all educational institutions administering funds to ensure that financial aid recipients are making satisfactory academic progress toward their educational objectives. The regulations apply to all students receiving federal, state and institutional financial aid funds. Questions regarding this policy should be directed to a financial aid office staff member.

Satisfactory Academic Progress has been defined as follows:

I. Satisfactory Progress Levels Defined

- A. Satisfactory Academic Progress will be monitored at the conclusion of each academic year (May). To be making satisfactory academic progress a student must maintain the required cumulative grade point average, attain a 75% completion rate, and not exceed the normal completion time.
- B. Students failing to maintain satisfactory academic progress will be placed on Financial Aid Suspension. Such status will make students ineligible for financial aid until such time as the satisfactory academic progress requirements are met.

During the period of Financial Aid Suspension, students may (unless placed on Academic Dismissal) attend UH Hilo without financial aid. It will be the student's responsibility to secure other financial resources during this period.

II. Satisfactory Progress Requirements

- A. **Maintenance of a minimum UH Hilo cumulative grade point average.**
 1. For undergraduates, post-baccalaureate students, and pharmacy students a 2.00 UH Hilo GPA is required at the end of the academic year (May).
 2. For graduate students, a 3.00 UH Hilo GPA is required at the end of the academic year (May).
- B. **Attainment of a 75% completion rate (pace) towards educational objective for hours attempted at UH Hilo.**

Students must complete and pass 75% of all hours attempted at UH Hilo. A student's completion rate is calculated by dividing UH Hilo hours earned by UH Hilo hours attempted. Grades of F, W, I, NC and repeated courses count as hours attempted. Hours declared in academic bankruptcy count as hours attempted.
- C. **Normal Completion Time**
 1. Undergraduate students will be eligible for financial aid for a maximum of 160 attempted credit hours. Transfer hours are included in the total number of credit hours attempted.
 2. Graduate students will be eligible for financial aid for a maximum of 45 attempted credit hours. Transfer hours are included in the total number of hours attempted.
 3. Pharmacy students will be eligible for financial aid for a maximum of 197 attempted credit hours. Transfer hours are included in the total number of hours attempted.

III. Satisfactory Progress Appeal Process

A student who is placed on Financial Aid Suspension may appeal the denial of financial aid. The appeal must be made by submitting a signed written letter to the Director of Financial Aid no later than 10 days after receipt of the notice of Financial Aid Suspension. The appeal must include information regarding why satisfactory progress was not made and what has changed that will allow the student to demonstrate satisfactory progress in the next enrollment period. The appeal will be directed to the Appeals Committee whose decision will be final. The decision will be based on demonstration of one of the following situations:

1. Error of fact;
2. Mitigating circumstances. Circumstances considered may include illness or injury, family difficulties, interpersonal and college adjustment problems.

If the appeal is granted, financial aid will be continued for a Probationary period and will contain an Academic Plan that must be satisfied. The student will be advised in writing of the action on the appeal.

Withdrawing from Classes

It is the responsibility of any student wishing to withdraw from UH Hilo to follow the official withdrawal process with the University. Students wishing to withdraw from the University should contact the Records Office to initiate the withdrawal process. The University's policy on complete withdrawal may be found in the "Academic Regulations" chapter of this Catalog.

Withdrawal from all classes during a term may result in a change in institutional charges for the term. Please consult this Catalog for the complete Tuition and Fees Refund Policy.

Withdrawal from all classes during a term may also result in a change in the financial aid award for that term. Federal financial aid regulations have created a Return of Title IV Funds Policy. This policy states that students who withdraw or cease attendance before the 60 percent point of the term (as calculated by the number of days in the term) will have their financial aid award reduced.

Upon withdrawal, the Financial Aid Office will calculate, from the number of days in the term and the number of days of the term that the student was enrolled prior to withdrawal, the percentage of the term that the student completed. This percentage will be applied to the amount of aid received for the term with the student being able to retain only the amount of aid for the percentage of the term actually completed. The unearned portion of the financial aid award must be returned to the federal, state, and institutional programs that have been awarded. If excess financial aid funds have been refunded to the student, a portion of these funds may also need to be returned to the financial aid programs awarded. This may result in large sums being owed to both UH Hilo and federal, state, and institutional financial aid programs.

Students considering withdrawal from classes should consult the Financial Aid Office prior to initiating the withdrawal process. Withdrawal can have a significant impact on institutional charges, a current financial aid award, as well as future financial aid eligibility (see the Satisfactory Academic Progress Policy). Complete financial aid regulations concerning withdrawals and the Return of Title IV Funds Policy may be obtained from the Financial Aid Office.

Unofficial Withdrawals

Students who cease attending all classes during a term will be subject to the Return of Title IV Funds Policy outlined above. The portion of unearned aid will be based on the last date of documented class attendance. In all cases, official withdrawal procedures should be followed.

Also, students who fail all classes during a term will be reviewed to determine if the failure was due to not attending the class. Students who stopped attending classes before the end of the term will be treated as an unofficial withdrawal.

State of Hawai'i Financial Aid

UH Hilo Opportunity and Achievement Grants

Opportunity and Achievement Grants may be available to resident students who are in need of financial assistance or to resident or non-resident students who merit assistance because of their achievement or service to the University. All applicants must be enrolled or planning to enroll as a classified student at least half-time.

Opportunity Grants based on financial need do not require specific application forms other than those required for the student financial aid programs, i.e., Free Application for Federal Student Aid.

Application forms for Achievement Grants are available at the following offices:

- College of Arts and Sciences
- College of Agriculture, Forestry, and Natural Resource Management
- Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language
- College of Business and Economics
- College of Pharmacy
- Athletics

Opportunity Grants for Students of Hawaiian Ancestry

Students of Hawaiian ancestry from outside Hawai'i automatically qualify for residency. In addition, there are a limited number of Opportunity Grants available for students of Hawaiian ancestry.

Application forms for these need-based Opportunity Grants are available at the respective UH Hilo offices as follows:

- Ka Haka'Ula O Ke'elikōlani College of Hawaiian Language
- Hawaiian Leadership Development/Student Support Services/Minority Access and Achievement Program

Pacific Islander Scholarship

Effective with the Fall 2007 semester, UH Hilo has established a Pacific Islander Scholarship. To be eligible for this scholarship, students must:

- be accepted by the UH Hilo Admissions Office with a residency status of Pacific Islander Non-Resident Exempt. The residency status is reflected on the acceptance letter issued by the Admissions Office
- Demonstrate financial need. Financial need is demonstrated by applying for financial aid, using the FAFSA (Free Application for Federal Student Aid).
- Be a new student entering UH Hilo in Fall 2007 or later, or returning to UH Hilo in Fall 2007 or later after taking a break from enrollment at UH Hilo.
- Enroll as a classified student in either an undergraduate, graduate, or post-baccalaureate program.
- Enroll at least half-time (6 or more credits per semester if an undergraduate).

The maximum amount of the scholarship for the 2014-15 academic year is \$3,324. (This amount is the difference between 150% of the resident tuition rate and the resident tuition rate for a full-time student.) Students do not need to submit an application form except for the FAFSA; eligible students automatically will be considered for this scholarship.

International Students

A limited number of Achievement Grants may be available to international students. Contact the Center for Global Education and Exchange at or (808) 932-7489 or FAX (808) 932-7487.

Students with Disabilities

The University Disability Services Office offers a Scholars with Disabilities Achievement Grant for any UH Hilo student with a 3.5 GPA and with a qualifying disability. Application forms are available from the University Disability Services Office: V (808) 932-7623, TTY (808) 932-7002, or shirachi@hawaii.edu.

Federal Aid Programs

UH Hilo participates in the Federal Pell Grant, Federal Supplemental Educational Opportunity Grant, Federal Direct Loan and Federal Work-Study Programs. All programs require the annual submission of the Free Application for Federal Student Aid (FAFSA).

Veterans Benefits

Certain instructional units at UH Hilo are approved for Veterans Affairs (VA) educational benefits. Eligible students may receive financial assistance as provided by the Veterans Readjustment Benefit Act and the War Orphans Assistance Act.

Veterans who are registered for the first time with UH Hilo using veterans benefits must provide a current letter of Eligibility to the Office of the Registrar. Dependents of disabled veterans and survivors of veterans whose injury or cause of death was service-related, who register for the first time under any provision of the Federal Veterans Bill, must present their Letter of Eligibility and must have their VA File number.

All veterans must contact the Office of the Registrar after completing each semester's registration in order to continue receiving benefits by completing their Veteran Enrollment Verification Form. This form must be submitted each semester by the Friday of the third week of instruction. The Office of the Registrar must also be contacted if any registration changes are made after submission of the Veterans Enrollment Verification Form. Any changes not reported may result in repayment of VA educational benefits issued.

If a student intends to use tuition assistance, please be sure to review program policies prior to submitting any paper work for that semester. All programs available to veterans/children of veterans are administered through the UH Hilo Office of the Registrar. If you are eligible for assistance through these programs, please contact the Office of the Registrar. Questions concerning eligibility may be directed to the Veterans Administration by calling 1-888-GIBILL1 (1-888-442-4551).

AmeriCorps National Service

In exchange for a year of service, AmeriCorps members are eligible receive an education award of \$5,625 (2014) to help pay off student loans or help finance their education. During term of service, AmeriCorps members earn a living allowance and may qualify to defer their existing student loans. To receive AmeriCorps NCCC applications or more information about opportunities with AmeriCorps, please call the AmeriCorps hotline at 1-800-942-2677, ext (TDD 1-800-833-3722) or visit www.cns.gov.

Scholarships

The purpose of the Scholarship Program at UH Hilo is to recognize and reward students who have demonstrated outstanding academic performance and to encourage those students who show academic potential and a willingness to participate in community activities. The scholarship awards imply the expectation of continued exceptional performance and leadership by the recipients in the years ahead.

A complete listing of scholarship opportunities and resources is published annually by the Financial Aid Office. The Scholarship Opportunities publication and application form is available at the Financial Aid Office website athilo.hawaii.edu/financialaid/. The application deadline for most funds is March 1.

Other Listings of Financial Aid

The UH Hilo Library and the Hawaii'i public libraries have numerous publications on scholarships, grants, and other sources of aid. You may also wish to explore the Internet for scholarship opportunities:

University of Hawaii'i: www.hawaii.edu/admissions/aid.html

Others:

- www.finaid.org
- www.fastweb.com
- www.collegeboard.com
- www.studentaid.ed.gov
- www.scholarshipexperts.com

Information about the Hope and Lifetime Learning tax credits can be obtained from the following sources:

- IRS Publication 970, "Tax Benefits for Higher Education"
- www.irs.gov

Academic Regulations

Academic Expectations and Responsibilities

Develop an academic plan.

Outline your educational goals and objectives, keeping in mind the requirements of your planned degree. Use this to construct a realistic academic plan. In deciding on courses and academic load, carefully consider your level of preparation, as well as any extracurricular commitments and responsibilities.

Read and understand the syllabus for each course you are enrolled in.

The syllabus is more than a listing of course times and material. It also outlines what an engaged and responsible student can expect to learn; describes examination, grading, and student conduct policies; outlines the permitted use of electronic devices; and informs students how they may contact their professor for additional guidance.

Develop your own set of study skills, and use them regularly.

Learn what study techniques work for you personally. Plan adequate time for studying class material (a useful estimate is at least 3 hours of extracurricular work per lecture hour). Set aside extra time to complete big assignments, such as term papers or presentations. Expect to have material covered at a much faster pace than in high school. Additionally, expect that the pace and difficulty of material will increase as a student progresses from 100-level to 400-level courses.

Come to class prepared.

As a student, it is your responsibility to come prepared to each and every class. This includes completing reading, problem-solving or other assignments prior to the lecture. This also means coming to class mentally prepared, being awake and attentive, and taking useful notes.

Take full advantage of available academic resources.

Attend office hours regularly and get to know your instructors. Frequent the Edwin H. Mookini Library and become familiar with all library services and resources such as reserve materials, article databases, and the extensive book collections (both print and e-books). Be aware of your academic performance throughout the semester, and should you need additional help, advising and tutoring services are available.

Participate in your own education.

Become engaged in your own education. It is your responsibility to ask questions when you don't fully understand course material, and to seek additional help if needed.

Adhere to the UH Hilo Student Conduct Code.

You have a responsibility to familiarize yourself with and adhere to the tenets of the UH Hilo Student Conduct Code. Violations of the Code (e.g. academic dishonesty, disruptive behavior, personal threats) are subject to disciplinary procedures that may include expulsion from the University.

Keep a healthy mind and body.

Excessive stress, fatigue, or unhealthy habits can interfere with your academic success. Be aware of your mental and physical state and how it impacts your performance in class. Counseling services are available, and take advantage of these services in a proactive manner should you be experiencing personal or academic difficulties.

The regulations which follow apply to all undergraduate programs at UH Hilo, unless otherwise indicated. In addition, each college has its own regulations, which may be found in separate sections of this Catalog. Graduate and Professional (Pharmacy) students should also refer to those sections of the University catalog for additional information.

Academic Advising

The importance of obtaining regular academic advising cannot be overstated. Advising is an essential part of educational success and a very important resource designed to help students complete the requirements of the University and the individual majors. Students should consult with a faculty advisor at least once a semester to decide on courses, ensure academic progress toward graduation, and discuss career options and other educational opportunities provided by UH Hilo. Advising is a shared responsibility, but students have final responsibility for meeting degree requirements.

Students accepted to the University with declared majors are advised by faculty advisors. Faculty advisors are specialists in their subjects and in the major requirements, and they have important information about related graduate programs and employment opportunities in their disciplines. Faculty advisors provide guidance on all academic requirements throughout the student's college career.

Exploratory students, students who do not declare a major when entering the University, are designated as "General" students. The Advising Center assists these students with designing a program of study to meet the General Education requirements. The Advising Center also provides these students with information about possible major fields and academic regulations.

Registration, Withdrawals and Other Changes

Regular Registration

The registration schedule is posted at hilo.hawaii.edu/registrar/RegistrationGuide.php

Students cannot register until they have cleared all medical, academic, and financial obligations. Registration is not complete until all tuition and fees have been paid by the payment deadline.

Late Registration

Late Registration begins the first day of the semester or session. The last date on which students may register in any term is indicated in the UH Hilo Academic Calendar. **There is a fee for late registration.**

Concurrent Registration

UH Hilo students may enroll concurrently at any UH institution. All prerequisites and course requirements apply. Tuition and fees will be assessed for any enrollments at other UH institutions. UH Hilo students who wish to also enroll for courses through UH Mānoa or UH West O'ahu must be admitted to the appropriate university. When applying to UH Mānoa or UH West O'ahu, students should indicate that they wish that campus to be secondary and that UH Hilo is to remain their primary or "home institution."

It is important for UH Hilo students to be aware that they have a "home institution" which is the site of their degree programs, their financial aid awards, and the majority of their coursework. To ensure active UH Hilo student status, students must enroll in at least one class at UH Hilo each Fall or Spring semester. Students who do not maintain active UH Hilo status may be subject to readmission and a change in graduation

requirements.

Students should consult the UH Hilo Admissions Office to determine the transferability of coursework completed elsewhere. Students planning to enroll in courses from other UH campuses are strongly encouraged to file a "Prior Authorization for Transfer Credits" form (available at hilo.hawaii.edu/registrar/documents/TransferCreditAuth.pdf) with their college deans that notifies the college and the Financial Aid Office of their enrollment status. Students should be aware that:

- The UH Hilo grade point average is based only on work taken at UH Hilo.
- To earn a bachelor's degree at UH Hilo, a minimum of 30 credits must be earned at UH Hilo.
- College of Arts & Sciences, College of Business & Economics, and Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language students must earn a minimum of 25% of the credits required for their major, minor, and/or certificate at UH Hilo.
- Students are discouraged from repeating courses elsewhere that they have already taken at UH Hilo, since the grade at another institution (including within the UH system) will NOT replace the grade earned at UH Hilo. Students should also be sure that they have not already received transfer credit for a course in which they plan to register at UH Hilo, since additional credit will not be awarded. Students can find their transfer evaluation by going to the STAR Degree Audit at: <https://www.star.hawaii.edu>. The detailed course evaluations for each campus attended are available in the "transcript" tab in STAR for students.

Upon completion of a course taken outside of the University of Hawaii system, students must have a copy of their official transcript sent to the UH Hilo Admissions Office. Students taking courses within the UH System will have their course work automatically transferred back to UH Hilo within a few weeks after the grading period is complete. If the courses do not appear in your STAR reports, contact the UH Hilo Admissions Office.

Adding a Course

Students may enroll in (add) any course they're eligible for through the first week of instruction of a Fall or Spring semester or the first three days of a Summer session. To add a course during the second week of instruction requires the permission of the instructor. The last day to add a class is the same as the last day of late registration as noted on the UH Hilo academic calendar.

Dropping or Withdrawing from a Course:

NOTE: UH Hilo students who wish to withdraw from all UH Hilo classes prior to the beginning of classes may do so over MyUH. Once classes begin, a student cannot withdraw from her/his last or only class at the home institution over MyUH; s/he must contact the Office of the Registrar for assistance. For more information see Complete Withdrawal below.

Courses may be "dropped" without academic penalty (without receiving a grade of "W" for the course) during the first three weeks of a regular semester. Students may also withdraw from a course from the beginning of the fourth week of instruction until the end of the eighth week of instruction. However, in this case, students will receive a grade of "W" for each official course withdrawal. Students who simply stop attending classes without withdrawing over MyUH are not officially withdrawn. Those who fail to withdraw officially during the prescribed period risk receiving an "F" for such courses. A student who is considering dropping or withdrawing should refer to Tuition and Fees to understand their financial responsibilities.

Complete Withdrawal

NOTE: Once classes begin, a student cannot withdraw from his/her last or only class at the home institution over MyUH. UH Hilo students who wish to withdraw from all UH Hilo classes should obtain a Complete Withdrawal form from the Office of the Registrar or download from: <http://hilo.hawaii.edu/registrar/forms.php> and follow official procedures.

For students who completely withdraw *before the end of the third*

week of instruction, the courses will not be reflected on their transcript. Students who completely withdraw after the third week of instruction will receive a "W" for each of the courses in progress at the time of withdrawal. Tuition and fees will be assessed according to the UH system policy.

Students may completely withdraw through the last day of instruction.

A student who completely withdraws and wishes to return for any subsequent semester may be required to submit an admissions application for re-admission. Students who return to UH Hilo after a single semester break (excluding summer) will be eligible to graduate under the requirements in force when they first entered UH Hilo or any campus of the UH System. Students who stop out for more than one semester will be required to fulfill the requirements in force when they return to UH Hilo.

Students may petition the Dean of their College for an approved leave of absence for unusual circumstances beyond the student's control; an approved leave of absence will allow a student to use the catalog in force when s/he entered UH Hilo or another UH System campus with a break of more than one semester.

A student who completely withdraws without an approved Leave of Absence must reapply for admissions. The student may be required to fulfill the requirements in force upon return to UH Hilo.

Change of Major

Classified students who wish to change their major/college should consult their faculty advisor before completing a "Declaration/Change of Major/Program" form. This form is available from the Office of the Registrar (SSB Rm. 101) or online at <http://hilo.hawaii.edu/registrar/forms.php>. However, unclassified students who wish to change to classified status must complete the Common Application Form. Graduating students who wish to enroll in future semesters are required to reapply for entry on the Common Application Form. See below for the difference between "classified" and "unclassified" students.

Classification of Students

The following classifications are used to describe persons attending classes:

Full-time or Part-time Students: Students may register either part-time or full-time. Undergraduate and post-baccalaureate students are full-time if they register for 12 or more semester hours during a Fall or Spring semester, and part-time if they register for fewer than 12 semester hours. Graduate or professional (Pharmacy) students are considered full-time if registered for 6 or more semester hours. In Summer, undergraduate and post-baccalaureate students are full-time if they register for 6 or more semester hours and graduate or professional students are considered full-time if they are registered for 3 or more semester hours.

Classified Students: Classified students are those who have been admitted through the formal selection process and are candidates for a degree or certificate.

Unclassified Students: All students who are not candidates for a degree or certificate or who have not been admitted through the formal selection process are termed "unclassified students." Unclassified students do not qualify for financial aid and pay by the credit hour. Unclassified students who wish to have classified status must apply for admission as a classified student.

Class Standing: Students gain academic standing as follows:

Freshmen	0-24 semester hours successfully completed
Sophomores	25-54 semester hours successfully completed
Juniors	55-88 semester hours successfully completed
Seniors	89 or more semester hours successfully completed
Post-baccalaureate.....	Education certificate students
Master's students	Graduate students
Doctoral students	Graduate students
PharmD students	Professional students

Auditors: Auditors are persons who are permitted to attend classes with the instructor’s consent and who have paid tuition for this privilege. The extent of their classroom participation is determined by the instructor. No credit is given for a course which is audited. Auditors must wait until the first day of instruction to register and must submit the “Auditor’s Form” provided by the Office of the Registrar or online at <http://hilo.hawaii.edu/registrar/forms.php>. Auditors must present the form in person to the Registrar’s office for manual processing.

Course Numbering System

The University of Hawai‘i course numbering system applies to all units of the University. Portions relevant to UH Hilo are as follows:

- 001-099 Developmental courses not applicable to baccalaureate or higher degree
- 100-499 Courses which may be used to satisfy the requirements of a bachelor’s degree
- 100-299 Initial or introductory courses (lower division)
- 300-499 More advanced or specialized courses (upper division)
- 500 Continuous enrollment requirement (graduate)
- 501-599 Professional level courses
- 600-699 Typically taken in first year of graduate study or first in sequence
- 700-800 Advanced (doctoral) graduate courses

Credits, Grades, and Examinations

Work accomplished by students is recognized in terms of semester hours, grades, grade points, and grade point average (GPA).

Credits

Courses are assigned semester credit values determined by the number of hours of study per week required of the student in and outside of the classroom or laboratory. Although semester credit hours normally are fixed, some variable credit courses are offered. The number of credits given for a variable credit course must be approved by the instructor and the department and may not exceed the maximum semester hours that are defined for each course.

Maximum Credit Load

Undergraduate students usually are not permitted to register for more than 18 credits per semester, including work taken through the College of Continuing Education and Community Service. Students who wish to take more than 18 credits per semester must have a cumulative GPA of 3.0 or better and written permission of the advisor and the appropriate college dean. Under no circumstances shall a student be allowed to register for more than 24 semester hours in any semester.

Grades

Students receive one grade in each course taken. This grade combines the results of course work, tests, and final examinations. Grades are indicated by letters and/or plus/minus. Each grade is assigned a certain value in grade points per semester hour of credit, as shown in the table below:

Grade	Significance	Grade Points Per Semester Hour of Credit
A	Excellent	4.0
A-		3.7
B+		3.3
B	Good	3.0
B-		2.7
C+	Satisfactory	2.3
C		2.0
C-		1.7
D	Poor	1.0
F	Failure	0.0

- I Incomplete
- CR Credit
- NC No Credit
- W Withdrawal
- FC+ Failed/Remediation Completed (Pharmacy)
- FC Failed/Remediation Completed (Pharmacy)
- FC- Failed/Remediation Completed (Pharmacy)
- FD Failed/Remediation Completed (Pharmacy)
- P Pass (Pharmacy)
- NP No Pass (Pharmacy)
- S Satisfactory (Graduate Division)
- NG Work-in-Progress (Graduate Division)
- RD Report delayed (Faculty did not submit a grade by the deadline)
- CE Credit by Institutional Examination

Incomplete Grade (I): A grade of “I” may be given for a course in which a student has failed to complete a small but important part of a semester’s work, if the instructor believes that the failure was caused by conditions beyond the student’s control and not by carelessness and procrastination. It is the student’s responsibility to request an incomplete grade.

Each student who receives an “I” should consult with the instructor to determine what work must be done to remove the “I.” If this work is completed by the deadline specified in the UH Hilo Academic Calendar, the instructor will report a change of grade, taking the completed work into consideration. If this work is not completed by the deadline, the “I” grade will become an “F” or failing grade. For graduate courses, the “I” will change to a “NC or “No Credit.” The time limit for incomplete removal prevails whether or not the student maintains continuous enrollment.

An instructor who assigns a grade of “I” will complete a Report of Incomplete Work form indicating what work must be done to complete the requirements of the course. The instructor shall retain the original of the form and provide the student with a copy.

A grade of “I” must be removed by the instructor who assigned it, using a Change of Grade Form. In exceptional circumstances, the division chairperson or the dean can report a change of grade.

Credit/No Credit (CR/NC): Students, provided that they are not on academic probation, may exercise their option to take a maximum of two (2) courses per semester on a “credit/no credit” basis. Courses completed under the CR/NC option may not be used to satisfy the requirements for a major, minor, or certificate, and no more than 12 semester hours in such courses may be counted toward the requirements for a degree. However, this exclusion does not apply to courses that are offered only on a CR/NC basis; these may be counted toward the requirements for a major, minor, or certificate and toward the requirements for a degree.

Once the CR/NC option has been exercised for a course, the designation may not be removed. To qualify for “credit,” the work of the student must be at least at the “C-” (1.7) level. The CR/NC option must be exercised by the date designated for this purpose in the UH Hilo Academic Calendar.

UH Hilo Grade-Point Averages (GPA) are determined by dividing the total number of grade points by the total number of credits for which a student has received letter grades (excluding “I”, “CR”, “NC”, “CE”, “NG,” “RD,” “S,” or “W”). The UH Hilo semester GPA is calculated on any one semester’s credits and grade points. The UH Hilo cumulative GPA is calculated on all such work taken at UH Hilo.

Grade Reports: Students will access their grade results through the MyUH Web site: <https://myuh.hawaii.edu/>

Change of Grade: A student who believes an error has been made in the assignment of a grade must initiate contact with the faculty member involved, the division chair, or dean prior to the last day of instruction of the next regular semester. Students enrolled in the College of Pharmacy should refer to the Academic Policies and Deadlines pertaining to the College of Pharmacy. Failure to act within this time period disqualifies the student from further consideration of the matter. No change of Grades will be processed after graduation.

Credit-by-Examination

Students at UH Hilo are eligible for several forms of credit by examination. A maximum of 30 credits earned through any of the following credit-by-examination alternatives may be applied toward the bachelor's degree.

College Level Examination Program (CLEP)

The College Level Examination Program enables students to earn college credit by examination in areas approved by the disciplines. Classified students may take CLEP tests to demonstrate college level competency no matter when, where, or how this knowledge has been acquired: through formal study, private reading, employment experiences, non-credit courses, military/industrial/business training, or advanced work in regular high school courses. This program gives individuals the opportunity to validate and receive credit for college-level knowledge they already possess.

No student is eligible to take CLEP General Examinations for UH Hilo credit after reaching sophomore standing; i.e., the student must have completed not more than 24 semester hours of college work.

Criteria for passing the CLEP General and Subject Examinations are determined by the appropriate academic discipline. A satisfactory score on these examinations, as determined by the appropriate academic division, yields course credit. Satisfactory scores for advanced standing for CLEP General Examinations at UH Hilo are as follows:

Humanities	50	(3 semester hours)
Mathematics	50	(3 semester hours)
Natural Sciences	50	(3 semester hours)
Social Sciences	50	(3 semester hours)

Students completing CLEP subject examinations with acceptable scores will receive advanced standing college credits which will be noted on their permanent academic record. Please contact Admissions to determine satisfactory scores for the CLEP subject exams and related credit awarded if the course is not listed online at <http://www.uhh.hawaii.edu/studentaffairs/admissions/transfer.php>

Advanced Placement Examination Program (AP)

Credit for comparable UH Hilo courses, as well as advanced standing, may be granted to students who complete Advanced Placement Tests offered by the College Entrance Examination Board. These exams are administered in high schools for students who have completed specific college-level courses in high school. Advanced placement credit decisions are made by the faculty of the appropriate UH Hilo academic discipline. A list of how specific scores on specific Advanced Placement tests will be accepted for credit by UH Hilo is available online at <http://www.uhh.hawaii.edu/studentaffairs/admissions/transfer.php>

International Baccalaureate Program

Advanced standing credit may be awarded for coursework completed in the International Baccalaureate Program. Scores of four or greater in higher level examinations will be considered for advanced credit. Contact the Admissions Office for equivalences.

Credit by Institutional Examination

Students who are enrolled in the University and who believe they have mastered the content of a specific course may, with the permission of the chair of the appropriate academic discipline, be given an examination to determine whether credit should be given for the course. If approval is granted, the chair shall arrange for such an examination. The examination shall be as comprehensive as the usual "final examination," and must be designed to serve as the scholastic equivalent of the course. A satisfactory score will yield course credit in the subject and the grade "CE" (Credit by Exam) will be entered on the student's permanent academic record. Student must be a currently registered UH Hilo student during the term in which the Credit by Exam is given. Credit for the exam is posted to the student's records approximately five (5) weeks into the semester. Credit by Exam can not be used to replace a grade in a course already completed at UH Hilo.

Refer to the UH Hilo Academic Calendar for the last day to apply for Credit by Examination in the Fall and Spring semesters. A fee is required for each credit by institutional examination attempt and must be paid prior to the exam being administered. Where special tests, supplies, and/or materials are required, the student will bear the cost of such items.

Credit for Previous Foreign Language Study

Students who have learned Hawaiian or foreign languages outside of the University of Hawaii'i may earn credit for their language in one of three ways: (1) through credit by institutional examination, if the language is taught at the College of Arts and Sciences or Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language; (2) through the Advanced Placement Examination Program; or (3) through the College-Level Examination Program. For more detailed information, students should consult with the Chairperson of Languages at the College of Arts and Sciences (Humanities Division, Edith Kanaka'ole Hall) or Director of Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language (Edith Kanaka'ole Hall Rm 235).

Native and bilingual speakers of a foreign language may NOT receive credit for courses in that language which are designed for non-native speakers.

Placement and Credit for Previous Knowledge of Hawaiian

Ka Haka 'Ula O Ke'elikōlani is a unique college established to serve native and bilingual speakers of Hawaiian as well as those new to the language. In order to be properly placed in an appropriate level of Hawaiian, students with previous knowledge of Hawaiian should take a placement examination. Ka Haka'Ula conducts placement testing every fall and spring semester on a day during the week prior to the start of classes as well as part of its final examination schedule for HAW 101 through HAW 202. Students in Hawaiian language courses may also earn an appropriate number of credits for demonstration of previous knowledge of Hawaiian language structure, literacy, and oral use. Call Ka Haka 'Ula for more information.

Foreign Language Placement Tests

Students who previously studied foreign languages must consult with the Chairperson of Languages in order to determine the level at which they should enroll for language study.

General Certificate on Education Examination Held Overseas (GCEEO)

The College of Arts and Sciences accepts only A-level GCEEO Examination grades of "A," "B," and "C."

Transfer Credits

For information on transferring credits from another college or university, please see the chapter entitled "Admissions" in this Catalog. It is important to be aware that students transferring into UH Hilo with work done more than ten years prior to their admittance may find such work subject to further evaluation by the individual academic department.

Credit for Education Received While in Military Service

Upon registration and submission of service documents and certificates, the Admissions Office will evaluate all educational experiences undertaken during military service in accordance with the credit recommendations of the Commission on Accreditation of Service Experiences and the Guide to Evaluation of Educational Experiences in Armed Forces. Courses, training, or experience directly related to a military occupation are not eligible for transfer credit. The Admissions Office will transmit its evaluation and recommendations to the relevant discipline for action as to the amount and kind of credits, if any, which are to be accepted. College courses satisfactorily completed through the Defense Activity for Nontraditional Educational Support (DANTES) may be accepted for advanced standing upon the recommendation of the Admissions Office and approval by appropriate faculty members.

Final Examinations

Final examinations are required in all courses except directed reading, research, seminar and composition courses. Final examinations are to be administered during the final examination period specified in the UH Hilo Academic Calendar. Examinations will be administered at the location where the class has been taught at time specified in the regular semesters, no final examinations may be administered within two weeks of the final examination period although chapter or unit tests may be given. Final examinations in some laboratory courses may be administered during the final week of classes. In the compressed schedule of

summer sessions, final exams must be administered as close to the end of the session as possible.

Repeating Courses

With certain restrictions that are noted below, undergraduate students may retake a course with the intention of earning a higher grade. When a course is repeated, the GPA is computed by using **the most recent grade received**. If "W" is the "repeat" grade, the initial grade will be used to compute the GPA. If "F" is the "repeat" grade and the initial grade was "D" or higher, students will retroactively lose the credits that they previously earned. Grades from both initial and repeat attempts remain a part of the student's permanent academic record.

Students may not enroll in a course and receive a grade (including "W") more than three times, except in those courses identified in the Catalog as repeatable.

The only courses a student may repeat with a Credit/No Credit option are those in which the student previously received a grade of "NC" (No Credit). A course for which a student has already received credit may not be repeated through credit by institutional examination. Courses initially taken at UH Hilo must be repeated at UH Hilo in order for the repeat grade to be calculated in the GPA. Grades from other institutions will not be used to calculate the GPA.

Repeatable Courses

Only certain courses that are identified in the Catalog as repeatable can be taken more than once for additional credit. Their course descriptions include the phrase "may be repeated for credit."

Directed Reading and Directed Studies

Directed Reading and Directed Studies require the sponsorship of a member of the faculty and approval by the relevant department, and a description of the work to be undertaken, which, in turn, requires planning in advance of the registration period. Sufficient time, therefore, must be allowed for such planning and for obtaining the necessary faculty approvals.

While a Directed Reading or Directed Studies project normally is student-initiated, early interaction with faculty is essential in the development of a mutually acceptable project description. At a minimum, such a description should contain an outline of the study topic, specification of the work to be done and the materials to be read, the credit to be given, the type and frequency of faculty-student contact, and a statement of the evaluative criteria to be used by the faculty member.

A student may register for not more than six semester hours of Directed Reading and/or Directed Studies per semester with not more than three semester hours granted for any single such course. Not more than twelve credits received from Directed Reading and/or Directed Studies courses may be applied toward a bachelor's degree. The Directed Reading proposal form is available in division and college offices or may be downloaded at <http://hilo.hawaii.edu/registrar/forms.php> Once completed, the original form must be submitted to the the Office of the Registrar.

Declaration of Major

All classified undergraduate UH Hilo students should declare a major before registering for the junior year. Failure to do so could lengthen a student's time to graduation.

Attendance and Satisfactory Academic Progress

Attendance

Regular on-time attendance in class and laboratory sessions is expected of all students in the University. Unavoidable absences should be explained to the instructor involved. If a student finds it necessary to take a leave of absence during a semester, he or she should discuss this with each instructor and arrange to make up course requirements.

Students failing to attend classes during the Add/Drop period may be dropped from those courses to accommodate students on waiting lists.

Satisfactory Academic Progress

Satisfactory academic progress is defined by the University of Hawai'i at Hilo as maintaining an undergraduate or post-baccalaureate UH Hilo cumulative GPA of at least 2.0 or a graduate UH Hilo cumulative GPA of at least a 3.0.

Academic Warning, Probation and Dismissal

Academic Warning

An undergraduate student whose UH Hilo semester GPA is less than 2.0 will be notified and will be encouraged to seek academic advising.

Academic Probation

An undergraduate student whose UH Hilo cumulative GPA is less than 2.0 will be placed on academic probation. A graduate student whose UH Hilo cumulative graduate GPA is less than 3.0 will be placed on academic probation.

Continued Academic Probation

Following a semester on academic probation, an undergraduate student will be placed on continued academic probation if the UH Hilo GPA for the semester just completed was 2.0 or higher, but the UH Hilo cumulative GPA remains less than 2.0.

Academic Dismissal

An undergraduate student whose UH Hilo semester GPA and UH Hilo cumulative GPA are both below 2.0 at the end of a semester of academic probation or continued academic probation will be dismissed from the University. He or she may appeal the academic dismissal in writing to the appropriate college dean by the Monday preceding the start of the semester.

A graduate student whose UH Hilo semester and cumulative GPA is still below a 3.0 at the end of 2 semesters of academic probation will be dismissed from the University. Individual graduate programs may have stricter requirements.

College of Pharmacy students should refer to the College of Pharmacy Handbook for specific information pertaining to academic status and dismissal.

Readmission

An undergraduate student who has been dismissed from the University for academic reasons may apply for readmission one semester after the date of academic dismissal. Such a student may be readmitted only under circumstances deemed acceptable to the appropriate college dean. Readmission is not automatic and will be granted only where there is evidence the student will perform satisfactorily.

Academic Bankruptcy

Undergraduate students may declare one semester of their academic career at UH Hilo as an academically bankrupt semester. Although the student's UH Hilo GPA will be recalculated to exclude all of the grades from the bankrupt semester, the grades from that semester will remain on the transcript. A notation that the student has declared academic bankruptcy will appear on the transcript. **A declaration of academic bankruptcy must be made prior to graduation.**

Students who are interested in declaring academic bankruptcy should take the following into consideration:

1. Courses taken during the semester for which a student declares academic bankruptcy count toward the "3-peat" rule, which limits to three the number of times a student may take a course.
2. If a student received financial aid during the semester for which he or she declares academic bankruptcy, he or she should consult with the Financial Aid Office to determine how declaring academic bankruptcy might impact his or her financial aid eligibility.
3. No courses taken during the semester of academic bankruptcy shall count toward a degree, certificate, or minor.
4. Only one semester may be declared bankrupt during a student's academic career at UH Hilo.
5. Under no circumstances may less than a full semester's work be

declared bankrupt.

The form to declare academic bankruptcy is available at each of the college deans' offices, in each of the College of Arts and Science Division Offices and online at <http://hilo.hawaii.edu/registrar/forms.php>

Honors

Dean's List

Shortly after the close of the Fall and Spring semesters, the names of all full-time undergraduate students who earned 12 or more semester credits for a letter grade at UH Hilo and achieved a GPA of 3.5 or above in the preceding semester will appear on the Dean's List.

Undergraduate Honors at Graduation

Honors in the College of Agriculture, Forestry and Natural Resource Management, the College of Arts and Sciences, the College of Business and Economics or Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language shall be determined in accordance with the cumulative GPA upon graduation in courses taken at UH Hilo in the following manner:

Honors	UH Hilo GPA of 3.50 to 3.69
High Honors	UH Hilo GPA of 3.70 to 3.84
Highest Honors	UH Hilo GPA of 3.85 to 4.00

Only undergraduate students who have earned at least 60 semester hours at UH Hilo, all of which are applicable toward a baccalaureate degree, are eligible for graduation with honors. In addition, at least 54 of the 60 applicable semester hours must be taken for a letter grade. The award of an honors diploma follows the commencement exercise and is subject to the final review of all grades and credits earned.*

To be eligible to receive an honor cord for the Commencement exercise, honors students must have achieved the minimum UH Hilo GPA of 3.50 and completed 45 of the 60 required credits by the end of the term preceding their graduation semester.

*See Academic Regulations for Nursing for School of Nursing honors guidelines.

Academic Dishonesty

Because the University is an academic community with high professional standards, its teaching, research, and service purposes are seriously disrupted and subverted by academic dishonesty. Academic dishonesty includes cheating and plagiarism as defined below. Choosing to join the University community obligates each student to adhere to standards of honesty and integrity. By enrolling in the University, students accept the responsibility to become fully acquainted with the University's regulations and to comply with the University's authority. Ignorance of the definitions of cheating and plagiarism does not provide an excuse for engaging in acts on academic dishonesty.

Cheating includes but is not limited to: (1) using any unauthorized assistance in taking quizzes, tests, or examinations; (2) using sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; (3) acquiring, without permission, tests or other academic material belonging to a member of the UH faculty, staff or student; and (4) engaging in any behavior specifically prohibited by a faculty member in the course syllabus or class discussion.

Plagiarism includes but is not limited to using, by paraphrase or direct quotation, the published or unpublished work of another person without full and clear acknowledgment. It also includes using unacknowledged materials prepared by another person or agency engaged in the selling of term papers or other academic materials.

In cases of suspected or admitted dishonesty, an instructor shall attempt to discuss the matter with the student. If appropriate, the instructor may bring it to the attention of the departmental chairperson, the student's advisor, division chairperson, and/or appropriate academic dean. Additionally, an instructor may refer such cases of academic dishonesty to the Dean of Students for action under the Student Conduct Code. (Refer to the "Student Conduct Code" section of this catalog for more information about the UH Hilo Student Conduct Code or visit the website at

http://hilo.hawaii.edu/studentaffairs/conduct/student_conduct.php

Please note that at the time of this publication, the University of Hawai'i is in the process of revising and updating the Student Conduct Code. Individuals should refer to the UH Hilo website for the most current version of the Code.)

In cases where the student admits to academic dishonesty, the instructor may, within the context of the course, require the student to re-do the assignment, give the student a failing or reduced grade for the assignment, or give a failing or reduced grade for the course. If the student contests his or her liability, the instructor may not take action against the student but must refer the case to the Dean of Students for hearing and disposition under the Student Conduct Code. The Dean of Students may pursue such matters as disciplinary actions under the Student Conduct Code if, after a preliminary investigation, it is his or her determination that probable cause exists to establish that academic dishonesty took place.

Academic Complaints

A student who believes that a faculty member has failed to meet reasonable standards of academic propriety may register a complaint. The Student Academic Complaint Policy has been established to provide guidelines and processes governing academic complaints. The student should first attempt to resolve the complaint on an informal basis with the faculty member. Should the complaint not be resolved at this level, the student should discuss it with the faculty's Discipline/Department Chairperson. If still no resolution is reached, the student may bring the matter to the Division Chair in the College of Arts and Sciences and then in writing to the Dean, or in writing to the Dean in the other colleges. Copies of the academic complaint policy are available in the offices of the dean or director of each college, in the office of the Vice Chancellor for Academic Affairs, and online at <http://hilo.hawaii.edu/policies/documents/AcademicComplaintPolicy.pdf>

Participation in Assessment Efforts

The University of Hawai'i at Hilo is committed to providing students the highest quality college experience. In order that we continue to improve programs and activities, students may be required to participate in university assessment efforts including university-wide surveys and surveys relating to General Education or the student's major field of study. Responses will be kept confidential.

Graduation Requirements

Catalog Choice and Retroactivity

Students may choose to fulfill all requirements from a catalog for which they are eligible or they may fulfill the general education and integrative requirements from one of the catalogs for which they are eligible and all of the major requirements from another of the catalogs for which they are eligible. Catalog eligibility will be confirmed by the Office of the Registrar upon filing for graduation. It is imperative for the student to work closely with their faculty advisor to make sure that the proper requirements are met.

Except as noted below, UH Hilo students may elect to follow the requirements selected from the following catalogs:

- The default catalog for all students entering UH Hilo will be the one in effect when they first enroll at UH Hilo as long as they maintain continuous enrollment, defined as no more than a one semester interruption* (excluding summers); if a student interrupts his/her enrollment by two or more consecutive semesters* (excluding summers), the "entering" catalog will be the one in force when the student returns to UH Hilo.
- Students may elect to use the catalog in force when they entered any campus of the UH System as long as they maintain continuous enrollment as defined above.
- Students may petition the Dean of their College for an approved leave of absence for unusual circumstances beyond the student's control; an approved leave of absence will allow a student to use the catalog in force when s/he entered UH Hilo or another UH System campus with a break of more than one semester.

- At the time of graduation, students may elect the UH Hilo catalog in force at graduation.

Early in their academic careers, students should choose an entering catalog and should file a "catalog declaration" form with the Office of the Registrar. This will determine the default requirements in STAR.

At the time they file an application for graduation, they will again have the opportunity to choose the catalog under which they would like to graduate from the catalogs they are eligible for.

*Study Year Abroad and National Student Exchange are not considered breaks in continuous enrollment

Baccalaureate Degrees: General Requirements

Baccalaureate degrees are granted only to those students who:

1. earn at least 120 semester hours
2. complete satisfactorily the program of courses prescribed for their majors
3. earn at least a 2.0 UH Hilo cumulative GPA as well as a 2.0 GPA in courses required for the major (a higher GPA may be required for some degrees) and minor (if any)
4. earn a minimum of 30 semester hours from UH Hilo
5. have been registered as classified students with a declared major in attendance at UH Hilo within the preceding calendar year
6. meet all requirements of their respective colleges and departments.

All degree requirements must be met within the special limitations imposed upon directed reading/directed studies, "credit/no credit," and the credit by examination policy. Students should consult all appropriate sections of this Catalog or speak with their faculty advisors or college deans for more details on these limitations.

Second Baccalaureate Degrees

A student who has already received a baccalaureate degree may earn a second baccalaureate degree of a different type (e.g., B.S. versus B.A.) or the same type of degree provided that:

- The major is different from the prior degree
- The student completes a minimum of 30 semester credit hours at UH Hilo after the first degree has been awarded. (Note: Students who received a baccalaureate degree from UH Hilo are exempt from this requirement.)
- All degree requirements are met

Students seeking a second degree are classified as seniors for registration.

Students entering the College of Arts and Sciences, the College of Business and Economics, and Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language, who have completed a B.A. degree from a regionally accredited college or university (excluding other baccalaureate degrees), will be exempted from the General Education requirements for a second B.A. degree, unless specific prerequisites are needed for the new major.

Students who have completed other kinds of baccalaureate degree may need to take additional courses to complete the Basic and Area requirements, as well as the Integrative, major, and other graduation requirements. Application for Graduation

An application for graduation from any of the degree or certificate programs offered by UH Hilo must be submitted to the Business Office for processing by the deadline specified in the UH Hilo Academic Calendar. The Application for Degree/Certificate form and complete filing instructions are available at <http://hilo.hawaii.edu/registrar/forms.php> A non-refundable processing fee of \$15.00 is charged upon application. Failure to file a graduation application by the specified deadline will result in a delay of graduation.

Graduation in Absentia

Under extraordinary circumstances, students may earn their final credits at an institution other than UH Hilo and, upon official transfer of these credits back to UH Hilo, graduate with their degree from UH Hilo. This practice is called graduation in absentia. Students must demonstrate a compelling personal reason to graduate in absentia, and their application must be approved by the appropriate dean before any courses are taken in absentia.

Graduation in absentia is not automatic nor is it a right of students. In order to be eligible to be considered for graduation in absentia, a student must meet all of the specified conditions. Forms are available at <http://hilo.hawaii.edu/registrar/forms.php> Students whose application for graduation in absentia has been approved also must apply for graduation as described in the preceding section.

Exceptions to Academic Regulations

Any student may petition the University for a waiver of or other exception to any academic policy or regulation. If the request involves a requirement for a major or minor, the petition goes to the chair of the department. If it involves a General Education or graduation requirement, the petition goes to the dean of the student's college. The petition should include clear and convincing justification for the action requested as well as appropriate documentation, such as syllabi or catalog course descriptions of the courses in question.

Request for Modification of Academic Requirement forms may be obtained in any of the CAS Division Offices, each of the college dean's offices., and the Office of the Registrar, or online at <http://hilo.hawaii.edu/registrar/forms.php>

Campus Policies

Accreditation

UH Hilo is accredited by the Accrediting Commission for Senior Colleges and Universities of the Western Association of Schools and Colleges (WASC). Contact information for the Commission is as follows: 985 Atlantic Avenue, Ste. 100, Alameda, CA 94501; Tel: 510-748-9001; Fax: 510-748-9797; wascsr@wascsenior.org; www.wascsenior.org. Students may transfer credits to other American or foreign universities on the same basis as course credits are transferred by other accredited American universities. Documents relating to the accreditation of the University of Hawai'i at Hilo are available to the public at the Edwin H. Mookini Library and at www.uhh.hawaii.edu/uhh/accreditation/.

For accreditation information regarding specific colleges or programs, please see <http://hilo.hawaii.edu/catalog/accreditation.html>.

Clery Act Statement

The *UH Hilo Annual Campus Security Report* includes statistics for the previous three years concerning reported crimes that occurred on-campus, in certain off-campus buildings, property owned or controlled by the UH Hilo, and on public property within, or immediately adjacent to and accessible from, the campus. The report also includes institutional policies concerning campus security, such as policies concerning sexual assault, and other matters. You can obtain a copy of this report by calling UH Hilo Campus Security at (808) 974-7911 or visiting the Auxiliary Services Building, Room 104; the report is also available online at <http://hilo.hawaii.edu/auxsvc/security/AnnualSecurityReport.php>.

Nondiscrimination Policy

The University of Hawai'i at Hilo is an institution that is committed to promoting a working and learning environment free of discrimination on the basis of race, sex, gender identity and expression, age, religion, color, national origin, ancestry, citizenship, disability, genetic information, National Guard absence, status as a covered veteran, marital status, sexual orientation, breastfeeding, income assignment for child support, domestic violence victim status, arrest and court record (except as permissible under State law), and retaliation. It allows all individuals in the university to have fair and equal treatment in the processes which affect education and employment by enforcing all federal/state laws and regulations and the University of Hawaii Board of Regents policies related to civil rights, affirmative action and non-discrimination.

For information on equal employment opportunity/affirmative action policies or discrimination complaint procedures for UH Hilo, see the *UH Hilo Policies and Procedural Guidelines for Nondiscrimination on the Basis of Disability* online at <http://hilo.hawaii.edu/studentaffairs/uds/documents/UHHiloGuidelinesforNondiscriminationontheBasisofDisability.pdf>* or contact the following persons:

Complaint against a student:

Kelly Oaks, Interim Assistant Vice Chancellor for Student Affairs and Dean of Students
Student Services Building, Room 210
Phone: (808) 933-0859
Fax: (808) 974-7691
TTY: (808) 933-3334/3335

Complaint against an employee:

Director, Equal Employment Opportunity/Affirmative Action,
Title VI, Non-Athletic Title IX Coordinator
Trailer E (Behind the Business Office)
Phone: (808) 933-0824
TTY: (808) 933-3334/3335
eooaa@hawaii.edu

Athletics - Title IX

Timothy Moore
Interim Director of Athletics
320C-107B
(808) 974-7621
TTY: (808) 933-3334/5

* Available in alternate format upon request by contacting University Disability Services at (808) 933-0816 [V] or (808) 933-3334 [TTY].

Notice to Persons with Disabilities

In accordance with federal and state law, it is the policy of the University of Hawai'i at Hilo that no otherwise qualified person with a disability shall be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination by any University program or activity. UH Hilo also adheres to a set of institutional policies and procedures for non-discrimination on the basis of disability. The *UH Hilo Policies and Procedural Guidelines for Nondiscrimination on the Basis of Disability* is available online at <http://hilo.hawaii.edu/studentaffairs/uds/documents/UHHiloGuidelinesforNondiscriminationontheBasisofDisability.pdf>. A hard copy may be obtained by contacting the Disability Services Office at (808) 933-0816 [V], (808) 933-3334 [TTY], uds@hawaii.edu (email). Services for students with a disability are provided by the Disability Services Office. Faculty and staff requesting accommodations should contact their supervisor and/or the Equal Employment Opportunity/Affirmative Action Office at (808) 933-0824, (808) 933-0728, or jkuewa@hawaii.edu.

University of Hawai'i at Hilo Graduation and Persistence Rates

First-Time, Full-Time, Degree-Seeking Undergraduates

Fall 2007 Cohort:

GRADUATION RATE—Graduated within 6 years: 36%

Gender

Men: 31%

Women: 40%

IPEDS Race/Ethnicity

Nonresident alien: 30%

Hispanic/Latino: 33%

American Indian or Alaska Native: #

Asian: 38%

Black or African American: #

Native Hawaiian or Other Pacific Islander: 37%

White: 34%

Two or more races: 44%

Race or ethnicity unknown: #

Federal Grant/Loan Recipient

Recipient of a Federal Pell Grant: 34%

Recipient of a subsidized Stafford Loan who did not receive a Pell Grant: 33%

Student who did not receive either a Pell Grant or a subsidized Stafford Loan: 38%

PERSISTENCE RATE—Still enrolled 6 years after entry: 6%

Note: A pound sign (#) denotes any cohort/subcohort with fewer than ten students.

This information is provided for the Student Right-to-Know Act, Public Law 101-542. It provides a partial description of the graduation and enrollment patterns of students. It should not be used to infer or predict individual behavior.

Family Educational Rights and Privacy Act (FERPA)

The Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their education records. They are:

1. The right to inspect and review the student's education records within 45 days of the day the university receives a request for access. Students should submit to the registrar, dean, head of the academic department, or other appropriate official, written requests that identify the record(s) they wish to inspect. The University 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 University official to whom the request was submitted, that official shall advise the student of the correct official to whom the request should be addressed.
2. The right to request the amendment of the student's education records that the student believes are inaccurate or misleading. Students may ask the University to amend a record that they believe is inaccurate or misleading. They should write the University official responsible for the record, clearly identify the part of the record they want changed, and specify why it is inaccurate or misleading. If the University decides not to amend the record as requested by the student, the University will notify the student of the decision and advise the student of his or her 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.
3. The right to consent to disclosures of personally identifiable information contained in the student's education records, except to the extent that FERPA authorizes disclosure without consent. One exception which permits disclosure without consent is disclosure to school officials with legitimate educational interests. A school official is a person employed by the university in an administrative, supervisory, academic or research, or support staff position (including law enforcement unit personnel and health staff); a person or company with whom the University has contracted (such as an attorney, auditor, or collection agent); a person serving on the Board of Trustees; or a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another school official in performing his or her tasks.
4. The right to file a complaint with the U.S. Department of Education concerning alleged failures by the University 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 20202-4605
5. Students are advised that institutional policy and procedures required under FERPA have been published as Administrative Procedure A7.022 Procedures Relating to Protection of the Educational Rights and Privacy of Students. Copies of Administrative Procedure A7.022. Students may obtain a copy of this policy online by accessing www.svpa.hawaii.edu/svpa/apm/a700/a7022a.pdf or by contacting the Office of the Registrar (Student Services Bldg. Room 101, phone (808) 974-7322, (808) 933-3334 (TTY) or the Office of the Vice Chancellor for Student Affairs (Student Services Bldg. Room 209, phone (808) 974-7335, (808) 933-3334 (TTY).
6. Directory Information. Students are advised that certain personally identifiable information is considered by the university to be Directory Information. In response to public inquiry, directory information may be disclosed without prior consent of the student unless the student otherwise so informs the university not to disclose such information.

- Name of student
- Local address and zip code
- Local telephone number
- Major field of study
- Educational level
- Fact of participation in officially recognized activities and sports
- Weight and height of members of athletic teams
- Dates of attendance
- Enrollment status (full- or part-time)
- Most recent educational institution attended
- Degrees and awards received
- Email address
- Photographs
- Dean's List

A student has the right to request that above items not be designated Directory Information with respect to that student. Should a student wish to exercise this right, he or she must in person and in writing, not earlier than the first day of instruction nor later than fourteen calendar days from the first day of instruction for the academic term or semester, or the fourth day of a summer session, inform each Campus Registrar of each campus he or she is attending that the above items are not to be disclosed without the prior consent of that student. Report to the Office of the Registrar at the Student Services Building to make this request.

7. A parent or spouse of a student is advised that information contained in educational records, except as may be determined to be Directory Information, will not be disclosed to him/her without prior written consent of the son, daughter, or spouse. However, if a student is claimed as a dependent for Federal income tax purposes by a parent, then under the newest regulations, either parent may have access to the student's education records without the student's consent. The parents must submit a copy of their most current Federal Tax return to the Office of the Registrar verifying that the student is in fact a dependent.

Adapted from the UH Manoa FERPA statement: www.hawaii.edu/myuh/manoa/notices/ferpa.html.

Student Conduct Code

The University of Hawai'i at Hilo has a Student Conduct Code that specifies behavior that is subject to University disciplinary action and describes the disciplinary procedures and sanctions that may be imposed if a student is found responsible for violating the Code. Choosing to join the University community obligates each student to abide by the code of conduct. By enrolling in the University, students accept the responsibility to become fully acquainted with the University's regulations and to comply with the University's authority. The University expects students to maintain standards of personal integrity that are in harmony with the educational goals of the institution; to respect the rights, privileges, and property of others; and to observe national, state, and local laws and University regulations.

The full text of the Student Conduct Code is available online at hilo.hawaii.edu/studentaffairs/conduct/.

Any member of the University community (faculty, staff, or student) may bring forth an allegation that a student has violated the Student Conduct Code. Reports should be submitted in writing to the Dean of Students. Disciplinary authority is exercised through the Dean of Students or designee or the Student Conduct Committee, or, in cases dealing with academic dishonesty, by a faculty member (refer to the section on academic dishonesty in the Academic Regulations section of this catalog). The Dean of Students, Student Conduct Committee, or faculty member follows standard procedures for handling allegations of misconduct.

One or more of the following sanctions may be imposed when a student is found responsible for violating the Student Conduct Code:

- warning;

- probation;
- a failing or reduced grade for a course or an assignment;
- restitution;
- temporary suspension in emergency situations;
- suspension;
- dismissal;
- rescission of grades or degree.

The following types of behavior conflict with the community standards that the University values and expects of students. Engaging in, or attempting to engage in, any of these behaviors subjects a student to the disciplinary process and consequent sanctions.

Acts of dishonesty, including but not limited to the following:

Cheating, plagiarism, or other forms of academic dishonesty. The term "cheating" includes but is not limited to: (1) use of any unauthorized assistance in taking quizzes, tests, or examinations; (2) use of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; (3) the acquisition, without permission, of tests or other academic material belonging to a member of the UH faculty, staff or student; and (4) engaging in any behavior specifically prohibited by a faculty member in the course syllabus or class discussion. The term "plagiarism" includes but is not limited to the use, by paraphrase or direct quotation, of the published or unpublished work of another person without full and clear acknowledgment. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials.

Furnishing false information to any UH official, faculty member, or office.

Forgery, alteration, or misuse of any UH document, record, or form of identification.

Drugs: Use, possession, manufacture, or distribution of marijuana, heroin, narcotics, or other controlled substances except as expressly permitted by law.

Alcohol: Use, possession, manufacture, or distribution of alcoholic beverages by any person under twenty-one (21) years of age. Public intoxication is expressly prohibited. Consumption of alcoholic beverages on campus is permitted only in the Hale 'Ikena residence hall by students 21 years of age or older. Consumption of alcoholic beverages is forbidden in all public and common areas of the residence halls and elsewhere on campus.

Disruption or obstruction of teaching, research, administration, disciplinary proceedings, other UH activities, including its public service functions on or off campus, or of other authorized non-UH activities when the conduct occurs on UH premises. This includes creating noise or other disturbances on campus or in student life areas sufficient to disrupt the normal functioning of campus activities including classroom instruction.

Any conduct which threatens or endangers the health or safety of any person including but not limited to physical abuse, verbal abuse, threats, intimidation, harassment, coercion, and stalking.

Sexual harassment: Sexual advances, requests for sexual favors or other behavior of a sexual nature that is unwelcome and sufficiently severe or pervasive that it interferes with a person's academic or professional performance or creates an intimidating, hostile or offensive educational or employment environment. The behavior can be verbal, non-verbal or physical. Examples include sexual innuendo, spreading sexual rumors, sexual put-downs and jokes, remarks of a sexual nature about a person's clothing or body, offensive written notes or emails, sexual propositions, insults or threats, leering, whistling, suggestive or insulting sounds and gestures, and touching someone's body when unwelcome. The *University of Hawaii Executive Policy on Sexual Harassment and Related Conduct* (www.hawaii.edu/offices/eo/policies.php?policy=sexual_harassment) contains detailed information.

Discrimination of any person based on the UH protected classes: www.hawaii.edu/offices/eo/policies.php?policy=antidisc.

Attempted or actual theft of and/or damage to property of the UH or property of a member of the UH community or other personal or public

property, on or off campus.

Hazing, defined as an act which endangers the mental or physical health or safety of a student, or which destroys or removes public or private property, for the purpose of initiation, admission into, affiliation with, or as a condition for the continued membership in a group or organization. The express or implied consent of the victim will not be a defense. Apathy or acquiescence in the presence of hazing is not a neutral act; both are violations of this rule.

Failure to comply with any directions of UH officials or law enforcement officers acting in performance of their duties and/or failure to provide identification to these persons when requested to do so.

Breach of security: Unauthorized possession, duplication, or use of keys, keycards, or other security mechanisms to any UH premises or unauthorized entry to or use of UH premises.

Illegal or unauthorized possession of firearms, explosives, other weapons, or dangerous chemicals on UH premises or use of any such item, even if legally possessed, in a manner that harms, threatens or causes fear to others.

Participating in an on-campus or off-campus demonstration, riot or activity that disrupts the normal operations of the UH and/or infringes on the rights of other members of the UH community; leading or inciting others to disrupt scheduled and/or normal activities within any campus building or area.

Obstruction of the free flow of pedestrian or vehicular traffic on UH premises or at UH sponsored or supervised functions.

Conduct that is disorderly, lewd, or indecent; breach of peace; or aiding, abetting, or procuring another person to breach the peace on UH premises or at functions sponsored by, or participated in by, the UH or members of the academic community. Disorderly conduct includes but is not limited to any unauthorized use of electronic or other devices to make an audio or video record of any person while on UH premises without his/her prior knowledge or without his/her consent, when such a recording is likely to cause injury or distress. This includes but is not limited to surreptitiously taking pictures of another person in a gym, locker room, or restroom.

Theft or other abuse of computer and other electronic facilities and resources, including but not limited to:

- Unauthorized entry into a file to use, read, or change the contents or for any other purpose.
- Unauthorized transfer of a file.
- Use of another individual's identification and/or password.
- Use of computing facilities and resources to interfere with the work of another student, faculty member of UH official.
- Use of computing facilities and resources to send obscene or abusive messages.
- Online harassment of members of the UH community.
- Use of computing facilities and resources to interfere with normal operation of the UH computing system.
- Use of computer facilities and resources in violation of copyright laws.
- Any violation of any UH computer use policy.

Violations of residence hall regulations where the violation also involves some aspect of this Student Conduct Code may subject the student to disciplinary procedures under this Student Conduct Code.

Abuse of the Student Conduct Code system.

Violation of any UH policy, rule, regulation, contract or agreement.

Violation of any federal, state or local law.

Baccalaureate Degree Requirements

A baccalaureate degree (also called a “bachelor’s degree”) is earned upon the completion of at least 120 college semester hours. To earn the baccalaureate degree, students must also complete the requirements for their major; these are listed by department and degree elsewhere in the catalog.

In addition, students must complete the following graduation requirements:

- Complete at least 120 semester college credits. This minimum is higher for some baccalaureate degrees.
- Earn at least a 2.0 cumulative UH Hilo GPA as well as a 2.0 GPA in courses required for the major (a higher GPA may be required for some degrees) and minor (if any).
- Earn a minimum of 30 semester hours from UH Hilo.
- Have been registered as classified students with a declared major and in attendance at UH Hilo within the preceding year.
- Meet all requirements of their respective colleges and departments.

General Education Requirements

In Fall 2011, a new set of General Education Core and Integrative requirements went into effect. In brief, they are:

Core:

Basic Requirements

- English Composition (3 credits)
- Language Arts (3 credits)
- Quantitative Reasoning (6 credits)
- World Cultures (6 credits)

Area Requirements

- Humanities (6 credits in two different disciplines)
- Social Sciences (6 credits in two different disciplines)
- Natural Sciences (7 credits, including two lecture courses in different disciplines and one laboratory course associated with one of these)

Integrative Requirements

- Writing Intensive (3 courses, at least one at the upper-division level)
- Hawaii-Pan Pacific (3 credits)
- Global and Community Citizenship (3 credits)

Courses currently certified for these categories are listed at hilo.hawaii.edu/academics/gened/.

Students may satisfy the General Education requirements in force in the year they entered UH Hilo or any of the UH campuses, as long as they have maintained continuous enrollment. Please see your advisor if you wish to know more about this option.

Additionally, students may take a number of elective courses, which are not used to fulfill any particular requirement but make up the 120+ semester credits needed to graduate. These electives may be chosen from any undergraduate course offered at UH Hilo. When choosing electives,

student may wish to consult their advisors to select courses that enhance learning in their major or expand options for careers or graduate study.

All degree requirements must be met within the special limitations imposed upon directed reading/directed studies, “credit/no credit” courses, and the credit by examination policy. Students should consult the appropriate sections of this Catalog and speak with their faculty advisors or college deans for more details on these limitations.

With the approval of his or her academic advisor, a student may petition the University for a waiver or modification of academic requirements. If the request involves a requirement for a major or minor, the petition goes to the chair of the department. If it involves a General Education or graduation requirement, the petition goes to the dean of the college. The petition should include clear and convincing justification for the action requested as well as appropriate documentation, such as syllabi or catalog course descriptions of the courses in question.

It is extremely important that each student meet with an academic advisor regularly to ensure timely progress toward a degree. Students who have not declared a major should consult with the Advising Center staff, (808) 974-7688. Declared majors will be assigned a faculty advisor in their discipline.

For additional information regarding baccalaureate degree requirements, please see <http://hilo.hawaii.edu/catalog/undergraduate-education.html>

General Education Core: Basic Requirements (All Majors)

These requirements apply effective Fall 2011.

1. No course may be counted for more than one General Education CORE requirement. Students are cautioned that, in a few instances, a single course has been certified for more than one of the General Education Basic or Area Requirements. However, students completing such a course may only receive credit toward a single such requirement. They will be offered their choice of which requirement is satisfied and will be expected to fulfill the other requirement(s) with other courses.
2. Courses which meet both major requirements and General Education Core or Integrative requirements may be simultaneously counted for both. (Courses are not excluded from meeting the UH Hilo General Education requirements solely because they also may be required for a major.)
3. Courses which are certified for a General Education Core requirement and an Integrative requirements may be simultaneously counted for both.

1. English Composition Requirement (3 credits)

Students must successfully complete a first-year writing course. This requirement is met by taking one of the following courses: ENG 100, ENG 100T, ESL 100 or ESL 100T. It is recommended that students complete the English composition requirement within their first 24 semester hours at UH Hilo.

Entering students who do not possess an SAT or ACT essay score, transfer students who have not transferred a course equivalent to English 100, and all students who are non-native speakers of English must take the UH Hilo Writing Placement Examination. This will determine into which English course you are placed.

2. Language Arts (3 credits)

Students select a semester course of foreign language study, linguistics or second level English to fulfill this requirement. These courses engage students in the process of constructing, analyzing, and employing language. Additional courses may be certified for this category. These courses are also listed at hilo.hawaii.edu/academics/gened/gl.php.

Select one:

CHNS 101 Elementary Chinese I
 CHNS 102 Elementary Chinese II
 CHNS 107 Accelerated Elementary Chinese
 COM 270 Introduction to Theories of Human Communication
 CS 200 Web Technology I
 ENG/WS 204 Introduction to Race/Gender Film Studies
 ENG 205 Hawai'i on Screen
 ENG/WS 206 Introduction to Popular Culture
 ENG/WS 257 Multicultural Literature
 ENG 286A Introduction to Fiction Writing
 ENG 286B Introduction to Poetry Writing
 ENG 290 Literature & Medicine
 ENG 462 Shakespeare II
 FIL 101 Elementary Filipino I
 FR 101 Elementary French I
 FR 102 Elementary French II
 HAW 101/107 Elementary Hawaiian I
 HAW 102/107 Elementary Hawaiian II
 HAW 201/207 Intermediate Hawaiian I
 HAW 202/207 Intermediate Hawaiian II
 JPNS/JPST 101 Elementary Japanese I
 JPNS/JPST 102 Elementary Japanese II
 JPNS 107 Accelerated Elementary Japanese
 JPNS/JPST 201 Intermediate Japanese II
 JPNS/JPST 202 Intermediate Japanese II
 KHAW 103 First Level Trans Hawaiian Immersion
 KHAW 104 First Level Partial Hawaiian Immersion
 KHAW 108 Accel First Level Hawaiian Immersion
 KHAW 133 First level Hawaiian for Speakers
 KHAW 203 Second Level Univ. Hawaiian Immersion
 KHAW 204 Second Level Univ. Hawaiian Immersion
 KHAW 208 Accel Second Level Univ. Hawaiian Immersion
 KHAW 233 Second Level Hawaiian for Speakers
 KIND 240 Culture Revitalization Movement
 LING 102 Introduction to Linguistics
 LING 133 Elem. Indigenous Language
 LING 233 Intermediate Indigenous Language
 SPAN 101 Elementary Spanish I
 SPAN 102 Elementary Spanish II
 SPAN 201 Intermediate Spanish I
 SPAN 202 Intermediate Spanish II

3. Quantitative Reasoning (6 credits)

Students select a semester course of math and a second semester course of math, statistics or symbolic reasoning to fulfill this requirement. These courses enable students to understand the use of mathematical or symbolic concepts and require students to develop skills in chains of reasoning from data to conclusions. These courses are also listed at hilo.hawaii.edu/academics/gened/gq.php.

Select one course from List A and one course from either List A or List B:**List A:**

MATH 100 Survey of Math
 MATH 104 Precalculus Math
 MATH 104F Precalculus I: Functions
 MATH 104G Precalculus II: Trigonometry & Geometry
 MATH 111/CS 102 MS Office Tools for Math and Science
 MATH 115 Applied Calculus
 MATH 121 Introduction to Statistics & Probability

MATH 205 Calculus I
 MATH 206 Calculus II
 MATH 231 Calculus III

List B:

AGBU 110 Microcomputing for Agriculture
 ASTR 180 Principles of Astronomy I
 CHEM 100/111 Chemistry for Non-Science Majors
 CS 102/MATH 111 MS Office Tools for Math and Science
 CS 282 Computer Competency for Business
 ECON 131 Introduction to Macroeconomics
 ECON 340 Money & Banking
 GEOG 201 Interpreting Geographic Data
 GEOL 170 Volcanoes and Earthquakes
 MARE 250 Statistical Applications in Marine Science
 PHIL 345 Symbolic Logic
 QBA 260 Business Statistics
 SOC 280/280L Statistical Reasoning/Lab

4. World Cultures (6 credits)

Students select two semester courses. These courses offer a broad, integrated analysis of cultural, economic, political, scientific, philosophical, religious and social developments that recognizes the diversity of human societies, diverse cultural traditions and cross-cultural interaction.

Select two:

AG 100 Intro to Agricultural Sciences
 AG 230 Sustainable Agriculture
 ANTH 100 Cultural Anthropology
 ANTH/WS 320 Cross-Cultural Study of Women
 ANTH/WS 324 Culture, Sex, and Gender
 ANTH 372 Culture through Film
 ENG/WS 201 Global Cinema
 ENG/WS 202 Literature of Human Rights
 ENG 253 World Literature: Class – 17th Century
 ENG 254 World Literature: 17th Cent – Present
 ENG 275 Literature of the Earth
 ENG 289 The Rhetoric of Food
 GEOG 102 Geography of World Cultural Regions
 HIST 151 World History: To 1500
 HIST 152 World History: From 1500
 KIND 240 Culture Revitalization Movement
 LING 432 Critical Applied Linguistics
 POLS 251 Introduction to Comparative Polit
 WS 357 Women and Religion

1. Humanities Electives (6 credits)

Students select one semester course in one area and a second semester course in a different area. These courses use the terminology of the visual, performing, or creative arts; or of the study of philosophy, language, communication, or religion; or of literary representations.

ART 101 Introduction to Visual Arts
 ART 109 Introduction to Drawing & Painting
 ART 270 Aspects of Western Art
 ART 280 Aspects of Asian Art
 BIOL/PHIL 392 Biology & Philosophy
 CHNS 101 Elementary Chinese I
 CHNS 102 Elementary Chinese II
 CHNS 107 Accelerated Elementary Chinese
 COM 100 Human Communication in a Diverse Society
 COM 270 Introduction to Theories of Human Communication
 DNCE 251 Introduction to Dance
 DNCE 419 Dance in Education
 DRAM 271 Introduction to Theatre
 DRAM 419 Drama in Education
 ENG 200A, B, C, D, E, F Introduction to Literary Genres
 ENG/WS 201 Global Cinema

ENG/WS 202 Literature of Human Rights
 ENG/WS 204 Introductory Race/Gender Film Studies
 ENG 205 Hawai'i on Screen
 ENG/WS 206 Introduction to Popular Culture
 ENG 253 World Literature: Class – 17th Cent
 ENG 254 World Literature: 17th Cent – Pres
 ENG/WS 257 Multicultural Literature
 ENG 275 Literature of the Earth
 ENG 286A Introduction to Fiction Writing
 ENG 286B Introduction to Poetry Writing
 ENG 289 The Rhetoric of Food
 ENG 290 Literature and Medicine
 ENG 323 The Literature of Hawai'i
 ENG 345 Children & Literature
 ENG 355 Women in Modern Literature and Film
 ENG/WS 423 Post-Colonial Literature
 ENG 430 Pacific Islands Literature
 ENG 462 Shakespeare II
 FR 101 Elementary French I
 FR 102 Elementary French II
 HAW 101/107 Elementary Hawaiian I
 HAW 102/107 Elementary Hawaiian II
 HAW 201/207 Intermediate Hawaiian I
 HAW 202/207 Intermediate Hawaiian II
 HWST/MUS 175 Intro. to Music of Polynesia
 HWST/MUS 176 History & Development of Hawaiian Music
 HWST 211 Hawaiian Ethnobotany
 HWST 213 Hawaiian Ethnozoology
 JPNS/JPST 101 Elementary Japanese I
 JPNS/JPST 102 Elementary Japanese II
 JPNS 107 Accelerated Elementary Japanese
 JPNS/JPST 201 Intermediate Japanese I
 JPNS/JPST 202 Intermediate Japanese II
 JPST/JPNS 382 Gender & Minority Issues in Japanese Comics
 JPNS/JPST/ENG 365 Japanese Literature in English
 JPST/JPNS/DRAM 383 Japanese Theatre & Performance
 JPST/JPNS 385 Postwar Japan thru Film/Literature
 KHAW 103 First Level Trans Hawaiian Immersion
 KHAW 104 First Level Partial Hawaiian Immersion
 KHAW 108 Accel First Level Hawaiian Immersion
 KHAW 133 First level Hawaiian for Speakers
 KHAW 203 Second Level Univ. Hawaiian Immersion
 KHAW 204 Second Level Univ. Hawaiian Immersion
 KHAW 208 Accel Second Level Univ. Hawaiian Immersion
 KHAW 233 Second Level Hawaiian for Speakers
 LING 102 Introduction to Linguistics
 LING 133 Elem. Indigenous Language
 LING 233 Intermediate Indigenous Language
 LING 412 Discourse Analysis
 MUS 141 Computer Music
 MUS 176 History and Development of Hawaiian Music
 PHIL 100 Introduction to Western Philosophy
 PHIL 101 Intro to Eastern Philosophy
 PHIL 209 Reasoning
 PHIL 211 History of Ancient Philosophy
 PHIL 213 History of Modern Philosophy
 PHIL 220 Social Ethics
 PHIL 230 Belief, Knowledge & Truth
 PHIL 300 History of Indian Philosophy
 PHIL 301 History of Chinese Philosophy
 PHIL 302 History of Buddhist Philosophy
 PHIL 310 Metaphysics
 PHIL 315 Ethical Theory
 PHIL 323 Professional Ethics
 PHIL 330 Philosophy of Art
 PHIL 340 Philosophy of Religion

PHIL 381 Philosophy of Wittgenstein
 PHIL 390 History & Philosophy of Science
 PHIL/WS 393 Normality, Abnormality & Society
 PHIL/JPST 430 Philosophy of Zen
 PHIL 435 Philosophy of Tao
 PHIL/JPST 450 Mahayana Buddhist Philosophy
 SPAN 101 Elementary Spanish I
 SPAN 102 Elementary Spanish II
 SPAN 201 Intermediate Spanish I
 SPAN 202 Intermediate Spanish II
 SPAN/WS 368 Latin American Women's Literature
 WS 393 Normality, Abnormality, & Society

2. Social Sciences Electives (6 credits)

Students select one semester course in one area and a second semester course in a different area. These courses use the terminology of theories, structures, or processes in the social or psychological sciences and engage students in the systematic study of human behavior, both social and individual.

ANTH 100 Cultural Anthropology
 ANTH 110 Archaeology
 ANTH/WS 320 Cross-Cultural Study of Women
 ANTH/WS 324 Culture, Sex & Gender
 ANTH 372 Culture through Film
 ANTH 385 Hawaiian & Pacific Prehistory
 ANTH 389 Cultural Resource Management
 BUS 100 Introduction to Business
 COM 270 Introduction to Theories of Human Communication
 ECON 100 Introduction to Economics
 ECON 130 Introduction to Microeconomics
 ECON 131 Introduction to Macroeconomics
 ECON 340 Money & Banking
 ECON 416 Asian-Pacific Economic Integration
 ED 210 Introduction to Teaching
 GEOG 102 Geography of World Cultural Regions
 GEOG 103 Geography & Contemporary Society
 GEOG 105 Geography of United States
 GEOG 107 Hawai'i in the Pacific
 GEOG 312 Food and Societies
 GEOG/WS 430 Gender, Place and Environment
 HIST 151 World History: To 1500
 HIST 152 World History: From 1500
 HIST 274 History of Hawai'i
 HIST 316 Pacific History I: To 1900
 HIST 317 Pacific History II: From 1900
 HON 100 Opening Colloquium
 HWST 111 Hawaiian 'Ohana
 LING 432 Critical Applied Linguistics
 MGT 333 International Business Management
 NURS 350 Transcultural Care & Health Promotion
 NURS 457 Collaborative Health Care, Leadership
 POLS 101 American Politics: National
 POLS 101G American Politics: Nat'l Citizenship
 POLS 201 Intro to Political Theory
 POLS 220 Introduction to Legal Systems
 POLS 242 Introduction to World Politics
 POLS 251 Introduction to Comparative Politics
 POLS 304 Liberalism and Globalism
 POLS 331 Presidency & Congress
 POLS/WS 341 Women & War
 POLS 351 Politics of China
 POLS/JPST 353 Politics of Japan
 POLS 360 Public Administration
 POLS 391 Internship
 PSY 100 Survey of Psychology

PSY 312 Evaluation Research
 PSY 323 Community Psychology
 PSY 390 Industrial & Organizational Psychology
 PSY 445 Practicum in Psychology
 PSY 475 Asian American Psychology
 SOC 100 Principles of Sociology
 SOC 240 Social Psychology
 SOC 260 Social Problems
 SOC 280 Statistical Reasoning
 SOC 280L Lab in Statistical Reasoning
 SOC 480 Practicum in Social Research
 WS 151 Introduction to Women's Studies
 WS 341 Women & War
 WS 352 Gender and Sexuality
 WS 357 Women & Religion
 WS 430 Gender, Place & Environment

3. Natural Sciences Electives

(7 credits, including 1 credit of an associated laboratory)

Students select one semester course in one area and a second semester course with its associated lab in a different area. These courses use the terminology of computational, physical or biological sciences and include knowledge and theories of the computational, physical or biological sciences. Additional courses may be certified.

Certified lecture courses with certified labs

ASTR 110 and 110L General Astronomy and Lab
 BIOL 101 and 101L General Biology and Lab
 BIOL 275 and 275L Fundamentals of Microbiology and Lab
 CHEM 100/111 and 100L/111L Chemistry for Non-Science Majors and Lab
 CHEM 114 and 114L Introductory Chemistry and Lab
 CHEM 124 and 124L General Chemistry I and Lab
 CHEM 125 and 125L General Chemistry II and Lab
 GEOL 100 and 100L Environmental Earth Science and Lab
 GEOL 111 and 111L Understanding the Earth and Lab
 MARE 140 and 140L Introduction to Hawaiian Coral Reefs and Lab
 MARE/BIOL 171 and 171L Marine Biology Diversity and Lab
 MARE 201 and 201L Oceanography and Lab

Certified lecture courses without labs

AG 100 Introduction to Agricultural Sciences
 AG 230 Sustainable Agriculture
 AGBU 110 Microcomputing for Agriculture

ANSC 175 Animal Behavior
 AQUA 262 Introduction to Aquaculture
 ASTR 180 Principles of Astronomy I
 BIOL/MARE 156 Natural History & Conservation of the Hawaiian Islands
 CHEM 100/111 Chemistry for Non-Science Majors
 CHEM 141 Survey of Organic Chemistry and Biochemistry
 CS 100 Principles of Computer Science
 CS 101 Digital Tools for the Informational World
 CS 102/MATH 111 MS Office Tools for Math & Science
 CS 130 Beginning Graphics, Game Programming
 CS 135 Animation Programming
 CS 150 Introduction to Computer Science I
 CS 201 Web Technology II
 CS 282 Computer Competency for Business
 ENSC 100 Introduction to Environmental Science
 GEOG 101 Geography and the Natural Environment
 GEOL 170 Volcanoes and Earthquakes
 GEOL 205 Geology of Hawaiian Isle
 GEOL 300 Advanced Environmental Earth Science
 HORT 262 Principles of Horticulture
 KES 206 Basic Human Movement
 KES 207 Basic Human Nutrition
 MARE 110 Current Issues in Marine Science
 MARE 172 Marine Biology-Cellular
 MARE 282 Global Change
 MARE 310 The Atoll Ecosystem
 MATH 100 Survey of Math
 MATH 104 Precalculus Math
 MATH 104F Precalculus I: Functions
 MATH 104G Precalculus II: Trigonometry & Geometry
 MATH 115 Applied Calculus
 MATH 121 Introduction to Statistics & Probability
 MATH 205 Calculus I
 MATH 206 Calculus II
 MATH 231 Calculus III
 NRES 196 Introduction to Natural Resource Management
 PHYS 110 Physics of Contemporary Issues
 PHYS 115 Physics for Liberal Arts
 PHYS/GEOG 120 Weather & Climate of Hawai'i
 QBA 260 Business Statistics

Writing Intensive Requirement*(Three courses, between 3 to 9 credits total)*

Students select three different courses designated "WI," one of which must be numbered 300 or above. Students should be aware that the requirement is for three separate WI courses, regardless of the number of semester hours earned in each course. A WI course is a discipline-specific content course in which writing plays a major, integrated role.

WI courses are certified each semester and are labeled as such in the semester course schedule; a list of currently certified WI courses is posted at hilo.hawaii.edu/academics/wi/courses.php and is updated each semester.

The WI requirement for transfer students varies depending upon year of entry and transfer credits accepted by UH Hilo. Only after final transfer credit evaluation can it be determined how many WI courses a transfer student must take. The number of WI courses required for transfer students is displayed below.

Status	Freshman	Sophomore	Junior	Senior
No. accepted credit hours	0-24	25-54	55-88	89+
1995-96	2	2	1	0
1996-97 and later	3	3	2	1

For further information, visit hilo.hawaii.edu/academics/wi

Hawai'i Pan-Pacific Requirement (3 credits)

Students select one semester course designated "HPP." These courses investigate major aspects of the culture, language, economy, history, or natural environment of Hawai'i or of another indigenous culture or nation or region of the Pan-Pacific region (Oceania, Asia, the west coast of the Americas). Courses foster critical understanding of different cultural perspectives, values, and world views and the ability to acquire additional knowledge about these.

ANTH 385 Hawaiian & Pacific Prehistory
 ANTH 389 Cultural Resource Management
 AQUA 262 Introduction to Aquaculture
 ART 280 Aspects of Asian Art
 BIOL/MARE 156 Natural History & Conservation Hawaiian Islands
 CS 135 Animation Programming
 ECON 416 Asian-Pacific Economic Integration
 ENG 205 Hawai'i on Screen
 ENG 286A Intro to Fiction Writing
 ENG 323 The Literature of Hawai'i
 ENG 430 Pacific Islands Literature
 GEOG 107 Hawai'i in the Pacific
 GEOG/PHYS 120 Weather & Climate of Hawai'i
 GEOG 335 Geography of Oceania
 GEOL 205 Geology of Hawaiian Isle
 HIST 274 History of Hawai'i
 HIST 316 Pacific History I: To 1900
 HIST 317 Pacific History II: From 1900
 HWST 111 Hawaiian 'Ohana
 HWST/MUS 176 History & Development of Hawaiian Music
 HWST 211 Hawaiian Ethnobotany
 HWST 213 Hawaiian Ethnozoology
 HWST 496 Hawaiian Studies Seminar
 JPNS/MUS 175 Intro Music of Polynesia
 JPST/JPNS 382 Gender & Min Japanese Comics
 JPST/JPNS/DRAM 383 Japanese Theatre & Performance
 JPNS/JPST/ENG 365 Japanese Literature in English
 JPST/JPNS 385 Postwar Japan thru Film/Literature
 KHAW 103 First Level Trans Hawaiian Immersion
 KHAW 104 First Level Partial Hawaiian Immersion
 KHAW 108 Accel First Level Hawaiian Immersion
 KHAW 133 First Level Hawaiian for Speakers

KHAW 203 Second Level Univ. Hawaiian Immersion I
 KHAW 204 Second Level Univ. Hawaiian Immersion II
 KHAW 208 Accel Second Level Univ. Hawaiian Immersion
 KHAW 233 Second Level Hawaiian for Speakers
 LING 442 Languages in Hawai'i
 MARE 140 Introduction to Hawaiian Coral Reefs
 MARE 140L Introductory Hawaiian Coral Reefs Lab
 MARE 156 Natural History and Conservation of the Hawaiian Islands
 MARE 310 The Atoll Ecosystem
 MGT 333 International Business Management
 MUS 176 History & Development of Hawaiian Music
 NRES 196 Introduction to Natural Resource Management
 NURS 350 Transcultural Care & Health Promotion
 PHIL 101 Introduction to Eastern Philosophy
 PHIL 300 History of Indian Philosophy
 PHIL 301 History of Chinese Philosophy
 PHIL 302 History of Buddhist Philosophy
 PHIL/JPST 430 Philosophy of Zen
 PHIL 435 Philosophy of Tao
 PHIL 450/JPST 450 Mahayana Buddhist Philosophy
 PHPP 525 Complementary Medicine
 PHYS 120 Weather & Climate of Hawaii
 POLS 351 Politics of China
 POLS/JPST 353 Politics of Japan
 PSY 323 Community Psychology
 PSY 475 Asian American Psychology
 SOC 480 Practicum in Social Research

Global and Community Citizenship Requirement (3 credits)

Students select one semester course designated "GCC." This course allows students to apply knowledge gained from their course of study to the global and/or local communities. These courses will provide first-hand awareness of local and global community and environmental issues and encourage interaction with community, business and/or government sectors in order to effect positive change. Additional courses may be certified.

AG 230 Sustainable Agriculture
 ANTH 389 Cultural Resource Management
 AQUA 262 Introduction to Aquaculture
 BIOL 275 Fundamentals of Microbiology
 CHEM 111 Chemistry for Non-Science Majors
 COM 344 Sustainability, Communication, and Culture
 CS 460 Software Engineering
 DNCE 419 Dance in Education
 DRAM 419 Drama in Education
 ED 210 Introduction to Teaching
 ENG 275 Literature of the Earth
 ENG 323 The Literature of Hawai'i
 GEOG/PHYS 120 Weather & Climate of Hawai'i
 GEOG 312 Food and Societies
 GEOG/WS 430 Gender, Place and Environment
 GEOL 300 Advanced Environmental Earth Science
 GEOL 370 Field Methods
 HORT 262 Principles of Horticulture
 HWST 496 Hawaiian Studies Seminar
 LING 432 Critical Applied Linguistics
 LING 442 Languages in Hawai'i
 MARE 434 Teaching Marine Science
 MARE 435 Marine Field Exper. Teachers
 MARE 471 Senior Thesis Report
 MARE 480 Senior Internship
 MARE 488 Ku'ula: Integrated Science
 MGT 425 Business Planning for New Ventures
 NURS 457 Collaborative Health Care, Leadership

PHPP 501 Introduction to Pharmaceutical Practice Experiential I
 PHPP 503 Introduction to Pharmaceutical Practice Experiential III
 PHPP 505 Introduction to Pharmaceutical Practice Experiential V
 PHYS 110 Physics of Contemporary Issues
 PHYS 120 Weather & Climate of Hawai'i
 POLS 101G American Politics: Nat'l Citizenship
 POLS 304 Liberalism and Globalization
 POLS/GEOG 325 Legal Geography
 POLS 391 Internship
 PSY 323 Community Psychology
 PSY 422 Psychology of Sustainability
 PSY 445 Practicum in Psychology
 SOC 260 Social Problems
 SOC 391 Internship

Upper-Division Requirement

The College of Arts and Sciences, the College of Business and Economics, and Ka Haka 'Ula O Ke'elik'lanī College of Hawaiian Language usually require students to earn at least 45 semester hours in courses at the 300- and 400-level (also called "upper-division courses"). However, for some majors requiring more than 15 semester hours in 100- and 200-level courses, the upper-division course requirement has been reduced. The majors approved for this reduction are:

- Art
- Astronomy
- Biology
- Chemistry
- Environmental Science/Studies
- Geology
- Marine Science
- Natural Science
- Nursing, RN to BSN program
- Performing Arts
- Physics

The program descriptions in this catalog for some of these majors specify a set number of upper-division semester hours which must be completed to graduate. Other programs use a formula to compute the number of upper-division semester hours required of their majors. In these cases, the requirement for 45 semester hours in 300- and 400-level courses is reduced by the number of semester hours over and above 15 in 100- and 200-level courses required for the major.

College of Agriculture, Forestry, and Natural Resource Management

For information, please contact:

Office of the Dean

Business Office-121

Phone: (808) 932-7038; **Fax:** (808) 932-7037

Web: hilo.hawaii.edu/academics/cafnrm/
or

UH Hilo Admissions Office

Office of Student Affairs

Phone: (808) 932-7446; **Fax:** (808) 932-7459 (fax)

Email: uhhadm@hawaii.edu

Web: hilo.hawaii.edu/studentaffairs/admissions/

Professors:

Lorna H. Arita-Tsutsumi, Ph.D.

Kevin D. Hopkins, Ph.D.

Christopher Lu, Ph.D.

Bruce W. Mathews, Ph.D. (Interim Dean)

William S. Sakai, Ph.D.

Michael H. Shintaku, Ph.D.

Michael J. Tanabe, Ph.D.

Marcel Tsang, Ph.D.

Associate Professors:

Norman Q. Arancon, Ph.D.

Erik R. Cleveland, Ph.D.

Maria C. Haws, Ph.D.

Yiqing Li, Ph.D.

Assistant Professor:

Armando Garcia-Ortega, Ph.D

Mission

The purpose of the College of Agriculture, Forestry, and Natural Resource Management (CAFNRM) is to provide quality education to assist individuals in acquiring the scientific knowledge, attitudes, and practical skills needed to practice environmentally sound, sustainable agriculture and to be productive and responsible global citizens. The program blends comprehensive classroom instruction with practical, technology-based education through use of the University of Hawaii'i at Hilo Agricultural Farm Laboratory and on-campus laboratory facilities. CAFNRM graduates skilled agriculturalists who can further develop and promote agriculture in the State of Hawa'i, the United States, the Pacific Basin, and other countries. The College is especially interested in moving agriculture in the tropical and semitropical areas of the Pacific Basin toward more economical and self-sustaining methods.

Goals for Student Learning

A student upon graduating from the College should have acquired the following knowledge, skills, and attitudes:

Knowledge

- Scientific principles on which agriculture is based
- Understanding the application of state-of-the-art techniques, processes, and concepts of environmentally sound agriculture, particularly in tropical and sub-tropical climates, in fields selected from:
 - tropical crops (ornamental plants, orchids, fruits and nuts, and vegetables)
 - aquaculture
 - livestock management (sheep, goats, cattle, swine, and horses)

- forestry
- natural resource management

- Ability to develop and adopt innovative approaches to the production, post production, and marketing aspects of agriculture
- An understanding of the role of agriculture in the changing geophysical, economic, and sociocultural world environment
- An understanding of the central role food production plays in supporting sustainable communities

Skills

- Ability to use existing technology for professional purposes
- Proficiency with computer applications and Internet resources, including word processing, data management, presentation software, email communication, and Web information sources
- Effective written and oral communication skills as required for professional objectives
- Mathematical skills required for professional purposes
- Analytic, critical thinking, and problem solving adeptness
- Job finding skills
- Ability to grow one's own food in a sustainable, cost-efficient manner

Attitudes and Values

- Aloha'aina: the commitment to stewardship of natural and agricultural resources
- Aloha, Kokua, 'Ohana, and Laulima: the commitment to work with others to improve agriculture and to benefit the community.

Learning Outcomes for Bachelor of Science in Agriculture*

Learning Outcome 1: Acquire, integrate, and apply knowledge of science and technology to managed agricultural systems

Goal 1. Use multiple sources, including current and older literature, to find, evaluate, organize and manage information related to diverse agricultural systems.

Goal 2. Demonstrate competence with both laboratory and field-based techniques used in modern agricultural systems.

Goal 3. Understand how global issues including climate change, energy use, chemical use, water availability and food safety impact sustainability of agricultural systems.

Learning Outcome 2: Synthesize and demonstrate interdisciplinary knowledge and competence in managing and improving crop and (or) animal production systems

Goal 1. Apply concepts of biology, chemistry, nutrition, pest control, diseases, ecology and genetics to manage and improve plants and (or) animal systems and their products

Goal 2. Anticipate and recognize problems and make recommendations for addressing the problems using appropriate techniques and skills.

Goal 3. Develop, identify and employ best management practices that lead to sustainable solutions and outcomes.

Goal 4. Apply principles of business, marketing and management to an agricultural enterprise in developing the various components of a business plan.

Learning Outcome 3: Appreciate and communicate the diverse impacts of agriculture on people

Goal 1. Communicate effectively with various audiences using oral, written, and visual presentation skills, and contemporary networking/social media technologies.

Goal 2. Describe and assess the influence of plant and (or) animal production systems and its management on environmental sustainability and restoration.

Learning Outcome 4: Demonstrate professionalism and proficiency in skills that relate to agriculture

Goal 1. Demonstrate leadership and professionalism, and the ability to collaborate and work in teams

Goal 2. Plan, engage, and learn from actions that demonstrate civic responsibility to community and society.

*The terms “agriculture” and “agricultural” as used herein include aquaculture.

Note: More specific goals for the different specialties will be listed in the class syllabi.

Special Aspects of the College**College Facilities**

A unique feature of the College is the University of Hawai‘i at Hilo Agricultural Farm Laboratory. On 110 acres of land, students can experience practical learning in various enterprises such as: anthuriums, ornamental foliage, hydroponics, floriculture plants, orchids, forestry, vegetables, sustainable agriculture (including integrated nutrient and pest management principles), livestock production, beekeeping, tropical fruit, and aquaculture. Because direct application of newly gained knowledge is an integral part of the College’s educational goals, many laboratories and courses are based on the farm.

On campus, the CAFNRM building provides laboratories for many of the courses in horticulture, plant tissue culture, animal science, entomology, plant pathology, plant physiology, and agribusiness. Students can also utilize the laboratories and campus greenhouses for special projects in directed research courses. Additional laboratory facilities for agronomy, aquaculture, natural resources, and soil science are located beachfront at the Pacific Aquaculture and Coastal Resources Center. Hilo’s location in the center of a large farming community provides opportunities for field trips to many diversified agricultural and aquaculture enterprises.

The farm also houses the developing pastures, equine arena, and covered pavilion for courses, flower shows, and community related events.

Note: Shoes or boots are required in certain laboratory classes. In addition, suitable eye protection may be required in certain laboratory classes.

CAFNRM Agriculture Students Organization

This organization is open to every student who joins CAFNRM. Students are expected to help in maintaining a collegial atmosphere that is nurturing and enables the growth of the CAFNRM ‘ohana. Through Organization activities, students make life-long friendships, learn business and management skills, participate in group activities, foster collegiality and civility, and bring respect for the agricultural, forestry and natural science disciplines and the issues that surround them.

Curricula

The College offers the Bachelor of Science degree (B.S.) in these areas of specialization:

- Animal Science: Livestock Production
- Animal Science: Pre-Veterinary
- Aquaculture
- Tropical Horticulture
- Tropical Plant Science and Agroecology

Full descriptions of the specialties are provided below. Please be aware that in order to provide students a well-balanced education, a good portion of a typical curriculum consists of College of Arts and Sciences courses in addition to CAFNRM courses. Types of courses offered by CAFNRM are as follows:

- **Agriculture (AG):** Provides a broad preparation in the basic and applied sciences of modern agriculture.
- **Agribusiness (AGBU):** Provides a strong background in the business aspect of agriculture, including management, sales and distribution.
- **Agricultural Economics (AGEC):** Provides an understanding of economic theory and economic policy and efficient management with limited economic resources in the production of food and fiber.
- **Agricultural Engineering (AGEN):** Provides basic mechanical skills and engineering principles required for the student to be successful in modern agricultural enterprises.
- **Agronomy (AGRN):** Provides the theory and practice of field-crop (food, fiber and feed) production and soil management.
- **Animal Science (ANSC):** Provides a wide variety of courses that integrate genetics, health, housing, management, nutrition, physiology, reproduction and evaluation of livestock.
- **Aquaculture (AQUA):** Provides a broad understanding of the scientific basis, design and management of aquaculture systems and fisheries.
- **Entomology (ENTO):** Provides basic knowledge on insects and their habitats as well as how to control insect pests.
- **Forestry (FOR):** Provides the background for the development and management of forestry and agroforestry, ecology, conservation and product utilization
- **Horticulture (HORT):** Provides an extensive base of horticultural practices such as grafting and pruning, the cultivation of fresh produce (fruits and vegetables), herbal, and ornamental crops that are of economic interest in the tropics and subtropics, as well as advanced techniques such as hydroponics, plant tissue culture, and hormonal manipulation of plants.
- **Natural Resources (NRES):** Provides a multi-disciplinary systems approach to understanding and managing the environmental resources of island ecosystems, and their relevance to coastal zones in general.
- **Plant Pathology (PPTH):** Provides the understanding and management of plant disease, the mechanisms by which pathogens produce disease, and the interactions between pathogens and host.
- **Plant Physiology (PPHY):** Provides the understanding of plant growth and development.
- **Soil Science (SOIL):** Provides the background for the properties of soil and oil management, with an emphasis on the role soils play in environmental studies as well as agriculture.

In order to earn a Bachelor of Science degree in Agriculture, students must not only fulfill the requirements for the major but also meet all of the University’s other baccalaureate degree requirements. (Please see the Baccalaureate Degree Requirements.) Students wishing to make timely progress toward graduation are urged to pay careful attention to all degree requirements. In addition, when planning a schedule of courses, it is imperative to be aware of course prerequisites and the frequency with which courses are offered. See CAFNRM Courses below for course information.

To assist students in planning their schedules, the College posts curriculum sheets on its website. In addition to using these guides, students are strongly encouraged to meet with their advisor each semester before registering.

BS in Agriculture: Animal Science—Livestock Production Speciality

Contact:

Erik Cleveland, (808) 932-7034, erikc@hawaii.edu and
Chris Lu, (808) 932-7160, chrislu@hawaii.edu

College of Agriculture, Forestry, and Natural Resource Management

Office: (808) 932-7038

Web: hilo.hawaii.edu/academics/cafnrm/

This track of study provides students with a variety of animal science courses as well as important courses in agriculture so that they will be better qualified for the job market. The purpose of this program is to prepare students to work with livestock on farms and ranches or to obtain positions in the livestock industry or related fields.

Former students have taken positions at livestock farms, dairies, ranches, equestrian centers, experiment stations, quarantine stations, veterinary clinics, and zoos. Employment opportunities also exist with government agencies and with livestock and feed companies.

Student Learning Outcomes

1. Students will achieve a working knowledge of biology, chemistry, and mathematics as a foundation for further studies.
2. Students will achieve a basic understanding in the different animal science disciplines and be able to apply this knowledge to effectively manage and care for livestock.
3. Students will have experiential learning opportunities with farm animals through routine hands-on laboratories held at the UH Hilo Agricultural Farm Laboratory. When available, field trips to local farms and ranches will also provide learning opportunities with farm animals. Students will gain hands-on experience with livestock to help enhance their competitiveness in future studies and careers.
4. Students will use and refine their communication skills in various classes.
5. Students will develop and apply their computer skills to agricultural examples.

Curricula

Group 1: General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

1. Agriscience Requirements, 52 hours

- AG 230 Sustainable Agriculture (3)
- AG 496 Senior Seminar (1)
- AGBU 110 Introduction to Microcomputing for Agriculture (3)
- AGBU 320 Agribusiness Management *or*
AGEC 330 Farm Management (3)
- AGEN 231 Introduction to Agricultural Mechanization (3)
- AGRN 310 Agronomic Crop Production in the Tropics *or*
AGRN 410 Soil-Plant-Herbivore Interrelations (3)
- ANSC 141 Introduction to Animal Science (3)
- ANSC 244 Fundamentals of Animal Nutrition (3)
- ANSC 321 Feeds and Feeding (3)
- ANSC 350 Anatomy and Physiology of Farm Animals (3)

ANSC 445 Animal Breeding and Genetics (3)

ANSC 450 Reproduction of Farm Animals (3)

Choose **three** courses from the following ANSC courses:

- ANSC 342 Beef Cattle Production (3)
- ANSC 351 Swine Production (3)
- ANSC 353 Horse Production (3)
- ANSC 355 Goat and Sheep Production (3)

ENT 304 General Entomology (3)

HORT 262 Principles of Horticulture (3)

SOIL 304 Tropical Soils (3)

2. SUPPLEMENTAL REQUIREMENTS, 21 - 23 hours

BIOL 175-175L Introductory Biology I and Lab (4)

BIOL 176-176L Introductory Biology II and Lab (4)

CHEMISTRY (Choose **one** sequence from the following three sequences):

- **Sequence 1:** CHEM 114-114L Introductory Chemistry and Lab (4), CHEM 141 Survey of Organic Chemistry and Biochemistry (3)
- **Sequence 2:** CHEM 124-124L General Chemistry I and Lab (4), CHEM 125-125L General Chemistry II and Lab (4)
- **Sequence 3:** CHEM 124-124L General Chemistry I and Lab (4), CHEM 141 Survey of Organic Chemistry and Biochemistry (3)

ENG 225 Writing for Science and Technology (3)

MATH (Choose **one** course from the following courses):

- MATH 104 Precalculus Mathematics (4)
- MATH 104F Precalculus I: Functions (3)
- MATH 104G Precalculus II: Trigonometry & Geometry (3)
- MATH 205 Calculus I (4)
- MATH 206 Calculus II (4)

Total in Group 2: 73 -75 semester hours

Group 3. Electives, To be determined

Elective hours will vary depending upon which GE courses are selected by the student.

See your advisor for possible electives.

Minimum semester hours required for the B.S. in Agriculture: Animal Science—Livestock Production: 123 hours

BS in Agriculture: Animal Science—Pre-Veterinary Speciality

Contact:

Erik Cleveland, (808) 932-7034, erikc@hawaii.edu and
Chris Lu, (808) 932-7160, chrislu@hawaii.edu

College of Agriculture, Forestry, and Natural Resource Management

Office: (808) 932-7038

Web: hilo.hawaii.edu/academics/cafnrm/

To be accepted into a professional school (veterinary medicine) or a graduate program (M.S. or Ph.D.) requires excellent grades and the proper academic background. To help provide the proper academic background for students interested in veterinary medicine and/or graduate studies in animal science, the Pre-Veterinary Track was developed. With this track of study, students can also qualify for professional schools of medicine and pharmacy with a few additional courses taken as electives.

The Pre-Veterinary Track has been successful with former students being accepted into Colleges of Veterinary Medicine in Alabama, California, Colorado, Iowa, Kansas, Minnesota, Mississippi, Oklahoma, Oregon, Washington, England, and New Zealand.

Student Learning Outcomes

1. Students will achieve a working knowledge of biology, chemistry, and mathematics as a foundation for further studies.

- Students will achieve a basic understanding in the different animal science disciplines and be able to apply this knowledge to effectively manage and care for livestock.
- Students will have experiential learning opportunities with farm animals through routine hands-on laboratories held at the UH Hilo Agricultural Farm Laboratory. When available, field trips to local farms and ranches will also provide learning opportunities with farm animals. Students will gain hands-on experience with livestock to help enhance their competitiveness in future studies and careers.
- Students will use and refine their communication skills in various classes.
- Students will develop and apply their computer skills to agricultural examples.

Curricula

Group 1: General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements

1. Agriscience Requirements, 37 hours

- AG 230 Sustainable Agriculture (3)
- AG 375 Introduction to Genetic Analysis **or** BIOL 466 Genetics (3)
- AG 496 Senior Seminar (1)
- AGBU 110 Introduction to Microcomputing for Agriculture (3)
- ANSC 141 Introduction to Animal Science (3)
- ANSC 244 Fundamentals of Animal Nutrition (3)
- ANSC 321 Feeds and Feeding (3)
- ANSC 350 Anatomy and Physiology of Farm Animals (3)
- ANSC 445 Animal Breeding and Genetics (3)
- ANSC 450 Reproduction of Farm Animals (3)

Choose **three** courses from the following ANSC courses:

- ANSC 342 Beef Cattle Production (3)
- ANSC 351 Swine Production (3)
- ANSC 353 Horse Production (3)
- ANSC 355 Goat and Sheep Production (3)

2. Supplemental Requirements, 48 - 49 hours

- BIOL 175-175L Introductory Biology I and Lab (4)
- BIOL 176-176L Introductory Biology II and Lab (4)
- BIOL 275-275L Fundamentals of Microbiology and Lab (4)
- BIOL 280 Biostatistics (3)
- BIOL 410 Biochemistry (3)
- CHEM 124-124L General Chemistry I and Lab (4)
- CHEM 125-125L General Chemistry II and Lab (4)
- CHEM 241-241L Organic Chemistry I and Lab (4)
- CHEM 242-242L Organic Chemistry II and Lab (4)
- ENG 225 Writing for Science and Technology (3)
- MATH (Choose **one** course from the following courses):
 - MATH 104 Precalculus Mathematics (4)
 - MATH 104F Precalculus I: Functions (3)
 - MATH 104G Precalculus II: Trigonometry & Geometry (3)
 - MATH 205 Calculus I (4)
 - MATH 206 Calculus II (4)

- PHYS 106-170L College Physics I and Lab (4)
- PHYS 107-171L College Physics II and Lab (4)

Total in Group 2: 85 – 86 semester hours

Group 3. ELECTIVES, To be determined

Elective hours will vary depending upon which GE courses are selected by the student.

See your advisor for possible electives to help you qualify for pharmacy and medical programs.

Minimum semester hours required for the B.S. in Agriculture: Animal Science—Pre-Veterinary Specialty: 123 hours.

BS in Agriculture: Aquaculture Specialty

Contact: Maria Haws, haws@hawaii.edu, (808) 933-3288

College of Agriculture, Forestry, and Natural Resource Management

Office: (808) 932-7038

Web: hilo.hawaii.edu/academics/cafnrm/

The Aquaculture program is designed to provide students with a broad understanding of the scientific basis, design, and management of aquaculture systems. The program provides hands-on training in a wide-range of aquaculture activities and stresses the international nature of this field of study. Approximately 40% of the required courses are in aquaculture and agriculture with the other 60% in natural sciences and humanities.

The program produces educated aquaculturists needed by the growing aquaculture industry in Hawai'i and throughout the world. Aquaculture graduates from UH Hilo have the training to obtain employment immediately after graduation with private firms and various government agencies as aquaculture biologists/technicians. Because of the broad emphasis of the program on both biology and agriculture technology, they have many of the skills required to start their own aquaculture enterprises. If students desire a career in research or teaching, the aquaculture program can also enable the student to be qualified for admittance to graduate programs in aquaculture and fisheries.

The area in close proximity to the UH Hilo campus has unique potential for aquaculture education. The availability of warm freshwater, warm seawater, and cold seawater (from deep wells) allows the culture of most aquaculture species including trout, salmon, carp, shrimp, tropical fish, various seaweeds, and shellfish. A freshwater aquaculture facility at the UH Hilo Agricultural Farm Laboratory is complemented by a 12-acre coastal site at Keaukaha, adjacent to the port of Hilo. Facilities include a water quality laboratory, a shellfish hatchery, a marine fish hatchery, demonstration fish culture units, and a marine mammal rehabilitation facility. Freshwater and marine aquaponics demonstration units are also present at each facility. Opportunities for student employment, internships and senior thesis/research projects are available on a variety of projects conducted by the Pacific Aquaculture and Coastal Resources Center (PACRC), a part of CAFNRM.

Student Learning Outcomes

- Students will have a thorough understanding of, and be able to describe the worldwide extent and importance of aquaculture in the production of food, chemicals, recreation and environmental mitigation.
- Students will become familiar with, and be able to compare and contrast the major types and components of aquaculture systems, species and factors affecting system sustainability.
- Students will be able to identify global cultural, social, economic and historical factors that affect aquaculture development with an emphasis on the Hawai'i and Pan-Pacific region and be able to describe specifically how these factors affect aquaculture.
- Students will be able to explain the relationship between aquaculture, society and the natural environments for the major aquaculture areas around the world, including potential impacts (positive and negative), and how environmental and social challenges can be

solved. Emphasis will be placed on Hawai'i and the Pan-Pacific region, although regions such as Latin America and SE Asia will also be covered.

- Students will have experiential learning opportunities (e.g. hands-on experiences at laboratories, farms, demonstration centers) to acquire skills and abilities including hatchery, growout, harvesting and marketing of aquaculture species to enhance their competitiveness in their future careers.

Curricula

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

1. Agriscience Requirements

- AG 200 Agro-Environmental Science and Communication (3)
- AG 291 Directed Work Experience (3)
- AG 496 Senior Seminar (1)
- AGBU 320 Agribusiness Management (3) **or**
AGEC 330 Farm Management (3)
- AGEN 400 Aquaculture Engineering (4)
- ANSC 141 Introduction to Animal Science (3)
- ANSC 244 Fundamentals of Animal Nutrition (3)
- AQUA 262 Introduction to Aquaculture (3)
- AQUA 352–352L Aquaculture of Fishes with lab (4)
- AQUA 353–353L Invertebrate and Algae Culture with Lab (4)
- AQUA 425–425L Water Quality and Aquatic Productivity Lab (4) **or**
NRES 425 Marine Biogeochemistry (3)
- AQUA 466 Fisheries Science (3)
- HORT 262 Principles of Horticulture (3)
- HORT 263 Hydroponics (3)

Choose **one** course from the following three courses: (3)

- AG 375 Introduction to Genetic Analysis
- ANSC 445 Animal Breeding and Genetics
- BIOL 466 Genetics

2. Supplemental Requirements

Chemistry (Choose **one** of the following three sequences):

- **Sequence 1:** CHEM 124–124L General Chemistry I with Lab (4), CHEM 125–125L General Chemistry II with Lab (4)
- **Sequence 2:** CHEM 124–124L General Chemistry I with Lab (4), CHEM 141 Survey of Organic Chemistry and Biochemistry (3)
- **Sequence 3:** CHEM 114–114L Introductory Chemistry with Lab (4), CHEM 141 Survey of Organic Chemistry and Biochemistry (3)

MARE 171–171L Marine Biology-Diversity with Lab (4)

MARE 172 Marine Biology-Cellular Processes (3)

MARE 201–201L Oceanography with Lab (5)

PHYS 106–170L College Physics with Lab (4)

Choose **two** course pairs from the following three course pairs (8)

- MARE 371–371L Biology of Marine Invertebrates with Lab (4)
- MARE 372–372L Biology of Marine Plants with Lab (4)
- MARE 484–484L Biology of Fishes with Lab (4)

Choose **one** course from the following two courses: (3)

- BIOL 281 General Ecology
- MARE 265 Marine Ecology and Evolution

Choose **one** course from the following three courses: (3)

- BIOL 280 Biostatistics
- MARE 250 Statistical Applications in Marine Science
- MATH 121 Introduction to Statistics and Probability

Total in Group 2: 83-85 Semester Credits

Group 3. Electives, To be determined

Elective hours will vary depending upon which GE courses are selected by the student.

Minimum semester hours required for the B.S. in Agriculture: Aquaculture Specialty: 123 hours.

Notes

- Students who choose MATH 121 under Required Courses from Related Fields can count this course as the Quantitative Reasoning requirement in Group 1, General Education Requirements.
- AG 496 may be taken before senior year.
- ANSC 141 must be completed before taking other Animal Science courses.
- Students who decide later to pursue a graduate degree would find the following courses useful: BIOL 410; CHEM 241–242; PHYS 107; and MATH 205–206.
- Students must earn at least a 2.0 GPA in courses required for the major.
- To earn a Bachelor of Science degree in Agriculture, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the chapter on Baccalaureate Degree Requirements in the Catalog.)
- Students should always check course prerequisites and the frequency with which courses are offered. This information is found in Course Listings in the back of the Catalog.
- To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

BS in Agriculture: Tropical Horticulture Specialty

Contact:

Norman Arancon, normanq@hawaii.edu, (808) 932-7030
William Sakai, sakaiw@hawaii.edu, (808) 932-7032
Michael Tanabe, mtanabe@hawaii.edu, (808) 932-7158

College of Agriculture, Forestry, and Natural Resource Management

Office: (808) 932-7038

Web: hilo.hawaii.edu/academics/cafnrm/

The Tropical Horticulture curriculum is designed to provide students with a well-rounded background in horticultural science with special emphasis on the production of tropical and subtropical crops. The program offers a wide selection of courses, each providing the student with both the theoretical and the hands-on approach to learning the subject matter. Required and elective horticulture courses cover a wide range of topics such as nursery management, floriculture, orchid culture, tropical landscaping, vegetable crop production, tropical fruit production, and many more. Elective courses utilize state-of-the-art technology in areas such as aseptic micro-propagation (plant tissue culture) and hydroponics. In addition to these specialized courses, the Tropical Horticulture curriculum is based on a solid core of traditional horticultural courses where students learn basic horticultural techniques such as grafting, pruning, pest management, and cultivating crops that are of economic interest in the tropics.

Students are provided with the necessary skills and knowledge required for employment and postgraduate education. Hands-on participation is an integral part of each course and strengthens the students' ability to apply theory. Courses such as plant tissue culture, weed science, and others will generally be accepted as graduate level courses. Additionally, students will broaden their experience through required and elective courses from other agriculture areas of specializations. Graduates from this program typically find employment as entrepreneurs, research associates, teachers, extension agents, grounds superintendents, agriculture products sales representatives, plant quarantine inspectors, and agriculture technicians. Graduates are highly skilled in managing, producing, and marketing horticultural crops.

Student Learning Outcomes

1. Thorough familiarity with the principles of horticulture and sustainable production of fruit, vegetable, and ornamental crops in the tropics.
2. Identify and analyze the factors that affect crop production including the emerging body of knowledge in plant growth and development and the contribution of climatic, environmental, and edaphic factors.
3. Advanced skills in the actual growing and marketing of crops that illustrate economic viability and sustainability of agricultural practices.
4. Interact effectively with all stakeholders of agricultural development in the community and participate in outreach programs that demonstrate cultural sensitivity and integration of new agricultural technologies with indigenous knowledge.

Curricula

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements

1. Agriscience Requirements (70 semester hours)

AG 200 Agro-Environmental Science Communication (3)
AG 291 Directed Work Experience (3)
AG 375 Introduction to Genetic Analysis (3)
AG 496 Senior Seminar (1)
AGBU 110 Introduction to Micro-computing for Agriculture (3)
AGEC 201 Agricultural Economics (3) **or**
ECON 130 (3) Introduction to Microeconomics
AGEC 330 Farm Management (3) **or**
AGBU 320 Agribusiness Management (3)
AGEN 231 Introduction to Agricultural Mechanization (3)
ANSC 141 Introduction to Animal Science (3)
ENTO 304 General Entomology (3)
HORT 262 Principles of Horticulture (3)
HORT 264 Plant Propagation (3)
HORT 481 Weed Science (3)
PPTH 301 Tropical Plant Pathology (3)
PPHY 310 Plant Growth and Development (3)
SOIL 304 Tropical Soils (3)

Choose **six courses totaling 18–21 semester hours** from the following Tropical Horticulture production courses:

- HORT 263 (3) Hydroponics
- HORT 266 (4) Nursery Management
- HORT 303 (3) Introduction to Plant Tissue Culture
- HORT 304 (3) Plant Tissue Culture Acclimatization
- HORT 350 (3) Tropical Landscape Horticulture
- HORT 351(3) Vegetable Crop Production
- HORT 352 (3) Tropical Fruit Production
- HORT 354 (4) Floriculture and Ornamental Production
- HORT 360 (4) Orchid Culture
- HORT 450 (3) Advanced Plant Tissue Culture

Choose **other Agricultural courses totaling 3–6 hours** depending on total credit hours taken in Tropical Horticulture production courses.

2. Supplemental Requirements (17 – 19 hours)

BIOL 175–175L Introductory Biology I with Lab (4)

CHEMISTRY (Choose **one** of the following three sequences):

- **Sequence 1:** CHEM 124–124L General Chemistry I with Lab (4), CHEM 125–125L General Chemistry II with Lab (4)
- **Sequence 2:** CHEM 124–124L General Chemistry I with Lab (4), CHEM 141 Survey of Organic Chemistry and Biochemistry (3)
- **Sequence 3:** CHEM 114–114L Introductory Chemistry with Lab (4), CHEM 141 Survey of Organic Chemistry and Biochemistry (3)

ENG 225 Writing for Science and Technology (3)

MATH 104 Pre-calculus Math **or higher, (not 107, 108, or 111)** (3/4)

Total in Group 2: 87-89 Semester Hours

Group 3. Electives To be determined

Elective hours will vary depending upon which GE courses are selected by the student

Minimum semester hours required for the B.S. in Agriculture: Tropical Horticulture Specialty: 123 hours

BS in Agriculture: Tropical Plant Science and Agroecology Specialty

Contact: Marcel Tsang, marcel@hawaii.edu, (808) 932-7031
College of Agriculture, Forestry, and Natural Resource Management
Office: (808) 932-7038
Web: hilo.hawaii.edu/academics/cafnrm/

The undergraduate Tropical Plant Science & Agroecology (TPSA) specialization is designed to provide an opportunity for students interested in tropical crop science or a plant-related field to have access to selected courses or topics in their area of interest. The curriculum is structured to offer a well-rounded undergraduate education emphasizing the long-term sustainability of our managed crop production systems and the surrounding ecosystems. The TPSA student learns to manage a wide variety of plant production challenges. Since production constraints in the tropics come from many sources, this curriculum draws its core courses from the areas of Plant Physiology, Plant Pathology, Horticulture, Soil Science, Weed Science, Entomology, Agribusiness, and Agricultural Economics. Graduates in TPSA can obtain employment with private enterprises or government agencies concerned with conservation and environmental protection, crop production, plant pest control, plant ecology, laboratories specializing in plant and soil analyses, and farm services/agribusiness. Other graduates may elect to start their own enterprises or proceed to graduate school for advanced degrees.

Student Learning Outcomes

1. Explain the principles, concepts, applications, and inter-relations of biology, chemistry, soil science, and mathematics as they apply to natural and agrarian "crop-based" plant ecosystems,
2. Use the principles of scientific inquiry to describe, analyze, solve, and report on scientific problems involving tropical plant science and related fields,
3. Exhibit proficiency in the use of technology, critical thinking, and quantitative tools used in plant-science applications,
4. Interact and communicate effectively with peers, mentors, and the larger community through internships, work-related activities, presentations and reports,
5. Exhibit proficiency and practical skills in various areas of crop production, and demonstrate awareness of the impact of agriculture on our environment and natural resources, and
6. Successfully pursue diverse careers or enter graduate programs in plant science, applied ecology and other related fields.

Curricula

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements

1. Agriscience Requirements (70 semester hours)

- AG 200 Agro-Environmental Science Communication (3)
- AG 230 Sustainable Agriculture (3)
- AG 291 Directed Work Experience (3)
- AG 375 Introduction to Genetic Analysis (3)
- AG 496 Senior Seminar (1)

- AGBU 110 Microcomputing for Ag (3)
 - AGBU 320 Agribusiness Management (3) **or**
AGEC 330 Farm Management (3)
 - AGEC 201 Agricultural Economics (3) **or**
ECON 130 Introduction to Microeconomics (3)
 - AGEN 231 Introduction to Agricultural Mechanization (3)
 - ANSC 141 Introduction to Animal Science (3)
 - ENTO 304 General Entomology (*Prerequisite: BIOL 175 or 176*) (3)
 - HORT 262 Principles of Horticulture (3)
 - HORT 264 Plant Propagation (*Recommended: HORT 262*) (3)
 - HORT 481 Weed Science (*Prerequisite: HORT 262 or BIOL 175 and 1 year of college chemistry*) (3)
 - PPHY 310 Plant Growth and Development (*Prerequisite: HORT 262 or BIOL 175 and 1 year of college chemistry*) (3)
 - PPTH 301 Tropical Plant Pathology (*Prerequisite: BIOL 175*) (3)
 - SOIL 304 Tropical Soils (*Prerequisite: CHEM 114 or 124*) (3)
- Select 7 Other Agriculture Courses:** At least 12 credits must be 300/400 level (UD). Total of 21 hours

2. Supplemental Requirements (14 - 16 hours)

- BIOL 175-175L Introductory Biology I and Lab (4)
- Chemistry (*Choose one of the following three sequences*) (7/8):
 - **Sequence 1:** CHEM 114–114L Introductory Chemistry and Lab (4), CHEM 141 Survey of Organic Chemistry and Biochemistry (3)
 - **Sequence 2:** CHEM 124–124L General Chemistry I with Lab(4), CHEM 125–125L General Chemistry II with Lab (4)
 - **Sequence 3:** CHEM 124–124L General Chemistry I with Lab (4), CHEM 141 Survey of Organic Chemistry and Biochemistry (3)
- MATH 104 Pre-calculus Math **or higher** (*not 107, 108, or 111*) (3/4)

Total in Group 2: 84 – 86 hours

Group 3. Electives, To be determined

Elective hours will vary depending upon which GE courses are selected by the student.

Minimum semester hours required for the B.S. in Agriculture: Tropical Plant Science and Agroecology Specialty: 123 hours

Agriculture Minor

15–16 semester hours

The valuable learning experiences gained through agriculture studies are not limited to Agriculture majors. Non-agriculture majors at UH Hilo can obtain a minor in Agriculture by completing a minimum of 15 hours of coursework (GPA 2.5 or better) in the College of Agriculture, Forestry and Natural Resource Management:

Three of the following (9 semester hours):

- HORT 262 Principles of Horticulture (3)
- ANSC 141 Introduction to Animal Science (3)
- AQUA 262 Introduction to Aquaculture (3)
- AGEN 231 Introduction to Agricultural Mechanization (3)
- SOIL 304 Tropical Soils (3)

One of the following (3–4 semester hours):

- ANSC 342 Beef Cattle Production (3)
- ANSC 351 Swine Production (3)
- ANSC 353 Horse Production (3)
- ANSC 355 Goat and Sheep Production (3)
- HORT 266 Nursery Management (4)
- HORT 350 Tropical Landscape Horticulture (3)
- HORT 351 Vegetable Crop Production (3)
- HORT 352 Tropical Fruit Production (3)
- HORT 354 Floriculture and Ornamental Production (4)
- AGRN 310 Agronomic Crop Production in the Tropics (3)
- AGBU 320 Agribusiness Management (3)

Agriculture elective (3 semester hours)

Any 200, 300, or 400-level course

Beekeeping Certificate

Contact: Lorna Tsutsumi (tsutsumi@hawaii.edu)

Phone: (808) 932-7151

18 semester hours

UH Hilo has been recognized by the media, public, and state Senate for its efforts to bring greater awareness to the honey bee, an important and vital pollinator of many crops. The certificate helps to recognize the level of achievement in beekeeping gained by UH Hilo students and will assist them in future career positions. Courses have hands-on laboratories and are taught primarily at the UH Hilo farm in Panaewa, Hawai'i.

Curricula

- HORT 262 Principles of Horticulture (3)
- AG 205 Value Added Ag Products (3)
- AG 230 Sustainable Agriculture (3)
- ENTO 262 Introduction to Beekeeping (3)
- ENTO 350 Advanced Beekeeping (to be repeated once) (6)

Forest Resource Management and Conservation Certificate

Contact: Yiqing Li (yiqing@hawaii.edu)

Phone: (808) 932-7156

The Certificate of Forest Resource Management and Conservation is a multi-disciplinary program that emphasizes a theoretical and applied approach to forest resource management, forest ecosystem restoration, and natural resource conservation. This certificate program prepares students for employment with organizations such as The Nature Conservancy (TNC), Natural Resource Conservation Service (NRCS), DLNR's Division of Forestry and Wildlife, and private consulting firms, and public organizations including the National Park Service and USDA Forest Service, and other similar organization involved in ecosystem management and ecological restoration. The certificate also is useful for advanced studies in the field.

Student Learning Outcomes

1. Demonstrate knowledge and understanding in the profession of Forestry, especially current applications of forestry principles and practices.
2. Describe and draw connections among natural, agricultural, and land-use processes influencing the tropical forest ecosystems.
3. Able to analyze watershed data utilizing GIS mapping techniques and able to develop and implement a forest conservation plan.
4. Familiar with typical best management practices (BMP's).
5. Assess, comprehend, and synthesize a broad range of scientific and social-economic information to professionally present policy recommendations and research directives for forest conservation issues.

Curriculum

Prerequisites (3)

MATH 121 Introduction to Statistics & Probability (3) *or*
BIOL 280 Biostatistics (3)

Required Courses (18)

FOR 202 Tropical Forestry and Natural Resources (3)
NRES 430 GIS in Natural Resource Management *or* GEOG 480
Geographic Information Systems and Visualization (3)
NRES 410 Invasive Species and Ecosystems (3) *or*
BIOL 381 Conservation Biology (3)
FOR 440 Forest Ecosystem Restoration and Management (3)
NRES 420 Hydrology and Watershed Management (3)
SOIL 304 Tropical Soils (3)

Total: 18 semester hours plus a 3-hour prerequisite

Plant Tissue Culture Certificate

Contact: Michael Tanabe (mtanabe@hawaii.edu)

Phone: (808) 933-0851

The Plant Tissue culture Certificate program is designed to prepare baccalaureate degree seeking students and non-degree seeking students for employment in the plant tissue culture industry. It focuses on course work that relates directly to this industry and facilitates immediate employment as laboratory proprietors, laboratory supervisors, and laboratory technicians. The curriculum includes a range of plant science and tissue culture courses that provide a strong theoretical base. Additionally, the student must complete six credit hours of Advanced Plant Tissue Culture, primarily a hands-on, laboratory-oriented course. Students in the Plant Tissue Culture Certificate Program must complete the prescribed courses (18 credits) with a cumulative grade average of 2.0 or better.

Student Learning Outcomes

1. Will provide the student with theoretical information and practicum experience in plant tissue culture.
2. Special emphasis will be placed on setting-up and operating a plant tissue culture laboratory.
3. Focuses on course work that prepares the student for immediate employment in the plant tissue culture industry.
4. Psychomotor skills will be emphasized as it relates to in vitro plantlet manipulation.
5. Diagnostic skills will be introduced as tools for determining the source(s) of in vitro plantlet problems. Discussions pertaining to solving these problems will be an active part of this program.
6. Scientific verbal and writing skills appropriate for the field of plant tissue culture will be introduced and honed.
7. Concentration calculations appropriate for this field will be introduced as an integral part of this program.

Curriculum

HORT 262 Principles of Horticulture (3)
 HORT 264 Plant Propagation (3)
 HORT 303 Introduction to Plant Tissue Culture (3)
 HORT 304 Plant Tissue Culture Acclimatization (3)
 HORT 450 Advanced Plant Tissue Culture (2 semesters) (6)

Total: 18 semester hours

Special Programs

In addition to its academic core of course offerings, the College of Agriculture, Forestry and Natural Resource Management has programs offering special opportunities to students:

Student-Managed Farm Enterprise Projects: A unique feature of the College is the student-managed farm enterprise project program. Students select, plan, and complete a management/production project under faculty supervision. If the student's project is successful, some income can be gained along with the valuable first-hand experience in production and agribusiness.

Agriculture Development Program: CAFNRM's Agriculture Development Program allows individuals the opportunity to achieve a Bachelor of Science degree in Agriculture, even though they lack the proper preparation for standard admission (i.e., low placement scores on SAT, low GPA standing, lack of college prep courses, etc.). Students accepted into this program are University of Hawaii'i at Hilo CAFNRM students and are obligated to complete all academic requirements. These students are given a chance to take advantage of a comprehensive set of support courses and assistance to enhance their successes.

Information on how to apply to this program is available from the College office at (808) 932-7038 or Admissions at (808) 932-7446.

Tropical Farming Certificate

Contact: Bruce Mathews (bmathews@hawaii.edu)

Phone: (808) 932-7038

The Tropical Farming Certificate provides a pathway to a career in agriculture and a potential link to further educational opportunities. In addition to the standard offering of classes at the UH Hilo main campus, courses will be periodically taught at off-campus agricultural facilities of the University of Hawaii'i System and other cooperators when funding is available from educational and rural development grants and other sources.

Student Learning Outcomes

1. Demonstrate competence with both laboratory and field-based techniques used in modern tropical agricultural production systems.
2. Understand how global issues including climate change, energy use, chemical use, water availability and food safety impact sustainability of agricultural systems.
3. Apply principles of business, marketing and management to an agricultural enterprise in developing the various components of a business plan.
4. Describe and assess the influence of plant and (or) animal production systems and their management on environmental sustainability and restoration.
5. Demonstrate an appreciation and an ability to communicate the diverse impacts of agriculture on humankind.

Curriculum

AG 205 Value Added Ag Products (3) **or**
 FDSC 201 Man's Food (3)
 AG 215 Agro-Environmental Chemistry (3)
 AG 230 Sustainable Agriculture (3)
 AG 290 Stud Mgt Farm Enterp Prj (3) **or**
 AG 291 Directed Work Experience Pgm (3)
 AGECE 330 Farm Management (3)
 AGEN 301 Farm Power (3)
 HORT 262 Princ Of Hort (3)

Total: 21 semester hours

College of Arts and Sciences

For information, please contact:

Office of the Dean (casdean@hawaii.edu)
University Classroom Building (UCB) (3301), Rm. 304

Phone: (808) 932-7095; **Fax:** (808) 932-7096

Web: hilo.hawaii.edu/academics/cas/

Purpose

The purpose of the College of Arts and Sciences is to provide quality education in the liberal arts and sciences, as well as a select group of high quality professional and pre-professional programs. Therefore, the academic emphasis in the College of Arts and Sciences is on the traditional arts and sciences subjects, particularly those with special relevance to Hawaii.

Educational Philosophy

The College of Arts and Sciences offers students a diversified and quality liberal arts curriculum which combines a traditional nature with the flexibility to meet the needs of every student. The purpose of this traditional, yet flexible, liberal arts curriculum is to provide students with an opportunity to achieve a common basis for intellectual discourse so that they will be prepared to meet the demands of both profession and citizenship.

Student Learning Outcomes

Students in the College of Arts and Sciences receive an education which enables them to:

1. Communicate in both the written and spoken media with precision and cogency;
2. Think critically and engage in reasoned discussions about complex issues;
3. Understand major historic and philosophical concepts, and scholarly, literary and artistic accomplishments of the past and present;
4. Comprehend the physical universe, our own and other societies, the mathematical and experimental methods of the natural sciences, and the qualitative and quantitative methods of the social sciences; and
5. Achieve a depth of understanding and competence in a specific field of knowledge.

Instructional Methods

The College employs a wide variety of instructional methods in order to implement the educational philosophy stated above. Experimentation with new pedagogical techniques that show promise of being effective is encouraged. At the College students will encounter instruction in such forms as:

Lectures in both lower and upper division courses. Every effort is made to limit the size of classes to allow for student-teacher discourse and to minimize student anonymity in the classroom. Where appropriate, lecture classes are complemented by audio-visual techniques that enrich and enhance the learning process.

Laboratory courses which provide educational experience in the design, conduct, and analysis of research in real and simulated settings. These courses, which are usually adjuncts to lecture classes, also offer opportunities for the student to develop skills in observations, data collection, problem-solving, interpretation, and working effectively in small teams.

Seminars, which are an important part of the instructional process because they provide an opportunity for students to study in their major fields of interest at an advanced level and in small groups. Seminars are used primarily in upper division courses, but where appropriate, this format is also used in the lower division.

Independent study and the senior thesis. These provide an opportunity for students to pursue knowledge in an area of particular interest under the supervision of an instructor. Such study is of a specialized nature, and, thus, it is limited to those students who have sufficient background in the field to benefit from independent inquiry.

Field trips, which introduce students to real situations outside of the classroom. These trips are particularly valuable in those areas of study that relate to the physical and cultural environment and the major research facilities on the island.

Internships and practica, whose importance to the instructional process comes from the bridge they form between the classroom and the outside world. These methods provide students with opportunities to apply the knowledge and techniques acquired in the classroom. By placing students in the community, they also serve as a means of strengthening the relationship between the College and the community.

Administration of Justice

Program Chair:

Katherine E. Young, Ph.D. (youngkat@hawaii.edu)

Social Sciences Division Office:

University Classroom Building 354, (808) 932-7126

Web: hilo.hawaii.edu/academics/adminjustice/

B.A. in Administration of Justice

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements

1. AJ 101 Introduction to Administration of Justice (to be taken at community college)
2. POLS 220 Intro to Legal Systems
3. PHIL 325 Philosophy of Law or POLS/GEOG 325 Legal Geography or POLS/WS 327 Law and Identity
4. POLS 322 Criminal Justice or POLS 321 Constitutional Law
5. POLS/SOC 324 Criminology
6. POLS 360 Public Administration
7. WS 151 Intro to Women's Studies
8. 18 semester hours from the following three-credit courses (Internship credit and Senior Thesis Credit may be used with permission of your advisor:
 - Any one AJ or SUBS course (to be taken at community college)
 - ANTH 485 Applied Anthropology
 - COM 442 Communication and Conflict
 - GEOG 328 Cultural Geography
 - GEOG 340 Intro to Land Use Planning
 - GEOG 430 Gender, Place, and Environment
 - HIST 274 History of Hawai'i
 - HIST 333 Twentieth Century Hawai'i (HIST 274 recommended)
 - HIST 383 United States 1930-1980
 - KES 320 Drug Awareness
 - PHIL 220 Social Ethics
 - PHIL 315 Ethical Theory
 - PHIL 320 Social and Political Philosophy
 - PHIL 323 Professional Ethics
 - PHIL/WS 393 Normality, Abnormality, & Soc
 - POLS 320 Mock Trial
 - POLS/SOC 326 Juvenile Delinquency
 - POLS 331 Presidency and Congress
 - POLS/WS 332 Politics of Race and Gender
 - POLS 334 Political Behavior, Campaigns, & Elections
 - POLS 335 Environmental Politics & Policy
 - POLS 342 International Law
 - POLS 346 International Organizations
 - POLS 433 Politics, Media & Public Opinion
 - PSY 321 Psychology of Personality
 - PSY 322 Social Psychology

- PSY 323 Community Psychology
- PSY 324 Abnormal Psychology
- PSY 360 Cross-Cultural Psychology
- PSY 377 Counseling Psychology
- PSY 390 Industrial & Organizational Psychology
- SOC 301 Intro Social Work
- SOC 310 Race and Ethnic Relations
- SOC 320 Social Stratification
- SOC 325 Sociology of Disaster
- SOC 340 Socialization & Identity
- SOC 345 Human Populations
- SOC 357 Intro to Family Therapy
- SOC 365 Sociology of Deviance
- SOC 370 Political Economy of Hawai'i
- PSY 323 Community Psychology
- PSY 324 Abnormal Psychology
- PSY 360 Cross-Cultural Psychology
- SOC 310 Race and Ethnic Relations
- SUBS 245 Group Counseling (to be taken at community college)
- SUBS 268 Survey of Substance Abuse Problems (to be taken at community college)
- SUBS 270 Core Functions of Substance Abuse Counseling (to be taken at community college)
- SUBS 294 Substance Abuse Practicum I (to be taken at community college)
- SUBS 295 Substance Abuse Practicum II (to be taken at community college)

Group 2 Total: Semester Credits (39)

Minimum semester hours required for the B.A. in Administration of Justice: 120 hours.

Notes

1. Students must earn at least a 2.0 GPA in courses required for the major.
2. At least 45 semester hours must be earned in courses at the 300–400-level.
3. To earn a Bachelor of Arts degree in Administration of Justice, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the Baccalaureate Degree Requirements in this Catalog.)
4. Students should always check course prerequisites and the frequency with which courses are offered. This information is found in Course Listings in this Catalog.
5. To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

Anthropology

Department Chair:

Lynn Morrison (lmorriso@hawaii.edu)

Social Sciences Division Office:

University Classroom Building 308, (808) 932-7100

Web: hilo.hawaii.edu/academics/anthropology/

Professors:

Daniel E. Brown, Ph.D.
Peter R. Mills, Ph.D.
Christopher A. Reichl, Ph.D.

Associate Professor:

Lynn Morrison, Ph.D.

Assistant Professors:

Joseph Genz, Ph.D.
Kathleen L. Kawelu, Ph.D.

Instructors:

Pua (Heather) Medeiros, Ph.D.
E. Momi Naughton, Ph.D.
Suzanne Romaine, Ph.D.
Timothy Scheffler, Ph.D.
Lynne Wolforth, Ph.D.

BA in Anthropology

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

Introductory Courses (12)

ANTH 100 Cultural Anthropology
ANTH 110 Archaeology
ANTH 115 Human Evolution
ANTH 121/LING 121 Introduction to Language

An additional 21 semester hours, of which 12 or more must be at the 300-level or above including:

ANTH 475 History of Anthropological Theory

and one or more ANTH methods course from:

- ANTH 445 Ethnographic Field Techniques
- ANTH 447 Marine Anthropology: Fishers in Oceania
- ANTH 450 Physical Anthropology Laboratory
- ANTH 470 Museology
- ANTH 481 Archaeometry
- ANTH 482 Archaeological Research Methods
- ANTH 484 Stone Tool Analysis
- ANTH 485 Applied Anthropology

Group 2 Total: 33 Semester Credits

Minimum semester hours required for the B.A. in Anthropology: 120 hours.

Notes

1. Students may demonstrate proficiency at the 100-level in archaeology, physical anthropology, cultural anthropology, and linguistics in place of taking the required introductory anthropology course. Consult an advisor for other courses that allow students to demonstrate

proficiency in these areas.

2. With the approval of the advisor, 6 semester hours of the required 21 additional hours of the major may be from other disciplines. Typically, this option is applied to transfer credits from anthropology-related programs (e.g. Indigenous Studies, Ethnic Studies). It is not applied typically to regularly-listed UH Hilo classes not already cross-listed.
3. Students must earn at least a 2.0 GPA in courses required for the major.
4. At least 45 semester hours must be earned in courses at the 300–400-level.
5. To earn a Bachelor of Arts degree in Anthropology, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the chapter on Baccalaureate Degree Requirements in the Catalog.)
6. Students should always check course prerequisites and the frequency with which courses are offered. This information is found in Course Listings in the back of the Catalog.
7. To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

Anthropology Minor

21 Semester Hours

Requirements:

3 of the 4 introductory courses. Choose from:

ANTH 100 Cultural Anthropology (3)
ANTH 110 Archaeology (3)
ANTH 115 Human Evolution (3)
ANTH 121/LING 121 Introduction to Language (3)

4 additional courses with at least two of the blocks represented:

Block I: ANTH 200, 310, 320, 323, 324, 354, 356, 357, 358, 372, 386, 387, 399, 435, 445, 447, 475, 485, 495, 499.

Block II: ANTH 315, 384, 399, 415, 450, 495, 499.

Block III: ANTH 321, 331, 347, 399, 495, 499.

Block IV: ANTH 385, 388, 389, 399, 470, 481, 482, 484, 490, 495, 499.

A minimum GPA of 2.0 in minor courses is required.

Global Engagement Certificate

The certificate consists of four required components:

1. Academic coursework
2. Intercultural or international experience
3. Intercultural events and activities
4. Portfolio

1. Academic Coursework

20 Semester Hours

Required Core:

Language (8): Two courses in a single language other than English. This requirement may be waived for students whose first language is not English.

ANTH 100 Cultural Anthropology (3)

Electives:

9 semester hours chosen from at least two different disciplines from the following:

- AG 230 Sustainable Agriculture (3)
- ANTH 320 Cross-Cultural Study of Women (3)
- ANTH 323 Cultural and Social Change (3)
- ANTH 324* Culture, Sex and Gender (3)
- ANTH 331* Language in Culture and Society (3)
- ANTH 372* Culture Through Film (3)
- ANTH 415* Medical Anthropology (3)
- ANTH 445* Ethnographic Field Techniques (3)
- ANTH 485* Applied Anthropology (3)
- COM 241 Health, Culture and Diversity (3)
- COM 344 Sustainability, Communication and Culture (3)
- COM 351 Communication in Multicultural Workplace (3)
- COM 358 International Communication (3)
- COM 359 Intercultural Communication (3)
- COM 368 Communication and Social Change (3)
- COM 442* Communication and Conflict (3)
- COM 451 Communication and Ethnography (3)
- COM 461* Race and Gender in Media (3)
- ECON 360* International Trade and Welfare (3)
- ECON 361* International Finance (3)
- ENG 201* Global Cinema (3)
- ENG 202* Literature of Human Rights (3)
- ENG 204* Introduction to Race/Gender Film Studies (3)
- ENG 257* Multicultural Literature (3)
- GEOG 328 Cultural Geography (3)
- GEOG 329 Development Geographies (3)
- GEOG 331* Tourism Geographies (3)
- HIST 151 World History: To 1500 (3)
- HIST 152 World History: From 1500 (3)
- HIST 470* US in the World 1865-2003 (3)
- HIST 485* Seminar in World History (3)
- POLS 304 Liberalism and Globalism (3)
- POLS 327 Law and Identity (3)
- POLS 332 Politics of Race and Gender (3)
- POLS 342* International Law (3)
- POLS 345 Model United Nations (3)
- POLS 346 International Organizations (3)
- POLS 355* International Political Economy (3)
- PSY 360* Cross-Cultural Psychology (3)
- PSY 460* Psychology of Culture and Health (3)
- SOC 300* Family in World Perspective (3)

SOC 310* Race and Ethnic Relations (3)

SOC 320* Social Stratification (3)

SOC 430* Seminar in Social Change (3)

* Denotes that the course has a prerequisite. Students should check the UH Hilo Catalog to find out the specific prerequisite(s) for each course. Special Topics, Directed Studies/Research, and other courses not listed above must be approved by the program coordinator before taking the course in order to count for one of the certificate electives.

2. International/Intercultural Experience

Students have the option of meeting this requirement by participating in one of the following University-sponsored or approved programs:

- A. International experience such as study abroad, cultural exchange, international internship, international service or volunteer experience, or international research project. The program advisors must approve these experiences in advance of the student's participation. The duration of this experience must be at least two weeks. This requirement can also be met if a student is an international student who has completed at least one semester at UH Hilo or if a U.S. student has had substantial international living experience.
- B. Intercultural engagement and community involvement in the U.S.: Students may choose either an experience in the Hilo community or in a community in the U.S. outside of Hilo. Examples of acceptable substantive experiences include leadership roles in a UH Hilo intercultural/international student organization; development and implementation of an intercultural event or activity; intercultural partnership experiences such as serving as a peer mentor, conversation partner or global ambassador; or an internship, volunteer or service work with an intercultural/international focus. Of particular importance will be engagement in projects in which students identify issues of cultural conflict in a community or academic discipline and develop and/or implement plans for addressing these issues through cultural understanding or training. The program advisors will assist students with finding appropriate experiences and must approve of these experiences in advance of the student's participation. Students must be engaged in this experience for a minimum of 80 hours, and may combine two experiences to achieve the number of required hours.

3. Intercultural Events and Activities

Attendance and participation in five shorter events and activities of an intercultural or international nature, such as campus lectures, symposia, workshops, presentations, performances, service activities, and community events. An Events and Activities Reflection Paper will be required for each event or activity and must be submitted within seven days of the event or activity. A list of approved events and activities will be available for students. Other events and activities may also be eligible, but must be approved in advance of participation.

4. Portfolio

Students must produce a portfolio as the culminating capstone of the program. As a way to synthesize his/her learning, students will complete the portfolio after the three components of the program described above are completed and deliver a presentation summarizing and highlighting aspects of his/her experiences. The portfolio is structured to enable students to demonstrate how he/she has met the program learning outcomes.

Portfolio Requirements

Outcome #1: Knowledge of other world cultures and global issues.

Course requirement: Earn 9 credits in courses chosen from the list of approved electives courses in addition to ANTH 100.

Portfolio artifacts required:

- Samples of coursework that demonstrate a) deep knowledge of another culture or cultures and b) awareness of global issues from multiple perspectives. Samples should be drawn from at least three of the four courses.
- Reflective essay that explains how these artifacts demonstrate enhanced knowledge of world cultures and global issues.

Outcome #2: Ability to communicate effectively and appropriately within a cultural context at a basic level or higher in a language other than one's native language.

Course requirement: Completion, or waiver of, the second semester of a single language other than English.

Portfolio artifact required:

- A reflective essay that describes and reflects upon at least two situations during the student's international or domestic intercultural learning experiences when s/he relied on her/his competency in this language.

Outcome #3: Intercultural competence developed through studying and living abroad or through domestic intercultural experiences.

Portfolio artifacts required:

- Presentation of the student's results from instruments that assess intercultural development and competence, such as the Intercultural Development Inventory or the Intercultural Effectiveness Scale.
- A reflective essay about the international experience(s) that includes:
 - One or more insights about a culture other than one's own gained from the experience(s).
 - Discussion of how the student came to understand how another culture views a significant global issue.
 - An account of a collaboration or close interaction the student had with individuals from another culture(s), addressing how the student negotiated cultural differences.

Outcome #4: Enhanced global and intercultural knowledge through participation in campus or community-based co-curricular experiences.

Portfolio artifacts required:

- Reports on attendance and participation in five events or activities.

Outcome #5: Ability to reflect upon and integrate global learning experiences.

Portfolio artifacts required:

- An essay, digital story, video or other form of creative expression describing:
 - how the student's global studies and experiences have met the overall goals of the Global Engagement Certificate;
 - how the student's global learning experiences have impacted his/her other areas of academic study and career goals; and
 - how the student thinks these experiences will impact future personal and professional growth.
- Presentation (10 minutes) of this artifact.

Art

Department Chair:

Michael D. Marshall, M.F.A.(mdmarsha@hawaii.edu)

Humanities Division Office:

Kanaka'ole Hall 214, (808) 932-7216

Web: hilo.hawaii.edu/academics/art/ and hilo.hawaii.edu/~art/

Professor:

Michael D. Marshall, M.F.A.

Andrew Grabar, M.F.A.

Associate Professor:

Jean Ippolito, Ph.D.

B.A. in Art

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

ART 101 Introduction to Visual Arts (3)

Foundation Studio Program (12)

ART 121 FP Studio: Beginning Drawing

ART 122 FP Studio: Beginning Painting

ART 123 FP Studio: 2-Dimensional Design

ART 124 FP Studio: 3-Dimensional Design

Art History (6)

ART 270 Aspects of Western Art

ART 280 Aspects of Asian Art

And 6 additional credits from the following 3-credit courses (6)

- ART 360 Renaissance and Baroque

- ART 370 Modern Art

- ART 375 Christianity and the Arts

- ART 380 Art of China

- ART 381 Art of Japan

- ART 385 Religious Arts of East Asia

- ART 390 Seminar in Contemporary Art

Studio Specialization(18 credits including 6 credits in upper division courses in drawing, painting, and printmaking from the following 3-credit studio courses.) Students are encouraged to participate in all three areas of studio art. ART 221 and upper division studio courses are repeatable for credit. (18)

ART 221 Intermediate Drawing

ART 321 Advanced Drawing

ART 222 Intermediate Painting

ART 322 Advanced Painting

ART 215 Printmaking: Intaglio

ART 216 Printmaking: Lithography

ART 315 Advanced Printmaking: Intaglio

ART 316 Advanced Printmaking Seminar

Group 2 Total: 45 semester credits

Minimum semester hours required for the B.A. in Art: 120 hours.

Notes

1. Students must earn at least a 2.0 GPA in courses required for the major.
2. The B.A. in Art requires a total of only 30 credits of 300-/400-level course work because of the number of 100-/200-level courses required in the major.
3. Check the prerequisites for your major course requirements so you can select lower division courses more efficiently. This information is found in the Course Listings in this Catalog.
4. The Foundation Studio Program requirements of 12 credits and ART 101 should be completed, if possible, during the first two years of study. Juniors and seniors pursue individual art work through their sequence of studio courses.
5. Students are encouraged to develop a portfolio of their work.
6. To earn a Bachelor of Arts degree in Art, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the Baccalaureate Degree Requirements in this Catalog.)
7. To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

Art Minor

24 Semester Hours

Block I: 12 semester hours.

- ART 121 FP Studio: Beginning Drawing (3)
- ART 122 FP Studio: Beginning Painting (3)
- ART 123 FP Studio: 2-Dimensional Design (3)
- ART 124 FP Studio: 3-Dimensional Design (3)

Block II: 3 semester hours. Select one course from:

- ART 101 Introduction to the Visual Arts (3)
- ART 270 Aspects of Western Art (3)
- ART 280 Aspects of Asian Art (3)

Block III: 9 semester hours. Select three studio courses numbered 200 or above.

Astronomy

Department Chair:

Philippe M. Binder, Ph.D. (uhhpachr@hawaii.edu)

Natural Sciences Division Office:

Life Sciences 2, (808) 932-7506/7507

Web: hilo.hawaii.edu/academics/astronomy/ and astro.uhh.hawaii.edu

Professor:

Philippe M. Binder, Ph.D.

Associate Professor:

Marianne Y. Takamiya, Ph.D.

Assistant Professors:

Kathy L. Cooksey, Ph.D.
Jesse M. Goldman, Ph.D.
R. Pierre Martin, Ph.D.

Instructors:

John C. Hamilton, M.S.
Norman G. Purves, M.S.

Technician:

John P. Coney, M.Ed.

B.S. in Astronomy

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements

Required courses in Astronomy and Physics

- ASTR 180 Principles of Astronomy I
 - ASTR 181 Principles of Astronomy II
 - ASTR 250 Observational Astronomy
 - ASTR 260 Computational Physics and Astronomy
 - ASTR 350 Stellar Astrophysics
 - ASTR 351 Galactic & Extragalactic Astrophysics
 - ASTR 495A–495B Seminar (2 semesters)
 - PHYS 170–170L General Physics I-Particles and Waves
 - PHYS 171–171L General Physics II-Electricity and Magnetism
 - PHYS 270 General Physics III-Introduction to Modern Physics
 - PHYS 371 General Physics IV-Classical Mechanics
 - PHYS 331 Optics
- and** nine additional hours from Physics or Astronomy numbered 300 or higher, not including ASTR 400

Required courses in Mathematics and Computer Science

- CS 150 Intro to Computer Science I
- MATH 205–206 Calculus I-II
- MATH 231–232 Calculus III-IV
- MATH 300 Ordinary Differential Equations

Minimum semester hours required for the B.S. in Astronomy: 120 hours.

Notes

1. A minimum 2.0 cumulative GPA is required.
2. A 2.0 or better in every required course above in ASTR, PHYS and MATH is required.
3. A minimum of 30 upper division semester hours (300-level courses or above) is required.

4. To earn a Bachelor of Science degree in Astronomy, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the Baccalaureate Degree Requirements in the Catalog.)
5. Students should always check course prerequisites and the frequency with which courses are offered. This information is found in Course Listings the Catalog.
6. To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

Astronomy Minor

15 Semester Hours

Requirements:

ASTR 180 Principles of Astronomy I (3)

ASTR 181 Principles of Astronomy II (3)

ASTR 250 Observational Astronomy (3)

(Prerequisite: MATH 104G (3) Pre-calculus II)

and six additional semester hours from ASTR courses 300 level or above, not including ASTR 400.

Minor in Earth and Space Science

24 Semester Hours

Requirements:

ASTR 110L General Astronomy Lab (1)

ASTR 180 Principles of Astronomy I (3)

ASTR 181 Principles of Astronomy II (3)

ASTR/GEOL 352 Comparative Planetology (3)

GEOL 111–111L Understanding the Earth with Lab (4)

GEOL 112–112L History of the Earth and Its Life with Lab (4)

GEOL 205 Geology of the Hawaiian Islands (3)

and one of the following courses:

- GEOG 300 Climatology (3)
- GEOL 450 Geological Remote Sensing (3)
- GEOG 470 Remote Sensing and Air Photo Interpretation (3)

Note: The minor in Earth and Space Science is undergoing review. Students are advised to consult with a Geology or Astronomy advisor before pursuing this program of study.

Biology

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B.A. in Biology

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

Required courses from Biology

BIOL 175–175L Introduction to Biology I with Lab (4)

BIOL 176–176L Introduction to Biology II with Lab (4)

BIOL 270–270L Intermediate Cell & Molecular Biology with Lab (4)

BIOL 280 Biostatistics (3)

BIOL 281–281L General Ecology with Lab (5)

BIOL 357 Evolution (3)

BIOL 375 Biology of Microorganisms (3)

BIOL 495A–495B Seminar (2 semesters) (2)

Four additional 300 or 400 level Biology elective courses (12)

And two additional 300 or 400 level Biology elective laboratory courses (3–4), at least one of which must be 400 level

Required courses from related fields

CHEM 124–124L General Chemistry I with Lab (4)

CHEM 125–125L General Chemistry II with Lab (4)

CHEM 241–241L and CHEM 242–242L Organic Chemistry I-II with Lab (8)

ENG 225 Writing for Science & Technology, **or**

ENG 286A Intro to Fiction Writing, **or**

ENG 287 Introduction to Rhetoric, **or**

PHIL 316 Science, Technology and Society, **or**

PHIL 327 Bioethics (3)

PHYS 106–170L, 107–171L College Physics I-II with Lab (8) **or**
 PHYS 170–170L, 171–171L General Physics I-II with Lab (10)
 MATH 115 Applied Calculus (3) or MATH 205 Calculus I (4)

Electives: 4 Courses from Group 1, and 2 Courses from Group 2

Group 1 Electives: Choose 4 courses from the following

- BIOL 381 Conservation Biology (3)
- BIOL 410 Biochemistry (3)
- BIOL 415 Cell Biology (3)
- BIOL 443 Ecological Animal Physiology (3)
- BIOL 445 Behavioral Ecology & Evolution (3)
- BIOL 455 Plant Ecology (3)
- BIOL 460 Plant Diversity & Evolution (3)
- BIOL 466 Genetics (3)
- BIOL 467 Ecological Genetics (3)
- BIOL 437 Marine Mammal Behavior (3)
- BIOL 477 Avian Biology (3)
- BIOL 481 Advanced Ecology and Evolution (3)
- BIOL 394 or 494 Special Topics in Subject Matter (Arr.) (10)

Group 2 Electives: Choose 2 courses from the following
 BIOL laboratory courses, 1 of which must be 400-level (3-4)

- BIOL 357L Evolutionary Genetics Lab (1)
- BIOL 375L Biology of Microorganisms Lab (1)
- BIOL 410L Biochemistry Lab (2)
- BIOL 415L Cell Biology (2)
- BIOL 466L Genetics Lab (2)
- BIOL 481L Ecology & Evolutn Resrch Methd (2)

Group 2 Total: 73-77 Semester Credits

Minimum semester hours required for the B.A. in Biology: 120 hours.

Additional Courses Recommended For Specific Plans After Graduation

- **Graduate studies in biology:** At least two semesters of Directed Studies (BIOL 199, 299, 399, or 499).
- **Application to medical, pharmacy, dental, veterinary school or other health-related fields:** At least one semester of Directed Studies (BIOL 199, 299, 399, or 499) and participation in volunteer and shadowing experiences in the local medical, pharmacy, dental, or veterinary community as appropriate. As prerequisite courses for professional schools may vary, students should seek advising early in their academic careers to develop an academic plan.
- **Careers that may include teaching:** one or more semesters of Teaching Assistance and Tutoring in Biology (BIOL 496).
- **Careers in environmental biology:** a course in geographic information systems (GEOG 480 or GEOL 445).

Notes

1. BIOL 101 and BIOL 101L are non-major courses and do not count toward the major or minor in Biology.
2. 100-level courses should be completed by the student prior to enrollment in 200-level or higher courses.
3. Biology 175 and 176 are offered every semester, and can be taken in either order. Also for BIOL 175 and BIOL 176, the lab section must be taken concurrently with the lecture.
4. Students should begin chemistry course their freshmen year if they plan to complete their academic program in four years. Chemistry courses are often prerequisites for required biology classes.
5. Students must earn a minimum grade of "C-" in all required and prerequisite courses.
6. The upper division credits needed for graduation for all degrees in Biology are met in the process of completing these degrees.
7. To earn a Bachelor of Arts or Bachelor of Science degree in Biology, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the Baccalaureate Degree Requirements in this catalog.)
8. Many upper-level Biology courses are writing intensive and therefore offer the ability for students to complete that university require-

- ment. In these courses students write a series of laboratory reports demonstrating their ability to perform experiments and to organize, analyze, and interpret the quantitative results of experimental work.
9. Students should always check course prerequisites and the frequency with which courses are offered.
 10. To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**
 11. Students completing the B.S. in Cell and Molecular Biology can choose to take one additional 4-credit upper-division CHEM course (300 or above) to receive a Chemistry Minor.

BS in Biology: Cell and Molecular Track

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

Required courses from Biology

- BIOL 175–175L Introduction to Biology I with Lab (4)
- BIOL 176–176L Introduction to Biology II with Lab (4)
- BIOL 270–270L Intermediate Cell & Molecular Biology w. Lab (4)
- BIOL 280 Biostatistics (3)
- BIOL 281–281L General Ecology with Lab (4)
- BIOL 357 Evolution (3)
- BIOL 375–375L Biology of Microorganisms with Lab (4)
- BIOL 410–410L Biochemistry with Lab (5)
- BIOL 415–415L Cell Biology with Lab (5)
- BIOL 466–466L Genetics with Lab (5)
- BIOL 495A–495B Seminar (2 semesters) (2)

Required courses from related fields

- CHEM 124–124L General Chemistry I with Lab (4)
- CHEM 125–125L General Chemistry II with Lab (4)
- CHEM 241–241L and CHEM 242–242L Organic Chemistry I-II with Lab (8)
- ENG 225 Writing for Sci & Technology, **or**
 ENG 286A Intro to Fiction Writing, **or**
 ENG 287, Introduction to Rhetoric, **or**
 PHIL 316 Science, Technology and Society, **or**
 PHIL 327 Bioethics (3)
- PHYS 170–170L, 171–171L General Physics I-II with Lab (10)
- MATH 205–206 Calculus I-II (8)

Group 2 Total: 80 Semester Credits

Minimum semester hours required for the B.S. in Biology: Cell and Molecular Track: 120 hours.

Additional Courses Recommended For Specific Plans After Graduation

- **Graduate studies in biology:** At least two semesters of Directed Studies (BIOL 199, 299, 399, or 499).
- **Application to medical, pharmacy, dental, veterinary school or other health-related fields:** At least one semester of Directed Studies (BIOL 199, 299, 399, or 499) and participation in volunteer and shadowing experiences in the local medical, pharmacy, dental, or veterinary community as appropriate. As prerequisite courses for professional schools may vary, students should seek advising early in their academic careers to develop an academic plan.

- **Careers that may include teaching:** one or more semesters of Teaching Assistance and Tutoring in Biology (BIOL 496).
- **Careers in environmental biology:** a course in geographic information systems (GEOG 480 or GEOL 445).

Notes

1. BIOL 101 and BIOL 101L are non-major courses and do not count toward the major or minor in Biology.
2. 100-level courses should be completed by the student prior to enrollment in 200-level or higher courses.
3. Biology 175 and 176 are offered every semester, and can be taken in either order. Also for BIOL 175 and BIOL 176, the lab section must be taken concurrently with the lecture.
4. Students should begin chemistry courses their freshmen year if they plan to complete their academic program in four years. Chemistry courses are often prerequisites for required biology classes.
5. Students must earn a minimum grade of "C-" in all required and prerequisite courses.
6. The upper division credits needed for graduation for all degrees in Biology are met in the process of completing these degrees.
7. To earn a Bachelor of Arts or Bachelor of Science degree in Biology, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the Baccalaureate Degree Requirements in this catalog.)
8. Many upper-level Biology courses are writing intensive and therefore offer the ability for students to complete that university requirement. In these courses students write a series of laboratory reports demonstrating their ability to perform experiments and to organize, analyze, and interpret the quantitative results of experimental work.
9. Students should always check course prerequisites and the frequency with which courses are offered.
10. To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**
11. Students completing the B.S. in Cell and Molecular Biology can choose to take one additional 4-credit upper-division CHEM course (300 or above) to receive a Chemistry Minor.

BS in Biology: Ecology, Evolution and Conservation Track

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

Required courses from Biology

- BIOL 175–175L Introduction to Biology I with Lab (4)
 - BIOL 176–176L Introduction to Biology II with Lab (4)
 - BIOL 270–270L Intermediate Cell & Molecular Biology with Lab (4)
 - BIOL 280 Biostatistics (3)
 - BIOL 281–281L General Ecology with Lab (5)
 - BIOL 357–357L Evolution with Lab (4)
 - BIOL 375 Biology of Microorganisms (3)
 - BIOL 381 Conservation Biology (3)
 - BIOL 466 Genetics, or BIOL 467 Ecological Genetics (3)
 - BIOL 481–481L Theory and Methods of Ecology and Evolution with Lab (5)
 - BIOL 495A–495B Seminar (2 semesters) (2)
- Two** additional 300 or 400 level Biology elective courses (6)

Required courses from related fields

- CHEM 124–124L General Chemistry I (4)
- CHEM 125–125L General Chemistry II (4)
- CHEM 241–241L and CHEM 242–242L Organic Chemistry I-II with Lab (8)
- PHYS 170–170L, 171–171L General Physics I-II with Lab (10)
- MATH 205 Calculus I (4)
- ENG 225 Writing for Sci & Technology, **or**
- ENG 286A Intro to Fiction Writing, **or**
- ENG 287, Introduction to Rhetoric, **or**
- PHIL 316 Science, Technology and Society, **or**
- PHIL 327 Bioethics (3)

Electives: Choose 6 semester hours from the following BIOL courses (6)

- BIOL 394 or 494 Special Topics in Subject Matter (Arr.) (IO)
- BIOL 410 Biochemistry (3)
- BIOL 415 Cell Biology (3)
- BIOL 437/PSY 437 Marine Mammal Behavior (3)
- BIOL 443 Ecological Animal Physiology (3)
- BIOL 445 Behavioral Ecology and Evolution (3)
- BIOL 455 Plant Ecology (3)
- BIOL 460 Plant Diversity and Evolution (3)
- BIOL 477 Avian Biology (3)

Group 2 Total: 79 Semester Credits

Minimum semester hours required for the B.S. in Biology: Ecology, Evolution and Conservation Track 120 hours.

Additional Courses Recommended For Specific Plans After Graduation

- **Graduate studies in biology:** At least two semesters of Directed Studies (BIOL 199, 299, 399, or 499).
- **Application to medical, pharmacy, dental, veterinary school or**

other health-related fields: At least one semester of Directed Studies (BIOL 199, 299, 399, or 499) and participation in volunteer and shadowing experiences in the local medical, pharmacy, dental, or veterinary community as appropriate. As prerequisite courses for professional schools may vary, students should seek advising early in their academic careers to develop an academic plan.

- **Careers that may include teaching:** one or more semesters of Teaching Assistance and Tutoring in Biology (BIOL 496).
- **Careers in environmental biology:** a course in geographic information systems (GEOG 480 or GEOL 445).

Notes

1. BIOL 101 and BIOL 101L are non-major courses and do not count toward the major or minor in Biology.
2. 100-level courses should be completed by the student prior to enrollment in 200-level or higher courses.
3. Biology 175 and 176 are offered every semester, and can be taken in either order. Also for BIOL 175 and BIOL 176, the lab section must be taken concurrently with the lecture.
4. Students should begin chemistry courses their freshmen year if they plan to complete their academic program in four years. Chemistry courses are often prerequisites for required biology classes.
5. Students must earn a minimum grade of "C-" in all required and prerequisite courses.
6. The upper division credits needed for graduation for all degrees in Biology are met in the process of completing these degrees.
7. To earn a Bachelor of Arts or Bachelor of Science degree in Biology, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the Baccalaureate Degree Requirements in this catalog.)
8. Many upper-level Biology courses are writing intensive and therefore offer the ability for students to complete that university requirement. In these courses students write a series of laboratory reports demonstrating their ability to perform experiments and to organize, analyze, and interpret the quantitative results of experimental work.
9. Students should always check course prerequisites and the frequency with which courses are offered.
10. To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**
11. Students completing the B.S. in Cell and Molecular Biology can choose to take one additional 4-credit upper-division CHEM course (300 or above) to receive a Chemistry Minor.

Biology Minor

Cell and Molecular Track Requirements

21 semester hours

- BIOL 175–175L Introduction to Biology I with Lab (4)
 BIOL 176–176L Introduction to Biology II with Lab (4)
 BIOL 270 Intermediate Cell and Molecular Biology (3)
 BIOL 275–275L Fundamentals of Microbiology with Lab (4) **or**
 BIOL 375–375L Biology of Microorganisms with Lab (4)
 BIOL 281 General Ecology (3)
and three additional semester hours of biology in courses numbered above BIOL 125 (3)

Ecology, Evolution and Conservation Biology Track Requirements

22 semester hours

- BIOL 125 Introduction to Cell and Molecular Biology (3) **or**
 BIOL 270 Intermediate Cell and Molecular Biology (3)
 BIOL 175–175L Introduction to Biology I with Lab (4)
 BIOL 176–176L Introduction to Biology II with Lab (4)
 BIOL 156 Natural History & Conservation of the Hawaiian Islands (3)
 BIOL 281–281L General Ecology with Lab (5)
 BIOL 357 Evolution (3)

Chemistry

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 Ernest B.S. Kho, Jr., Ph.D. Natural Products Chemistry and Organic Chemistry
 Jon Pierre Michaud, Ph.D. Toxicology, Pharmacology and Environmental Chemistry
 Charles J. Simmons, Ph.D. Crystallography / Inorganic and Physical Chemistry

Instructors:

- Natalie Crist, Ph.D.
 Simona Vaduvescu, M.S.

BA in Chemistry

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements. The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

Required courses from Chemistry

- CHEM 124–124L Chemistry I with Lab (4)
 CHEM 125–125L Chemistry II with Lab (4)
 CHEM 241–241L Organic Chemistry I with Lab (4)
 CHEM 242–242L Organic Chemistry II with Lab (4)
 CHEM 320 Descriptive Inorganic Chemistry (3)
 CHEM 333 Quantitative Analysis with Lab (5)
 CHEM 351–351L Physical Chemistry I with Lab (4)
 CHEM 352–352L Physical Chemistry II with Lab (4)
 CHEM 421 Intermediate Inorganic Chemistry (3)
 CHEM 431–431L Instrumental Analysis with Lab (4)
 CHEM 495A–495B Seminar (2 semesters) (2)

Required courses from related fields

- BIOL 410 Biochemistry (3)
 MATH 205–206 Calculus I-II (8)
 MATH 231 Calculus III (3)
 PHYS 170–170L General Physics I with Lab (5)
 PHYS 171–171L General Physics II with Lab (5)

Group 2 Total: 65 Semester Credits

Minimum total semester credits required for the B.A. in Chemistry: 120 hours.

Additional recommended courses include

- Eight semester hours of a foreign language (French, Spanish, or Japanese)
- ENG 225 (Writing for Science and Technology)
- MATH 300 (Ordinary Differential Equations)

- MATH 311 (Introduction to Linear Algebra)

Notes

1. Students must earn at least a 2.0 GPA in courses required for the major.
2. Physical Chemistry majors must take at least 21 upper division credits (courses 300 or above); Health Sciences Chemistry majors must take at least 24 upper division credits (courses 300 or above).
3. To earn a Bachelor of Arts in Chemistry, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the Baccalaureate Degree Requirements in this catalog.)
4. Students should always check course prerequisites and the frequency with which courses are offered. This information is found in Course Listings in this catalog.
5. To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

BA in Chemistry: Health Sciences

Group 1. General Education Basic, Area, and Integrative Requirements.

[Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

Required courses from Chemistry

- CHEM 124–124L Chemistry I with Lab (4)
- CHEM 125–125L Chemistry II with Lab (4)
- CHEM 241–241L and 242–242L Organic Chemistry with Lab (8)
- CHEM 320 Descriptive Inorganic Chemistry (3)
- CHEM 333 Quantitative Analysis with Lab (5)
- CHEM 350–350L Physical Chemistry for the Life Sciences with Lab (5)
- CHEM 431–431L Instrumental Analysis with Lab (4)
- CHEM 495A–495B Seminar (2 semesters) (2)

and a minimum of three additional hours in CHEM courses above the 200-level. CHEM 341 (Qualitative Organic Analysis) or CHEM 441 (Intermediate Organic Chemistry) is recommended. (3)

Required courses from related fields

- MATH 205 Calculus I (4)
- MATH 206 Calculus II (4)
- PHYS 106–170L College Physics I with Lab (4) **or**
PHYS 170-170L Gen Phys I: Mechanics with Lab (5)
- PHYS 107–171L College Physics II with Lab (4) **or**
PHYS 171-171L College Physics II: Elec & Magnetism with Lab (5)
- BIOL 175-175L Introductory Biology I with Lab (4)
- BIOL 243–243L Human Anatomy and Physiology I with Lab (4)
- BIOL 244–244L Human Anatomy and Physiology II with Lab (4)
- BIOL 270 Intermediate Cell and Moleculr Biology (3)
- BIOL 410 Biochemistry (3)
- BIOL 466 Genetics (3)

Group 2 Total: 75–77 Semester Credits

Minimum total semester credits required for the BA in Chemistry: 120 hours.

Additional recommended courses include:

- 8 semester hours of a foreign language (French, Spanish, Japanese)
- ENG 225 (Writing for Science and Technology)

- MATH 300 (Ordinary Differential Equations)
- MATH 311 (Introduction to Linear Algebra)

Notes

1. Students must earn at least a 2.0 GPA in courses required for the major.
2. Physical Chemistry majors must take at least 21 upper division credits (courses 300 or above); Health Sciences Chemistry majors must take at least 24 upper division credits (courses 300 or above).
3. To earn a Bachelor of Arts in Chemistry, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the chapter on Baccalaureate Degree Requirements in the Catalog.)
4. Students should always check course prerequisites and the frequency with which courses are offered.
5. To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

Chemistry Minor

22 semester hours

Requirements:

- CHEM 124–124L General Chemistry I with Lab (5)
- CHEM 125–125L General Chemistry II with Lab (5)
- CHEM 241–241L Organic Chemistry I with Lab (4)
- CHEM 242–242L Organic Chemistry II with Lab (4)
- and one** 4-credit CHEM course with laboratory at the upper-division

Chinese Studies Certificate

See Languages

Communication

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Iva R. B. Goldman, M.A.

Yoshitaka Miike, Ph.D.

Steven Y. Miura, Ph.D.

Jing Yin, Ph.D.

Instructor:

Rayna K. Morel, M.A.

BA in Communication

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

Core Knowledge and Behaviors Courses

COM 200 Fundamentals of Interpersonal Communication (3)

COM 251 Public Speaking (3)

COM 270 Introduction to Theories of Human Communication (3)

Culture or Diversity Course (3) (Choose **one** of the following courses)

COM 241 Health, Culture, and Diversity (3)

COM 260 Media and Culture (3)

COM 344 Sustainability, Communication, and Culture (3)

COM 359 Intercultural Communication (3)

COM Electives and Advanced Courses (18 semester hours, at least 9 of which must be 300–400-level COM courses)

(See Note 2 below) (18)

Capstone Paper or Project

(Choose **one** course from the following courses) (3)

COM 400 Seminar in Human Dialogue (3)

COM 441 Leadership and Communication (3)

COM 444 Public Relations (3)

COM 451 Communication and Ethnography (3)

COM 456 Asian Perspectives on Communication (3)

COM 460 Mass Media Analysis (3)

COM 494 Special Topics (3) (see Note 2 below)

COM 499 Directed Studies (3) (see Notes 2 and 8 below)

Group 2 Total: 33 Semester Credits

Minimum semester hours required for the B.A. in Communication: 120 hours.

Notes

1. With advisor approval 6 semester hours of the total elective hours may be from a related discipline.
2. A student may choose COM 494 or 499 to complete the capstone

course requirement. However, it is strongly recommended that students complete COM 350 (Research Methods) before pursuing this option.

3. A minimum of 12 semester hours out of the total 33 semester hours required for the major must be taken from 300-level courses or above.
4. At least 45 total semester hours must be earned in upper division courses (300-level courses or above) for graduation.
5. To earn a Bachelor of Arts degree in Communication, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the Baccalaureate Degree Requirements in this Catalog.)
6. Students should always check course prerequisites and the frequency with which courses are offered.
7. To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**
8. Policies and Criteria for COM 499 (Directed Studies). In order to support students in meeting their personal and professional goals, the Communication Department offers majors opportunities to pursue their interested through the Directed Studies option.
 - A directed study must be in, or related to, the field of communication.
 - A directed study typically requires the submission of a paper (or papers) totaling a minimum of 16 typed, double-spaced pages.
 - A written 1–2 page proposal must (1) describe the nature of the directed study and the criteria for evaluation, (2) include a summary statement of the study and a list of at least five references to be used for the study, and (3) be approved by the directing faculty member and the department chair before the registration deadline.
 - Each hour of credit must entail at least four hours per week of intensive study and/or research.
 - In cases that do not explicitly meet the above criteria, the communication faculty will determine whether or not the proposal should be accepted, modified, or rejected.

Communication Minor

21 Semester Hours

Requirements:

Core Knowledge and Behaviors Courses (9 semester hours)

COM 200 Fundamentals of Interpersonal Communication

COM 251 Public Speaking

COM 270 Introduction to Communication Theory

Culture or Diversity Elective (Choose one course from the following 3-semester-hour courses)

▪ COM 241 Health, Culture, and Diversity

▪ COM 260 Media and Culture

▪ COM 359 Intercultural Communication

An additional 9 semester hours of Communication electives (at least 6 hours must be from 300-400 level courses). With approval of an advisor, 3 semester hours may be from a related discipline.

Computer Science

Department Chair:

Sevki Erdogan, Ph.D. (sevki@hawaii.edu)

Natural Sciences Division Office:

Life Sciences 2, (808) 932-7506

Web: hilo.hawaii.edu/academics/computersci/ and cs.uhh.hawaii.edu

Professors Emeriti:

Bill H. Chen, Ph.D.

John M. Gersting, Ph.D.

Judith L. Gersting, Ph.D.

Professor:

Sevki Erdogan, Ph.D.

Associate Professor:

H. Keith Edwards, Ph.D.

Assistant Professors:

Michael R. Peterson, Ph.D.

Shawon Rahman, Ph.D.

Jie Cheng, Ph.D.

Instructors:

Barbara Meguro, M.A.

David Bishop, MNCM

BS in Computer Science

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements

Humanities Required Courses

COM 251 Public Speaking (3)

ENG 287 Introduction to Rhetoric (3)

Mathematics Required Courses

MATH 205 Calculus I (4)

MATH 206 Calculus II (4)

MATH 311 Introduction to Linear Algebra (3)

Natural Science Required Courses

PHYS 170–170L General Physics I with Lab (5)

PHYS 171–171L General Physics II with Lab (5)

Choose **one** from the following courses: (3–4)

- ASTR 180 (3)
- ASTR 181 (ASTR 180 is a pre-requisite) (3)
- BIOL 125 (3)
- BIOL 175–175L (4)
- BIOL 176–176L (4)
- BIOL 275–275L (4)
- CHEM 124 (3)
- GEOL 111 (3)
- MARE 201 (3)

Computer Science Required Core Courses

CS 141 Discrete Mathematics for Computer Science I (3)

CS 150 Introduction to Computer Science I (3)

CS 151 Introduction to Computer Science II (3)

CS 241 Discrete Mathematics for Computer Science II (3)

CS 266 Computer Organization and Assembly Language (3)

CS 321 Data Structures (3)

CS 407 Introduction to Numerical Analysis I (3)

CS 410 Elements of Computer Architecture (3)

CS 420 Database Internals (3)

CS 430 Operating Systems (3)

CS 450 Organization of Programming Languages (3)

CS 460 Software Engineering I (3)

CS 461 Software Engineering II (3)

CS 470 Theory of Computing (3)

CS 495 CS Professional Seminar (1)

Three Computer Science Required Elective Courses

One course from the following:

- CS 340 Graphical User Interfaces (3)
- CS 350 Systems Programming (3)

Two courses from the following:

- CS 421 Database System Design (3)
- CS 431 Computer Networks & Data Communications (3)
- CS 440 Artificial Intelligence (3)
- CS 451 Compiler Theory (3)

One other 400-level CS course not previously taken (3)

Group 2 Total: 85-86 Semester Credits

Minimum semester hours required for the B.S. in Computer Science:
120 hours.

Notes

1. A minimum of a 2.0 cumulative GPA is required.
2. A grade of "C" or better in each CS course required for the degree and in MATH 311.
3. 45 upper division (300–400-level) semester hours are required.
4. To earn a Bachelor of Science degree in Computer Science, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the Baccalaureate Degree Requirements in this Catalog.)
5. Students should always check course prerequisites and the frequency with which courses are offered.
6. To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering** and to use the helpful planning aids provided by the Department at cs.uhh.hawaii.edu/cs/.

Computer Science Minor

18 semester hours

Students pursuing non-Computer Science degrees may minor in Computer Science by completing the following requirements with a grade of "C" or better in each course.

CS 141 Discrete Mathematics for Computer Science I (3)

CS 150 Introduction to Computer Science I (3)

CS 151 Introduction to Computer Science II (3)

CS 321 Data Structures (3)

Plus **two 400-level Computer Science electives** for a total of 6 semester hours.

Computer Application Development Specialization Certificate

21 semester hours

The Certificate in Computer Application Development Specialization allows students to learn applied technical skills that are directly applicable in the 21st century workplace.

Required: 21 semester hours from the following courses with a minimum of one course each from Groups B, C, and D

Group A: CS 100 or CS 101 (not both), CS 130, CS 135, CS 137, CS 138, CS 140, CS 200

Group B: CS 150, CS 151, CS 201

Group C: CS 205, CS 300

Group D: CS 394

Note: Students must obtain a grade of "C" or better in each required course in order to be awarded the certificate.

Database Management Certificate

25 semester hours

The Certificate in Database Management is intended to give students a thorough technical foundation in the theory, design, implementation and application of databases.

Required courses:

MATH 205 Calculus I (4)*

CS 141 Discrete Mathematics for Computer Science I (3)

CS 150 Introduction to Computer Science I (3)*

CS 151 Introduction to Computer Science II (3)*

CS 321 Data Structures (3)

CS 420 Database Internals(3)

CS 421 Database Systems Design (3)

CS 422 Database Analytics (3)

*Students must complete CS 150, CS 151, and MATH 205 or the equivalent with a grade of "C" or better in each course before applying for admission to the certificate program.

Students must obtain a grade of "C" or better in each required course in order to be awarded the certificate.

E-Commerce Technology and Business Certificate

21 semester hours

The Certificate in E-Commerce Technology and Business offers a unique combination of computer science and business courses. The intent is to produce highly-skilled workers who have both a strong technical foundation in Internet site development and management, and an understanding of how businesses must plan their structures and strategies to compete successfully in the world of E-Commerce.

Required courses:

CS 101 Digital Tools for the Information World (3)

CS 200 Web Technology I (3)

CS 201 Web Technology II (3)

CS 300 Web Site Management (3)

MGT 341 Project Management (3)*

MKT 313 Promotional Strategy (3)*

QBA 365 Managing Electronic Commerce (3)*

*Non-business majors need permission of instructor to register

Students must complete ENG 100 and MATH 104 or the equivalent with a grade of "C" or better in each course before applying for admission to the certificate program.

School of Education

Department Chair:

Jan Zulich, Ph.D. (jzulich@hawaii.edu)

Department Vice Chair:

Michele Ebersole, Ph.D. (mebersol@hawaii.edu)

School of Education Office:

University Classroom Building 313, (808) 932-7102

Web: hilo.hawaii.edu/depts/education/

Clerk Steno: Madeline Sehna

Professor:

Jan Zulich, Ph.D.

Associate Professors:

Diane Barrett, Ph.D.

Michele Ebersole, Ph.D.

Janet Ray, Ed.D.

Assistant Professor:

Avis Masuda, Ph.D.

Instructor-Field Experience Coordinator:

Colby McNaughton, M.S.

Junior Specialist/Program Advisor:

Travis Nakayama, MPA

Pre-Teacher Education Sequence for MAT Admission

The Pre-MAT sequence is the first step in completing the requirements for admission into the MAT Program. Students that successfully complete this phase will be able to apply to the MAT Program.

Pre-MAT Program Requirements and Course Information

Students who consider seeking licensure should ideally begin preparation during their undergraduate program of study. To ensure that they prepare adequately, students should contact the Education Department Advisor at (808) 932-7109 to make an appointment for advising. The following information is provided for students interested in completing the Pre-MAT requirements.

1. Content Preparation Requirements for all elementary Pre-MAT students (9 semester hours)

ED 341 Literacy Development in Elementary Schools (3)

ED 343 Math for Elementary School Teachers (3)

ED 347 Integrated Science & Social Studies for Elementary School Teachers (3)

Note: Each of the above courses must be passed with a grade of "C" or better. Content preparation courses, **in combination**, must be passed with a 2.75 GPA or better.

2. Content Preparation Electives for elementary Pre-MAT students (optional courses, not required)

ED 346 Teaching Children's Literature (3)

DNCE 419 Dance in Education (3)

MUS 419 Music for Elementary Teachers (3)

3. Content Preparation Requirements for secondary Pre-MAT students seeking Social Studies license: (12 semester hours)

Choose **one** US History course from the following:

HIST 380, 381, 382, or 383 (3)

Take both World History courses in the following sequence:

HIST 151, 152

Choose **one** Hawai'i course from the following:

▪ ANTH 386 Hawaiian Culture Before 1819 (3)

▪ ANTH 387 Modern Hawaiian Culture (1819 to present) (3)

▪ GEOG 332 Geography of the Hawaiian Islands (3)

▪ HIST 274 History of Hawai'i (3)

▪ HIST 332 Hawaiian Kingdom (3)

- HIST 333 Twentieth Century Hawai'i (3)

4. Content Preparation Requirements for secondary Pre-MAT students who are Non-English majors seeking English license (18 semester hours)

Pre-Survey Requirements. (9 semester hours)

- One ENG 200A–200F genre studies (3)
- One additional 200-level writing course (3)
- ENG 300 Introduction to Literary Studies (3)

Choose **one sequence** from the literature survey courses below (6 semester hours):

- ENG 304–305 Survey of British Literature I and II (6)
- or** ENG 351–352 Survey of American Literature I and II (6)

Choose **one 300-level course or one course from the following:** (3 semester hours)

- ENG 324 Modern English Grammar and Usage (3)
- ENG 482 Teaching Composition (3)
- ENG 492 Teaching Literature (3)

- DNCE 419 (3): Dance in Education
- DRAM 419 (3): Drama in Education
- ENG 344/LING 344(3): Children and Language
- ENG 345 (3): Children and Literature
- ENG 482 (3): Teaching Composition
- ENG 484 (3): ESL Materials and Methods
- ENG 492 (3): Teaching Literature
- KES 233 (3): Physical Education: Elementary
- LING 351 (3): Methods: Foreign Language Teaching
- MARE 434 (3): Teaching Marine Science
- MUS 419 (3): Music for Elementary Teachers

Educational Studies Certificate

18 Credit Hour Undergraduate Certificate Program

The Educational Studies certificate is intended to provide students with a basic understanding of the methodologies, theories, tools, and issues that shape the field of education. The core courses in this certificate program provide students with background in educational foundations, educational technology, and developmental psychology. The elective courses allow students to select courses from a variety of educational content areas.

Students who graduate with a certificate in Educational Studies will be prepared for a variety of education-related positions, such as coaches, educational assistants, and teachers. The certificate does NOT culminate in eligibility for a teaching license.

Students pursuing this certificate will complete 3 credit hours (1 course) of core coursework in addition to earning 15 credit hours of electives, of which a minimum of 9 credit hours must be from the School of Education. Students must receive a grade of "C" or better in all courses applied to the certificate program.

Core Courses: Complete a core course for a total of 3 credit hours.

- ED 310 (3): Foundations of Education **or**
- ED 350 (3): Developmental Concepts of Learning

Elective Courses: Complete 15 credit hours (5 courses) from the following list. A minimum of 9 credit hours (3 courses) must be Education Courses ("ED" Prefix).

The list of elective courses is updated each year; therefore students enrolled within this certificate program should regularly consult with the advisor of the School of Education. The electives are offered by the School of Education and other academic departments as well. Therefore, students may take only Education courses or may combine Education courses with other discipline courses to complete program electives.

School of Education Courses: *Students must complete a minimum of 9 credits from this list.*

- ED 210 (3): Introduction to Teaching
- ED 310 (3): Foundations of Education (if not used as a core course)
- ED 341 (4): Literacy Development in the Elementary School
- ED 343 (3): Math for Elementary Teachers
- ED 346 (3): Teaching Children's Literature
- ED 347 (3): Integrated Science/Social Studies for Elementary Teachers
- ED 350 (3): Development Concepts of Learning (if not used as a core course)
- ED x94 (3): Special Topics in Subject Matter (maximum of 3 credit hours)
- ED x99 (3): Directed Studies (maximum of 3 credit hours)

Additional Electives: *Students may take a maximum of 6 credits from this list.*

Engineering Program

Pre-Engineering Advisor:

Shawon Rahman (srahman@hawaii.edu),
Associate Professor, Computer Science and Engineering Dept,
College Hall 345A-3B, (808) 932-7524

Web: cse.uhh.hawaii.edu/engineering.html

Natural Sciences Division Office:

Life Sciences 2, (808) 932-7506

Year 1 Suggested Schedule

Semester I (14 semester hours)

ENG 100 Composition (3)
CHEM 124–124L Chemistry I with Lab (4)
COM 251 Speech (3)
MATH 205 Calculus I (4)

Semester II (15 semester hours)

CS 150 Introduction to Computer Sci I (3)
CHEM 125 Chemistry II (3)
PHYS 170–170L Physics I with Lab (5)
MATH 206 Calculus II (4)

Year 2 Suggested Schedule

Semester I (17 semester hours)

CE 270 Applied Mechanics I (2)
MATH 231 Calculus III (3)
PHYS 171–171L Physics II with Lab (5)
HIST 151 World History I (3)
Hum/SocSci Elective (3)

Semester II (15 semester hours)

CE 271 Applied Mechanics II (2)
MATH 232 Calculus IV (3)
EE 211 Basic Circuit Analysis I (3) **or**
CE 394 Special Topics in CE (e.g. Mechanics of Materials)
HIST 152 World History II (3)
ECON 100 Introduction to Economics (3)

English

Humanities Division Office:

Kanaka'ole Hall 214, (808) 932-7216

Web: hilo.hawaii.edu/academics/english/ and
hilo.hawaii.edu/depts/english/

Professor:

Seri Luangphinit, Ph.D.

Associate Professors:

Mark Panek, Ph.D.
Jennifer Wheat, Ph.D.
Kirsten Mollegaard, Ph.D.

Instructors:

Marianne B. Conley-Ramsey, M.A.
Lauri Sagle, M.A.
Susan Wackerbarth, M.A.

BA in English

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (Please note any course pre-requisites)

Core Requirements (21)

ENG 200 Any course in the ENG 200A-200G series (3)
ENG 2xx Any additional 200-level writing **or**
literature course (excluding ENG 209 and 225) (3)
ENG 300 Introduction to Literary Studies (3)
ENG 304 Survey of British Literature I:
Middle Ages to Enlightenment (3)
ENG 305 Survey of British Literature II: Romantics to the Present (3)
ENG 351 Survey of American Literature: To the Civil War (3)
ENG 352 Survey of American Literature: Civil War to the Present (3)

English Electives (24)

Choose 8 additional ENG classes at the 300–400-level

Total in Group 2: 45 Semester Credits

Minimum semester hours required for the B.A. in English: 120 hours.

Notes

1. Students must earn a grade of "C" or higher in all courses required for the major.
2. To earn a Bachelor of Arts degree in English, students must fulfill the requirements both of the major and of the University's General Education program. (Please see the Baccalaureate Degree Requirements in this Catalog.)
3. Students wishing to make timely progress toward graduation are urged to pay careful attention to all degree requirements.
4. In addition, when planning a schedule of courses, it is imperative to be aware of course prerequisites and the frequency with which courses are offered. This information is available in the course listings in this Catalog.
5. To ensure progress toward degree completion, students are urged to meet with an advisor each semester before registering.

English Minor

15 semester hours

Requirements:

Five 300-400-level ENG courses (15 semester credits)

Teaching English as a Second Language (TESOL) Certificate

Contact: Bela Conley-Ramsay (bela@hawaii.edu) (808) 932-7243

18 semester hours

Curriculum

- LING 102 Introduction to Linguistics (3)
- LING 121 Introduction to Language (3) **or**
LING 331 Language in Culture and Society (3)
- ENG 324 Modern English Grammar and Usage (3)
- ENG 350 Second Language Acquisition Theory (3)
- ENG 422 ESL Teaching Practicum (3)
- ENG 484 ESL Materials and Methods (3)

Note: Prospective candidates should note that Linguistics 102 and 121 are prerequisites for several of these courses and ENG/ESL 100 is a prerequisite for all English classes.

Environmental Studies/Science

Program Chairs:

Jonathan Price, Ph.D. (jpprice@hawaii.edu)
Kathryn Besio, Ph.D. (besio@hawaii.edu)

Web: hilo.hawaii.edu/depts/geography/

Social Sciences Division Office: UCB 308, 932-7100

BA in Environmental Studies

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

1. Core Courses

- BIOL 175 Biology I or BIOL 176 Biology II (3)
- BIOL 281 General Ecology (3)
- CHEM 124 General Chemistry I (3)
- CHEM 125 General Chemistry II (3)
- ENG 287 Rhetoric (3)
- ENSC 100 Introduction to Environmental Science **or**
GEOG 101 Geography and the Natural Environment (3)
- ENSC 385 Field Methods: Environmental Science (3)
- ENSC 495 Senior Seminar: Environmental Science (3)
- GEOG 326 Natural Resources (3)

2. Quantitative Methods: Choose **one course** from the three-credit courses listed below: (3)

- BIOL 280 Biostatistics
- GEOG 201 Interp Geog Data
- GEOG 280 Introduction to Geostatistics
- MARE 250 Statistical Applications in Geography
- MATH 121 Introduction to Statistics and Probability

3. Humans and the Environment: Choose **two courses** from the three-credit courses listed below: (6)

- ANTH 315 Ecological Anthropology
- ECON 380 Natural Resource and Environmental Economics
- GEOG 340 Intro to Land Use Planning
- GEOG 387 Literature of the Environment
- GEOG 436 Environmental Politics in Pacific
- GEOG 440 Community Planning
- PHIL 412 Philosophy of Nature
- POLS 335 Environmental Politics and Policy

4. Environmental Science: Choose **two courses** from the three-credit courses listed below: (6)

- BIOL/GEOG 309 Biogeography
- GEOG 319 Natural Hazards
- BIOL 381 Conservation Biology
- CHEM 241-241L Organic Chemistry I with Lab (4-credit course)
- CHEM 360 Environmental Chemistry
- GEOG 300 Climatology
- GEOG 301 Global Warming/ Climate Change (3) (NEW)

- GEOG 409 Landscape Ecology
- GEOL 300 Advanced Environmental Earth Science
- GEOL 342 Earth Surface Processes
- GEOL 360 Surface Water
- GEOL 460 Groundwater
- MARE 282 Global Change
- SOIL 304 Tropical Soils

5. Advanced Environmental Techniques: Choose *two courses*: (6)

- ANTH 481 Archaeometry
- FOR 202 Forestry and Natural Resources
- GEOG 382 Qualitative Research Methods in Geography (NEW)
- GEOG 441 Environmental Impact Assessment
- GEOG 470 Remote Sensing and Air Photo Interpretation
- GEOG 480 GIS and Visualization
- GEOG 481 Advanced Geo-Spatial Techniques
- GEOG 488 Advanced Geostatistics (3) (NEW)
- GEOL 445 GIS for Geology
- GEOL 450 Geological Remote Sensing
- ENSC 441 Environmental Impact Assessment
- ENSC 457 Vegetation of the Hawaiian Islands

Total in Group 2: 51–52 Semester Credits

Minimum semester hours required for the B.A. in Environmental Studies: 120 hours.

Notes

1. Students must earn at least a 2.0 GPA in courses required for the major.
2. At least 33 semester hours must be earned in courses at the 300–400-level.
3. MATH 121 in Group 2 above counts as a Quantitative Reasoning course in Group 1 above.
4. To earn a Bachelor of Arts degree in Environmental Studies, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the Baccalaureate Degree Requirements in this Catalog.)
5. Students should always check course prerequisites and the frequency with which courses are offered.
6. To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

BS in Environmental Science

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

1. Core Courses

- BIOL 175 Biology I (3) or BIOL 176 Biology II (3)
- BIOL 281 General Ecology (3)
- CHEM 124–124L General Chemistry I with Lab (4)
- CHEM 125–125L General Chemistry II with Lab (4)
- ENG 287 Rhetoric (3)
- ENSC 100 Introduction to Environmental Science (3) *or*
GEOG 101 Geography and the Natural Environment (3)
- ENSC 385 Field Methods: Environmental Science (3)

ENSC 495 Senior Seminar: Environmental Science (3)

MATH 205–206 Calculus I and II (8)

2. Quantitative Methods: Choose *one course* from the three-credits courses listed below: (3)

- BIOL 280 Biostatistics
- GEOG 201 Geographic Information
- GEOG 280 Introduction to Geostatistics
(course number changed from GEOG 380)
- MARE 250 Statistical Applications in Marine Science
- MATH 121 Introduction to Statistics and Probability

3. Human and the Environment: Choose *two courses* from the three-credit courses listed below: (6)

- ANTH 315 Ecological Anthropology
- ECON 380 Natural Resource and Environmental Economics
- GEOG 312 Food and Societies
- GEOG 326 Natural Resources
- GEOG 340 Intro to Land Use Planning
- GEOG 436 Environmental Policies in Pacific
- GEOG 440 Community Planning
- PHIL 412 Philosophy of Nature
- POLS 335 Environmental Politics and Policy

4. Environmental Science: Choose *three courses* from *one concentration* listed below: (9–11)

- **Biological Concentration**
 - o BIOL/GEOG 309 Biogeography
 - o BIOL 375 Biology of Microorganisms
 - o BIOL 381 Conservation Biology
 - o BIOL 481–481L Theory and Methods of Ecology and Evolution with Research Methods Lab
 - o ENSC 457 Vegetation of the Hawaiian Islands
 - o GEOG 409 Landscape Ecology
 - o SOIL 304 Tropical Soils
- **Physical Science Concentration**
 - o CHEM 141 Survey of Organic Chemistry
 - o CHEM 241-241L Organic Chemistry I with Lab (4)
 - o CHEM 360 Environmental Chemistry
 - o GEOG 300 Climatology
 - o GEOG 301 Global Warming/ Climate Change
 - o GEOG 319 Natural Hazards
 - o GEOL 300 Advanced Environmental Earth Science
 - o GEOL 342 Earth Surface Processes
 - o GEOL 360 Surface Water
 - o GEOL 460 Groundwater
 - o MARE 282 Global Change
 - o SOIL 304 Tropical Soils

5. Advanced Environmental Techniques: Choose *two courses*: (6–7)

- ANTH 481 Archaeometry
- FOR 202 Forestry and Natural Resources
- ENSC 441 Environmental Impact Assessment
- GEOG 470 Remote Sensing and Air Photo Interpretation
- GEOG 480 GIS and Visualization
- GEOG 481 Advanced Geo-Spatial Techniques
- GEOL 445 GIS for Geology
- GEOL 450 Geological Remote Sensing
- GEOG 382 Qualitative Research Methods in Geography
- GEOG 488 Advanced Geostatistics

Total in Group 2: 60–64 Semester Credits

Minimum semester hours required for the B.S. in Environmental Science: 120 hours.

Notes

1. Students must earn at least a 2.0 GPA in courses required for the major.
2. At least 29 semester hours must be earned in courses at the 300–400-level.
3. To earn a Bachelor of Science degree in Environmental Science, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the Baccalaureate Degree Requirements in this Catalog.)
4. Students should always check course prerequisites and the frequency with which courses are offered.
5. To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

Environmental Studies Certificate**24–25 semester hours**

Contact: Jonathan Price (jpprice@hawaii.edu) 932-7241

The Environmental Studies Certificate is a multi-disciplinary program that emphasizes a theoretical and applied approach to environmental and natural resource assessment, classification, problem or phenomenal mitigation, policy, and related issues. This certificate program includes courses in the social and natural sciences.

Requirements:**Group I. (18–19 semester hours)**

- GEOG 101 Geography and the Natural Environment (3) **or**
ENSC 100 Introduction to Environmental Science (3)
- CHEM 114 Introductory Chemistry (3) **or**
CHEM 124 General Chemistry I (4)
- GEOL 111 Physical Geology (3) **or** equivalent
- MARE 201 Oceanography (3) **or**
MARE/BIOL 360 Marine Resources (3)
- ECON 380 Natural Resource and Environmental Economics (3) **or**
POLS 335 Environmental Politics and Policy (3)
- GEOG 441 Environmental Impact Assessment (3)

Group II. (3 semester hours)

- Choose **one** of the following courses:
- BIOL 101 General Biology (3)
 - BIOL 175 Introductory Biology I (3)
 - BIOL 176 Introductory Biology II (3)

Group III. (3 semester hours)

- Choose **one** of the following courses:
- SOIL 304 Tropical Soils (3)
 - AG/GEOG 312 Food and Societies (3)
 - GEOG 326 Natural Resources (3)

Filipino Studies Certificate

See Languages

Geography**Department Chair:**

Kathryn Besio, Ph.D. (besio@hawaii.edu)

Social Sciences Division Office:

University Classroom Building 346, (808) 932-7099

Web: hilo.hawaii.edu/academics/geography/

Associate Professors:

Kathryn Besio, Ph.D.
Jon Price, Ph.D.

Assistant Professors:

Sasha Davis, Ph.D.
Ryan Perroy, Ph.D.

BA in Geography**Group 1. General Education Basic, Area, and Integrative Requirements.**

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)**1. Core Courses**

- GEOG 101 Geography and the Natural Environment (3) **or**
ENSC 100 Introduction to Environmental Studies (3)
- GEOG 103 Geography and Contemporary Society (3) **or**
GEOG 102 World Regional Geography (3)
- GEOG 201 Interpretation of Geographic Data (3)
- GEOG 280 Quantitative Methods in Geography (3) **or**
Equivalent Statistics Course (3)
- GEOG 495 Senior Seminar **or** GEOG 490 Senior Thesis (3)

2. Physical Geography: Choose two courses from the following list of three-credit courses: (6)

- GEOG 300 Climatology (3)
- GEOG 301 Global Warming/ Climate Change (3)
- GEOG 309 Biogeography (3)
- GEOG 319 Natural Hazards and Disasters (3)
- GEOG 320 Earth Surface Processes (3)
- GEOL 360 Surface Water (3)
- GEOG 409 Landscape Ecology (3)
- GEOL 460 Groundwater (3)
- ENSC 457/BIOL 457 Vegetation of Hawai'i
- GEOG 494 Special Topics

3. GIS and Spatial Techniques: Choose two courses from the following list of three-credit courses: (6)

- CS 150 Introduction to Computer Science 1 (3)
- GEOG 385 Field Methods in Geography and Environmental Science (3)
- GEOG 470 Remote Sensing and Air Photo Interpretation (3)
- GEOG 480 Geographic Information Systems and Visualization (3)
- GEOG 481 Advanced Geo-spatial Techniques (3)
- GEOG 488 Advanced Geostatistics (3)
- GEOG 494 Special Topics (3)

4. Human Geography and Planning: Choose two courses from the following list of three-credit courses: (6)

- GEOG 107 Hawai'i in the Pacific (3)

- GEOG 305 Themes in Regional Geography (3)
 - GEOG 312 Food and Societies (3)
 - GEOG 328 Cultural Geography (3)
 - GEOG 321 Geography of Economic Activity (3)
 - GEOG 325 Legal Geography (3)
 - GEOG 326 Natural Resources (3)
 - GEOG 329 Development Geographies (3)
 - GEOG 331 Tourism Geographies (3)
 - GEOG 332 Geography of Hawai'i (3)
 - GEOG 335 Geography of Oceania (3)
 - GEOG 340 Introduction to Land Use Planning (3)
 - GEOG 382 Qualitative Research Methods in Geography (3)
 - GEOG 387 Literature of the Environment (3)
 - GEOG 430 Gender, Place, and Environment (3)
 - GEOG 435 Senior Seminar in Pacific Studies (3)
 - GEOG 436 Environmental Politics in the Pacific (3)
 - GEOG 441 Environmental Impact Assessment (3)
 - GEOG 494 Special Topics (3)
 - GEOG 496 Planning Internship (3)
5. **Area of Specialization: Choose three additional 300–400-level courses from above areas (9). Two of those courses must be within the same area of specialization.**

Total in Group: 45 Semester Hours

Minimum total semester credits required for the B.A. in Geography: 120 hours.

Notes

1. Where appropriate, and with the approval of the Geography chairperson, one Special Topics course (GEOG 494) may be substituted for a course under Blocks I or II.
2. Students must earn at least a 2.0 GPA in courses required for the major.
3. At least 45 semester hours must be earned in courses at the 300–400-level.
4. To earn a Bachelor of Arts degree in Geography, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the Baccalaureate Degree Requirements in this Catalog.)
5. Students should always check course prerequisites and the frequency with which courses are offered.
6. To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

Geography Minor

21 Semester Hours

Required (9 semester hours):

- GEOG 101 Geography and the Natural Environment (3)
- GEOG 103 Geography and Contemporary Society (3)
- GEOG 201 Interpretation of Geographic Data (3)

and four additional courses (12 semester hours) in Geography at the upper-division level with at least one course from each of the following three blocks:

Block I: Physical Geography

- GEOG 300 Climatology (3)
- GEOG 309 Biogeography (3)
- GEOG 319 Natural Hazards and Disasters (3)
- GEOG 320 Earth Surface Processes (3)
- GEOG 409 Landscape Ecology (3)

Block II: Human Geography

- GEOG 312 Food and Societies (3)
- GEOG 321 Geography of Economic Activity (3)
- GEOG 328 Cultural Geography (3)
- GEOG 329 Development Geographies (3)

- GEOG 331 Tourism Geographies (3)
- GEOG 430 Gender, Place and Environment (3)

Block III: Analytical Techniques

- GEOG 385 Field Methods in Geography & Environmental Science (3)
- GEOG 441 Environmental Impact Assessment (3)
- GEOG 470 Remote Sensing and Air Photo Interpretation (3)
- GEOG 480 Geographic Information Systems and Visualization (3)
- GEOG 481 Advanced Geo-spatial Techniques (3)

Planning Certificate

Contact: Kathryn Besio (besio@hawaii.edu) 932-7253

18 semester hours

The Geography program also offers a Certificate in Planning. This is an optional program designed to complement the major in Geography. Non-geography majors may pursue the planning certificate with the approval of the department chair. Students accepted into the certificate program are required to obtain at least a C grade in each course.

Requirements:

Group I. (9 semester hours)

- GEOG 340 Principles of Land Use Planning (3)
- GEOG 440 Advanced Environmental Planning (3)
- GEOG 441 Environmental Impact Assessment (3)

Group II. (6 semester hours)

- Two upper-division electives approved by the planning advisor (6 semester hours)

Group III. (3 semester hours)

- GEOG 496 A one-semester internship with a private or public firm or agency (3 semester hours). (3)

The internship normally will be completed in the student's senior year. Up to two courses in the certificate program also may be counted as Geography major electives. For further details on the planning certificate program, contact any member of the Geography faculty.

Geology Minor

20 Semester Hours

Requirements:

- GEOG 111–111L Understanding the Earth with Lab (4)
- GEOG 112–112L History of the Earth and Its Life with Lab (4)
- and 12 additional** semester hours of GEOL courses. (At least six of the additional 12 semester hours must be at the 300–400-level.)

Note: Each course must be passed with a grade of "C" or better.

Earth and Space Science Minor

24 Semester Hours

Requirements:

- ASTR 110L General Astronomy Lab (1)
- ASTR 180 Principles of Astronomy I (3)
- ASTR 181 Principles of Astronomy II (3)
- ASTR/GEOL 352 Comparative Planetology (3)
- GEOG 111–111L Understanding the Earth with Lab (4)
- GEOG 112–112L History of the Earth and Its Life with Lab (4)
- GEOG 205 Geology of the Hawaiian Islands (3)
- and one** of the following courses:
 - GEOG 300 Climatology (3)
 - GEOG 450 Geological Remote Sensing (3)
 - GEOG 470 Remote Sensing and Air Photo Interpretation (3)

Geology

Department Chair:

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Jené Michaud, Ph.D.

Associate Professors:

James L. Anderson, Ph.D.

Steven Lundblad, Ph.D.

BA in Geology

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

GEOL 111–111L Understanding the Earth with Lab (4)

GEOL 112–112L History of the Earth and Its Life with Lab (4)

GEOL 212 Earth Materials I: Minerals (4)

GEOL 320 Earth Material II: Igneous/Metamorphic Rocks (4)

GEOL 495A–495B Seminar (2 semesters) (2)

ASTR 180 Principles of Astronomy I (3) **or**
MARE 201 Oceanography (3)

CHEM 114–114L Introductory Chemistry (4) (**See Note 3 below**)

MATH 115 Applied Calculus (3) (**See Note 5 below**)

PHYS 106–170L College Physics I with Lab (4) (**See Note 4 below**)

Two courses from the following list: (6-8)

▪ GEOL 330 Deformation of the Earth (4)

▪ GEOL 340 Sedimentary Processes (4)

▪ GEOL 342 Earth Surface Processes (3)

GEOL 370 Field Methods (3)

Six additional 300–400-level GEOL courses (Up to two of the six courses may be substituted from GEOG 300, 319, 470, MARE 360, 425, 461, and SOIL 304.) (18)

Total in Group 2: 56-58

Minimum semester hours required for the B.A. in Geology: 120 hours.

Notes

- All courses in Group 2, Major Requirements, must be completed with a grade of "C" or better.
- At least 36 semester hours must be earned in courses numbered 300–400.
- CHEM 124–124L may substitute for CHEM 114–114L.
- PHYS 170 may substitute for PHYS 106.
- MATH 205 may substitute for MATH 115.
- To earn a Bachelor of Arts degree in Geology, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the chapter on Baccalaureate Degree Requirements in the Catalog.)
- Students should always check course prerequisites and the frequency with which courses are offered. This information is found in Course Listings in the back of the Catalog.

- To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

BS in Geology

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

1. Required Courses from Geology

GEOL 111–111L Understanding the Earth with Lab (4)

GEOL 112–112L History of the Earth and Its Life with Lab (4)

GEOL 212 Earth Materials I: Minerals (4)

GEOL 320 Earth Material II: Igneous/Metamorphic Rocks (4)

GEOL 330 Deformation of the Earth (4)

GEOL 340 Sedimentary Processes (4)

GEOL 342 Earth Surface Processes (3)

GEOL 370 Field Methods (3)

GEOL 495A–495B Seminar (2 semesters) (2)

And twelve additional semester hours in
GEOL 300–400-level courses (12)

2. Required Courses from Related Fields

CHEM 124–124L General Chemistry I with Lab (4)

CHEM 125–125L General Chemistry II with Lab (4)

ENG 225 Writing for Science and Technology (3)

MATH 205 Calculus I (4)

MATH 206 Calculus II (4)

PHYS 170–170L General Physics I: Particles and Waves with Lab (5)

PHYS 171–171L General Physics II: Electricity and Magnetism with Lab (5)

Group 2 Total: 73 Semester Hours

Minimum semester hours required for the B.S. in Geology: 120 hours.

Notes

- All Geology Courses in Group 2, Major Requirements, above must be completed with a grade of "C" or better.
- Students must earn a 2.0 GPA in all required courses listed in Group 2, Major Requirements, above.
- At least 32 semester hours must be earned in courses numbered 300–400. Courses in Group 2 supply 32 of these credits.
- Students preparing for graduate school should consider taking a summer field course in Geology and possibly MATH 300 (Ordinary Differential Equations), CS 150 (Introduction to Computer Science), or PHYS 260 (Computational Physics and Astronomy).
- To earn a Bachelor of Science degree in Geology, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the chapter on Baccalaureate Degree Requirements in the Catalog.)
- Students should always check course prerequisites and the frequency with which courses are offered.
- To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

History

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Web: hilo.hawaii.edu/academics/history/

Professor:

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Associate Professors:

Michael J. Bitter, Ph.D.

Kerri A. Inglis, Ph.D.

Assistant Professors:

Vera L. Parham, Ph.D.

Yucheng Qin, Ph.D.

Jeffrey A. Smith, Ph.D.

Emeritus Professor:

Sandra Wagner-Wright, Ph.D.

BA in History

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The History major requires certain courses in three GE categories:

- World Cultures (HIST 151, 152 are required) (6)
- Social Sciences (GEOG 102 or 103 is required plus 3 more semester hours) (6)
- Natural Sciences (CS 101 is required plus 4 more semester hours) (7)

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

1. Required Core Courses (24)

HIST 300 Historical Methods (3)

One 300-level course in European History. (3) *Choose from:*

- HIST 319 European Women's History
- HIST 322 The Bible and History
- HIST 323 Ancient Greece
- HIST 341 Ancient Rome
- HIST 353 English History & Shakespeare
- HIST 354 Introduction to Islamic History
- HIST 356 Medieval Europe
- HIST 357 Renaissance & Reformation
- HIST 358 Women in Christianity
- HIST 359 Christianity & the Western Tradition
- HIST 365 War and Empire in Eighteenth-Century Europe
- HIST 375 Europe in the Nineteenth Century
- HIST 385 Europe in the Era of World War I
- HIST 395 Europe in the Era of World War II

One 300-level course in East Asian History. (3) *Choose from:*

- HIST 309 History of Asian Religions
- HIST 310 History of Japan I: Early Japan
- HIST 311 History of Japan II: Tokugawa to Meiji
- HIST 312 History of China I: Early China

- HIST 313 History of China II: Qing
- HIST 314 History of Japan III: 20th Century to Present
- HIST 318 History of China III: 20th Century to Present
- HIST 392 Japanese Women

One 300-level course in U.S. History. (3) *Choose from:*

- HIST 340 History of Religion in America
- HIST 360 American Women's History
- HIST 378 North American Indigenous Cultural Survival
- HIST 380 United States 1620-1789
- HIST 381 United States 1790-1865
- HIST 382 United States 1866-1929
- HIST 383 United States 1930-1980

One 300-level course in Pacific History. (3) *Choose from:*

- HIST 316 Pacific History I
- HIST 317 Pacific History II
- HIST 321 History of Australia and New Zealand
- HIST 324 Militarization in the Pacific
- HIST 331 World War II in the Pacific

One 300-level course in Hawaiian History. (3) *Choose from:*

- HIST 332 Hawaiian Kingdom
- HIST 333 Twentieth-Century Hawai'i
- HIST 336 Disease & Medicine in Hawai'i

HIST 490 Historiography and Research Methods

HIST 491 Senior Thesis

2. Area Specialization Requirement (All Area Specializations require 12 upper division semester hours, including three 300-400 level courses and one 400-level course.) **Students must select one area of specialization.** All courses below are three semester hours of credit.

▪ East Asia. *Choose from:*

- o HIST 309 History of Asian Religions
- o HIST 310 History of Japan I: Early Japan
- o HIST 311 History of Japan II: Tokugawa to Meiji
- o HIST 312 History of China I: Early China
- o HIST 313 History of China II: Qing
- o HIST 314 History of Japan III: 20th Century to Present
- o HIST 318 History of China III: 20th Century to Present
- o HIST 392 Japanese Women
- o HIST 420 Mao
- o HIST 485 Seminar in World History

▪ Europe. *Choose from:*

- o HIST 319 European Women's History
- o HIST 322 The Bible and History
- o HIST 323 Ancient Greece
- o HIST 341 Ancient Rome
- o HIST 353 English History & Shakespeare
- o HIST 354 Introduction to Islamic History
- o HIST 356 Medieval Europe
- o HIST 357 Renaissance & Reformation
- o HIST 358 Women in Christianity
- o HIST 359 Christianity & the Western Tradition
- o HIST 365 War and Empire in 18th Century Europe
- o HIST 375 Europe in the Nineteenth Century
- o HIST 385 Europe in the Era of World War I
- o HIST 395 Europe in the Era of World War II
- o HIST 425 History of Russia to 1700
- o HIST 435 Russia since Peter the Great
- o HIST 445 European Imperialism
- o HIST 455 European Intellectual History Since 1789

- o HIST 459 Germany Since Frederick the Great
- o HIST 485 Seminar in World History
- o HIST 486 Women in Ancient European Civilization
- **Hawai'i. Choose from:**
 - o HIST 332 Hawaiian Kingdom
 - o HIST 333 Twentieth-Century Hawai'i
 - o HIST 336 Disease & Medicine in Hawai'i
 - o HIST 401 Women in Hawaiian History
 - o HIST 480 Race & Ethnicity in the Pacific
 - o HIST 485 Seminar in World History
- **Pacific. Choose from:**
 - o HIST 316 Pacific History I
 - o HIST 317 Pacific History II
 - o HIST 321 History of Australia and New Zealand
 - o HIST 331 World War II in the Pacific
 - o HIST 411 Family & Gender in Oceania
 - o HIST 480 Race & Ethnicity in the Pacific
 - o HIST 481 Land and Sovereignty in the Pacific
 - o HIST 485 Seminar in World History
- **United States. Choose from:**
 - o HIST 340 History of Religion in America
 - o HIST 360 American Women's History
 - o HIST 380 United States 1620-1789
 - o HIST 381 United States 1790-1865
 - o HIST 382 United States 1866-1929
 - o HIST 383 United States 1930-1980
 - o HIST 378 North American Indigenous Cultural Survival
 - o HIST 470 United States in the World 1865-2003
 - o HIST 471 US Constitutional History

Total in Group 2: 36 Semester Hours

Minimum semester hours required for the B.A. in History: 120 hours.

Notes

1. The following courses in Group 1, General Education Requirements, must be passed with a "C-" or better grade:
 - English Composition
 - Quantitative Reasoning
 - HIST 151
 - HIST 152
 - GEOG 102 or 103
 - CS 101
2. A minimum GPA of 2.8 must be maintained in upper-division (300-400 level) History courses.
3. At least 45 semester hours must be earned in courses numbered 300-400.
4. To earn a Bachelor of Arts degree in History, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the Baccalaureate Degree Requirements in this Catalog.)
5. Students should always check course prerequisites and the frequency with which courses are offered. This information is found in the Course Listings in this Catalog.
6. To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

History Minor

15 Semester Hours

A total of 15 semester hours of History courses at the 200, 300, or 400 level, at least 12 of which must be completed at the **300 or 400 level**

Japanese Studies

See *Languages*

Kinesiology and Exercise Sciences

Department Chair:

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L.A. Gotshalk, Ph.D.

Assistant Professors:

Emanuele D'Artibale, Ph.D.

Robin Takahashi, Ph.D.

BA in Kinesiology and Exercise Sciences

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

Two one-semester-hour KES activity courses of choice (3)

KES 201 School Health Problems (2)

KES 204 Introduction to Coaching Athletics (2)

KES 206 Basic Human Movement (3)

KES 207 Basic Human Nutrition (3)

KES 208 Elementary Tests and Measurements (3)

KES 209 Data and Stats in Kinesiology (3)

KES 234 Care and Prevention of Athletic Injuries (3)

KES 306 Advanced Human Movement (3)

KES 310 Basic Motor Learning (3)

KES 320 Drug Awareness (3)

KES 334 Advanced Care and Prevention of Athletic Injuries (3)

KES 343 Musculoskeletal Anatomy (3)

KES 344 Musculoskeletal Physiology (3)

KES 370 Sport Psychology (3)

KES 330 Applied Motor Learning **or** 380 Applied Sport Psychology (3)

KES 443 Adapted Physical Education (3)

BIOL 125 Introduction to Cell and Molecular Biology (3)

BIOL 243–243L Human Anatomy and Physiology I with Lab (4) **or**

KES 260 Exercise Science Anatomy and Physiology I (3)

BIOL 244–244L Human Anatomy and Physiology II with Lab (4) **or**

KES 261 Exercise Science Anatomy and Physiology II (3)

PSY 100 Survey of Psychology (3)

Total in Group 2: 62 Semester Hours

Total Semester Hours Required For The B.A. in Kinesiology and Exercise Sciences: 120.

Notes

1. All courses in **Group 2, Major Requirements**, must be completed with a grade of "C-" or better except for three Activity Courses, BIOL 125, 243, 243L, 244, 244L and PSY 100.
2. An overall GPA of 2.0 in the major is required.
3. At least 45 semester hours must be earned in courses numbered 300–400.
4. To earn a Bachelor of Arts degree in Kinesiology and Exercise Sciences, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements.

- (Please see the Baccalaureate Degree Requirements in this Catalog.)
- Students should always check course prerequisites and the frequency with which courses are offered.
 - To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

BA in Kinesiology and Exercise Sciences—Health Promotion

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

Two one-semester-hour KES activity courses of choice (2)

KES 202 Health Promotion (3)

KES 206 Basic Human Movement (3)

KES 207 Basic Human Nutrition (3)

KES 208 Elementary Tests and Measurements (3)

KES 209 Data and Stats in Kinesiology (3)

KES 234 Care and Prevention of Athletic Injuries (3)

KES 260 Exercise Science Anatomy and Physiology I (3)

KES 261 Exercise Science Anatomy and Physiology II (3)

KES 306 Advanced Human Movement (3)

KES 310 Basic Motor Learning (3)

KES 320 Drug Awareness (3)

KES 343 Musculoskeletal Anatomy (3)

KES 344 Musculoskeletal Physiology (3)

KES 370 Sport Psychology (3)

KES 399 Health Promotion Practicum (3)

KES 443 Adapted Physical Education (3)

BIOL 125 Introduction to Cell and Molecular Biology (3)

PSY 100 Survey of Psychology (3)

PSY 380 Health Psychology (3)

NURS 350 Transcultural Care and Health Promotion (3)

NURS 372 Spirituality in Health Care (3)

Total in Group 2: 65 Semester Hours

Minimum semester hours required for the B.A. in Kinesiology and Exercise Sciences—Health Promotion: 120 hours.

Notes

- All courses in **Group 2, Major Requirements**, must be completed with a grade of "C-" or better except for three Activity Courses, BIOL 125, 243, 243L, 244, 244L and PSY 100.
- An overall GPA of 2.0 in the major is required.
- At least 45 semester hours must be earned in courses numbered 300–400.
- To earn a Bachelor of Arts degree in Kinesiology and Exercise Sciences, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the Baccalaureate Degree Requirements in this Catalog.)
- Students should always check course prerequisites and the frequency with which courses are offered.
- To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

Languages

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Yoshiko Okuyama, Ph.D.

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Jiren Feng, Ph. D.

Rodney Jubilado, Ph.D.

BA in Japanese Studies

Japanese Studies Program Coordinator:

Masafumi Honda, Ed.D. (masafumi@hawaii.edu)

Group 1. General Education Basic, Area, and Integrative Requirements

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

Required Core Courses (6)

LANG/JPST 200 Introduction to Japanese and Chinese Studies (3)

JPNS/JPST 495 Japanese Studies Seminar (3)

Language Core Courses

For Non-Native speakers of Japanese only:

JPNS/JPST 101–102, 101S-102/102S, **or** 107 Elementary Japanese (7-8)

JPNS/JPST 201–202 Intermediate Japanese (8)

JPNS/JPST 301–302 Third-Year Japanese (6)

For Native speakers of Japanese only:

LING 102 Introduction to Linguistics (3)

LING/ANTH 121 Introduction to Language (3)

LING/ANTH 321 Morphology and Syntax (3)

LING/ENG 324 Modern English Grammar and Usage (3)

JPNS/JPST 425 Translation Workshop (3)

Two upper division Writing Intensive Courses (6)

Japan-related Courses (18) semester hours required, **six different courses** selected from **at least two of the following three blocks:**

▪ Block I.

HIST/JPST 310 History of Japan I: Early Japan (3)

HIST/JPST 311 History of Japan II: Tokugawa to Meiji (3)

HIST/JPST 314 History of Japan III: 20th Century to present (3)

POLS/JPST 353 Politics of Japan (3)

ANTH/JPST 356 Japan (3)

ANTH/JPST 358 Japanese Immigrants (3)

JPNS/JPST 359 Japanese in Hawai'i (3)

JPNS/JPST 370 Language, Culture and Identity of Japan (3)

JPNS/JPST 494 Special Topics in Japanese Studies (1-3)

▪ **Block II.**

- JPST 315 East Asian Religions (3)
- JPNS/JPST/ENG 365 Japanese Literature in English (3)
- JPNS/JPST 370 Language, Culture and Identity of Japan (3)
- MUS/JPST 375 Japanese Music (3)
- JPNS/JPST 380 Japanese Mythology in Film (3)
- ART/JPST 381 Art of Japan (3)
- JPNS/JPST 382 Gender & Minorities in Japanese Comics (Manga) (3)
- JPNS/JPST/DRAM 383 Japanese Theatre and Performance (3)
- JPNS/JPST 385 Postwar Japan through Film and Literature (3)
- PHIL/JPST 430 Philosophy of Zen (3)
- PHIL/JPST 450 Mahayana Buddhist Philosophy (3)
- COM/JPST 457 Japanese Culture and Communication (3)
- JPNS/JPST 494 Special Topics in Japanese Studies (1-3)

▪ **Block III.**

- JPST 340 Japanese Composition (3)
- JPNS/JPST 345 Methods for Teaching Japanese (3)
- JPNS/JPST 401 Fourth-Year Japanese I (3)
(**Non-Native** speakers only)
- JPNS/JPST 402 Fourth-Year Japanese II (3)
(**Non-Native** speakers only)
- LANG/JPST/CHNS 410 History of Chinese Characters (3)
- JPNS/JPST 425 Translation Workshop (3)
- JPNS/JPST/LING 451 Structure of Japanese I (3)
- JPNS/JPST/LING 452 Structure of Japanese II (3)
- JPNS/JPST 481 Readings in Modern Japanese Literature (3)
- JPNS/JPST 494 Special Topics in Japanese Studies (1-3)

Total in Group 2: 45-46 Semester Hours

Minimum semester hours required for the B.A. in Japanese Studies:
120 hours.

Notes

1. A 2.0 GPA or better is required in courses that are required for the major.
2. At least 45 total semester hours must be earned in upper division courses (300-level courses or above) for graduation.
3. To earn a Bachelor of Arts degree in Japanese Studies, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the Baccalaureate Degree Requirements in this Catalog.)
4. Students should always check course prerequisites and the frequency with which courses are offered.
5. To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

Japanese Studies Minor

21-22 Semester Hours

Required Core

- LANG/JPST 200 Introduction to Japanese and Chinese Studies (3)

Language Core

- JPNS/JPST 101–102, 101S-102, **or** 107 Elementary Japanese (7-8)
- JPNS/JPST 201–202 Intermediate Japanese (8)

And three (3) semester hours chosen from any Japan-related JPST courses

Interested students must see the Japanese Studies advisor during the first two years of language study.

Chinese Studies Certificate

17 Semester Hours

Required Core

- LANG/JPST 200 Introduction to Japanese and Chinese Studies (3)

Language Core

- CHNS 101–102 Elementary Japanese **or**
- CHNS 107 Accelerated Elementary Chinese (8)

And choose six (6) semester hours chosen from the following:

- ART 380 Art of China (3)
- CHNS 200 Conversational Chinese for Business (3)
- CHNS 250 Chinese Folklore and Symbolism (3)
- CHNS 260 Chinese Culture through Film (3)
- CHNS 364 Chinese Literature in English (3)
- CHNS 381 Chinese Culture through Architecture (3)
- CHNS 410 History of Chinese Characters (3)
- HIST 312 History of China I: Early China (3)
- HIST 313 History of China II: Qing (3)
- HIST 318 History of China III: 20th Century to Present (3)
- PHIL 301 History of Chinese Philosophy (3)
- PHIL 435 Philosophy of Tao (3)
- POLS 351 Politics of China (3)

Filipino Studies Certificate

17 Semester Hours

Required Core:

- FIL 101 Elementary Filipino I (4)
- FIL 102 Elementary Filipino II (4)
- ANTH 354 Filipino Culture (3)

Electives:

Culture-based track

Choose 6 semester hours from the following:

- ANTH 323 Culture and Society Change (3)
- FIL 200 Intermediate Conversation Filipino (3)
- FIL 394 Special Topics in Filipino Studies
- PSY 360 Cross Cultural Psychology (3)
- POLS 332 Politics of Race and Gender

Natural Science-based track

Choose 6 semester hours from the following:

- AG 230 Sustainable Agriculture (3)
- NRES 230 Philippine Environment and Natural Resources (3)
- NRES 394 Special Topics in Subject Matter (3)

Culture and Natural Science- Combo

Choose 6 semester hours from the following:

- ANTH 323 Culture and Society Change (3)
- FIL 200 Intermediate Conversational Filipino (3)
- NRES 230 Philippines Environment & Natural Resources (3)

Liberal Studies

Coordinator:

Susan Brown (susanb@hawaii.edu)
Interim Associate Dean, CAS; Professor of Psychology

Office: UCB 304, (808) 932-7095

The Liberal Studies Program is designed for the student in the College of Arts and Sciences (CAS) who wishes to (1) study a particular problem or theme through a multi-disciplinary constellation of courses, or (2) create an academic major-equivalent for which there are relevant courses but for which there is no approved degree program.

The major-equivalent must be an academically sound, interdisciplinary course of study with thematic integrity and continuity. A student seeking a Liberal Studies degree must work closely with an academic advisor to formulate the particular course of study to ensure academic substance and rigor.

Any student in good academic standing (2.0 GPA or better) may apply for admission to the Liberal Studies degree program. At the time that the degree proposal is submitted to the CAS Faculty Senate, a student must have at least 21 more credits of course work still to undertake in the major-equivalent beginning with the subsequent semester or term.

An application form for the major-equivalent must be completed, which will include the following:

1. a statement addressing the student's educational goals as embodied in the proposal for a Liberal Studies major-equivalent;
2. the educational goals for the proposed program;
3. an explanation of why these goals cannot be achieved through an existing major program;
4. a justification of the courses that will comprise the major-equivalent, which have a minimum of 33 semester hours, of which at least 24 hours must be in upper-division courses.

The student will select a faculty advisor from among UH Hilo faculty, who will work with the student to design the program of courses and will provide a memo endorsing the academic rigor and coherence of the proposed program of courses.

Students pursuing the Liberal Studies major equivalent must complete all UH Hilo requirements in the General Education Basic, Area, and Integrative categories and all other graduation requirements applying to students at UH Hilo, including the baccalaureate degree requirements.

The application form must be approved by the Faculty Advisor, the Liberal Studies Coordinator, the College of Arts and Sciences Curriculum Review Committee and Dean. The form must be submitted to the Liberal Studies Coordinator no later than **November 1 for the fall semester or April 1 for the spring semester**. Once the proposal is accepted, the student should meet with the academic advisor each semester before registering.

Marine Science

Department Chair:

Misaki Takabayashi, Ph.D. (misakita@hawaii.edu)

Natural Sciences Division Office:

Life Sciences 2, (808) 932-7507

Web: hilo.hawaii.edu/academics/marinesci/

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Misaki Takabayashi, Ph.D.
Jason Turner, Ph.D.
Tracy Wiegner, Ph.D.

Assistant Professor:

Steven Colbert, Ph.D.

Instructors:

Michael L. Childers, M.Ed.
Lisa Parr, M.Env.St.

Affiliate Faculty:

Lisa Muehlstein, Ph.D.

Emeritus Faculty:

Walter C. Dudley, Ph.D.

Educational Specialist:

Jill Grotkin, B.S.

BA in Marine Science

Group 1. General Education Basic, Area, and Integrative Requirements

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements

1. Required Courses from Marine Science:

MARE 171–171L Marine Biology—Diversity (4)
MARE 172 Marine Biology—Cellular Processes (3)
MARE 201–201L Oceanography (5)
MARE 250 Statistical Applications in Marine Science (3)
MARE 265 Marine Ecology and Evolution (3)
MARE 282 Global Change (3)
MARE 350–350L Coastal Methods and Analyses (5) **or**
MARE 353-353L Pelagic Methods and Analyses (5)

And **one sequence** from the following:

- MARE 470 Senior Thesis (3) **and** MARE 471 Senior Thesis Report (3)
- MARE 480 Senior Internship (3) **plus** 3 semester hours of MARE electives at the 300-400 level
- MARE 495 Senior Seminar **plus** 3 semester hours of MARE Electives at the 300-400 level

2. Required Courses from Related Fields:

CHEM 124–124L General Chemistry I (4)
CHEM 125–125L General Chemistry II (4)
PHYS 106–170L College Physics I (4)
MATH 115 (3) **or** 205 Applied Calculus **or** Calculus I (4)
COM 251 Public Speaking (3)

ENG 225 Writing for Science and Technology (3), **or**
ENG 287 Introduction to Rhetoric

3. Electives: 9 Semester hours from Group 1 and 9 semester hours from Group 2

Group 1 Electives: Choose **9 semester hours** from the following MARE courses, 6 of which must be 300-level or above:

- MARE 240 Small Boat Operations in Research (3)
- MARE 264 Quantitative Underwater Ecological Survey Techniques (QUEST) (3)
- MARE 310 The Atoll Ecosystem (3)
- MARE 325 Coral Reef Ecology (3)
- MARE 350-350L (5) Coastal Methods and Analyses **or** 353-353L Pelagic Methods and Analyses (5)
- MARE 360 Marine Resources (3)
- MARE 364 Advanced QUEST (3)
- MARE 366 Tropical Marine Research Investigations (3)
- MARE 371–371L Biology of Marine Invertebrates and Lab (4)
- MARE 372–372L Biology of Marine Plants and Lab (4)
- MARE 390–390L Biology of Marine Mammals (4)
- MARE 394A–Z Special Topics in Marine Science (1–3)
- MARE 405 Watersheds (3)
- MARE 410 Marine Debris in the Pacific (3)
- MARE 434 Teaching Marine Science (3)
- MARE 435 Marine Field Experience for Teachers (3)
- MARE 440 Physical Oceanography (3)
- MARE 444 Biological Oceanography (3)
- MARE 445 Marine Microbial Ecology (3)
- MARE 446 Phytoplankton Ecology (3)
- MARE 446L Phytoplankton Ecology (1)
- MARE 460 Marine Conservation (3)
- MARE 461 Geological Oceanography (3)
- MARE 484 Biology of Fishes (3)
- MARE 484L Biology of Fishes Lab (1)
- MARE 488 Ku'ula: Integrated Science (3)
- MARE 490–490L (4) Sea Turtle Conservation and Lab
- MARE 494A–Z (1-3) Special Topics in Marine Science

Group 2 Electives: Choose **9 semester hours** from the following MARE courses, 6 of which must be 300-level or above:

- AG 215 Agro-Environmental Chemistry and Lab (3)
- AGECE 380 Environmental Policy and Management of Hawaiian Natural Resources (3)
- AGEN 400 Aquacultural Engineering (4)
- ANTH 447 Marine Anthropology: Fisheries in Oceania (3)
- AQUA 262 Introduction to Aquaculture (3)
- AQUA 352 Aquaculture of Fishes(3)
- AQUA 352L Aquaculture of Fishes Lab (1)
- AQUA 353 Invertebrate & Algae Culture (3)
- AQUA 353L Cultures of Invertebrates Lab (1)
- AQUA 425, 425L Water Quality & Aquatic Productivity and Lab (4)
- AQUA 466 Fisheries Science (3)
- BIOL 275 Fundamentals of Microbiology (3)
- BIOL 275L Microbiology Lab (1)
- BIO 309 Biogeography (3)
- BIOL 357 Evolution (3)
- BIOL 357L Evolutionary Genetics Lab (1)
- BIOL 375 Biology of Microorganisms (3)
- BIOL 375L Biology of Microorganisms Lab (1)
- BIOL 381 Conservation Biology (3)
- BIOL 437 Marine Mammal Behavior (3)
- BIOL 443 Ecological Animal Physiology (3)
- BIOL 466 Genetics (3)

- BIOL 466L Genetics lab (2)
- BIOL 467 Ecological Genetics (3)
- CHEM 487 Environmental Toxicology (3)
- COM 344 Sustainability, Communication, and Culture (3)
- COM 352 Communication in Small Groups (3)
- COM 354 Communication in Innovation (3)
- COM 441 Leadership and Communication (3)
- COM 444 Public Relations (3)
- CS 200 Web Technology (3)
- CS 300 Web Site Management (3)
- ECON 380 Natural Resource and Environmental Economics (3)
- ENG 275 Literature of the Earth (3)
- ENG 387 Literature of the Environment (3)
- ENG 487 Technical Writing (3)
- ENSC 436/GEOG 436 Environment and Politics in the Pacific (3)
- ENSC 441/GEOG 441 Environmental Impact Assessment (3)
- GEOG 300 Climatology (3)
- GEOG 309 Biogeography (3)
- GEOG 319 Natural Hazards and Disasters (3)
- GEOG 326 Natural Resources (3)
- GEOG 331 Tourism Geographies (3)
- GEOG 340 Principles of Land Use Planning (3)
- GEOG 409 Principles of Landscape Ecology (3)
- GEOG 440 Advanced Environmental Planning (3)
- GEOG 470 Remote Sensing and Air Photo Interpretation (3)
- GEOG 480 Geographic Information Systems & Computer Mapping (3)
- GEOL 250 Geology of the Hawaiian Islands (3)
- GEOL 344 Coastal Geology (3)
- GEOL 360 Surface Water (3)
- GEOL 445 GIS for Geology (3)
- GEOL 460 Groundwater (3)
- HORT 263 Hydroponics (3)
- MATH 407 Intro To Numerical Analysis I (3)
- MATH 408 Intro To Numerical Analysis II (3)
- NRES 230 Philippines Environment & Nat Resources (3)
- NRES 320 Environ Issues in Asia-Pacific (3)
- NRES 410 Invasive Species & Ecosystems (3)
- NRES 420 Hydrology and Watershed Mgmt (3)
- NRES 425 Marine Biogeochemistry (3)
- NRES 430 GIS Application in Nat Res Mgt (3)
- NRES 455 Pac Climate Change Adaptation (3)
- PHIL 323 Professional Ethics (3)
- PHIL 390 History & Phil of Science (3)
- PHIL 392 Biology & Philosophy (3)
- POLS 342 International Law (3)
- NRES 320 Environmental Issues in Asia-Pacific (3)
- PHIL 323 Professional Ethics (3)
- POLS 335 Environmental Politics and Policy (3)
- PSY 323 Community Psychology (3)
- PSY 335 Animal Psychology (3)
- PSY 335L Animal Psychology Lab (1)
- PSY 369 Evolutionary Psychology (3)
- PSY 422 Psychology of Sustainability (3)
- PSY 436 Animal Cognition (3)
- PSY 437 Marine Mammal Behavior (3)
- SOC 305 Organizational Theory and Analysis (3)

Group 3 Electives including enough 300/400-level semester hours to meet university baccalaureate degree requirements for this major (see Note 2 below).

Total: 27-28 credits

Group 4 Writing Intensive and Hawaiian/Asian/Pacific Courses

Three Writing Intensive courses (one 300 level or above) and three semester hours of H/A/P courses are required for graduation.

Total: Varies

Minimum semester hours required for the B.A. in Marine Science: 120 hours.

Notes:

1. Students must earn a minimum grade of "C-" in all required courses and prerequisite courses.
2. The upper division credits needed for graduation for all degrees in Marine Science are met in the process of completing the degrees.
3. To earn a Bachelor of Arts degree in Marine Science, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the Baccalaureate Degree Requirements in this catalog.)
4. Students should always check course prerequisites and the frequency with which courses are offered.
5. To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

BS in Marine Science**Group 1. General Education Basic, Area, and Integrative Requirements.**

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements**1. Required Courses from Marine Science**

MARE 171–171L Marine Biology - Diversity
 MARE 172 Marine Biology–Cellular Processes
 MARE 201–201L Oceanography
 MARE 250 Statistical Applications in Marine Science
 MARE 265 Marine Ecology and Evolution
 MARE 350–350L Coastal Methods and Analyses **or** MARE 353–353L Pelagic Methods and Analyses
 MARE 425 Chemical Oceanography
 MARE 440 Physical Oceanography
 MARE 461 Geological Oceanography

and one sequence from the following:

- MARE 470 Senior Thesis AND MARE 471 Senior Thesis Report
- MARE 480 Senior Internship PLUS 3 semester hours of MARE Electives at the 300-400 level
- MARE 495 Senior Seminar PLUS 3 semester hours of MARE Electives at the 300-400 level

2. Required Courses from Related Fields

CHEM 124–124L General Chemistry I
 CHEM 125–125L General Chemistry II
 CHEM 241–241L Organic Chemistry I
 CHEM 242–242L Organic Chemistry II
 GEOL 111 Understanding the Earth
 PHYS 170–170L College Physics I
 PHYS 171–171L College Physics II
 MATH 205 Calculus I
 MATH 206 Calculus II
 COM 251 Public Speaking

ENG 225 Writing for Science and Technology, **or**
 ENG 287 Introduction to Rhetoric

3. Required Electives: Choose 9 semester hours from the following courses

- MARE 240 Small Boat Operations in Research (3)
- MARE 264 Quantitative Underwater Ecological Survey Techniques (QUEST) (3)
- MARE 282 Global Change (3)
- MARE 310 The Atoll Ecosystem (3)
- MARE 325 Coral Reef Ecology (3)
- MARE 350 Coastal Methods and Analyses (5) **or** MARE 353 Pelagic Methods and Analyses (5)
- MARE 360 Marine Resources (3)
- MARE 364 Advanced QUEST (3)
- MARE 366 Tropical Marine Research Investigations (3)
- MARE 371–371L (4) Biology of Marine Invertebrates and Lab
- MARE 372–372L (4) Biology of Marine Plants and Lab
- MARE 390–390L (4) Biology of Marine Mammals and Lab
- MARE 394A–Z (1–3) Special Topics in Marine Science
- MARE 405 Watersheds (3)
- MARE 410 Marine Debris in the Pacific (3)
- MARE 434 Teaching Marine Science (3)
- MARE 435 Marine Field Experience for Teachers (3)
- MARE 440 Physical Oceanography (3)
- MARE 444 Biological Oceanography (3)
- MARE 445 Marine Microbial Ecology (3)
- MARE 446 Phytoplankton Ecology (3)
- MARE 446L Phytoplankton Ecology Lab (1)
- MARE 460 Marine Conservation (3)
- MARE 484 Biology of Fishes (3)
- MARE 484L Biology of Fishes Lab (1)
- MARE 488 Ku'ūla: Integrated Science (3)
- MARE 490–490L Sea Turtle Conservation and Lab (4)
- MARE 494A–Z Special Topics in Marine Science (1–3)
- AGEN 400 Aquacultural Engineering (4)
- AQUA 262 Introduction to Aquaculture (3)
- AQUA 425–425L Water Quality and Aquatic Productivity & Lab (4)
- AQUA 466 Fisheries Science (3)
- ECON 380 Natural Resource and Environmental Economics (3)
- GEOG 340 Principles of Land Use Planning (3)
- GEOG 440 Advanced Environmental Planning (3)
- GEOG 470 Remote Sensing and Air Photo Interpretation (3)
- GEOG 480 Geographic Information Systems and Visualization (3)
- GEOL 344 Coastal Geology (3)
- POLS 335 Environmental Politics and Policy (3)

Minimum semester hours required for the B.S. in Marine Science: 120 hours.

Notes:

1. Students must earn a minimum grade of C- in all required courses and prerequisite courses.
2. Upper division credits needed for graduation with a B.S. degree in Marine Science are 9.
3. To earn a Bachelor of Arts degree in Marine Science, students must fulfill the requirements for the major AND meet all of the University's other baccalaureate degree requirements. (Please see the chapter on Baccalaureate Degree Requirements in the Catalog.)
4. Students should always check course prerequisites and the frequency with which courses are offered. This information is found in Course Listings in the back of the Catalog.
5. To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

Marine Science Minor

27 semester hours in Marine Science

Required Courses from Marine Science (15 semester hours)

- MARE 171 Marine Biology-Diversity (3)
- MARE 172 Marine Biology-Cellular Processes (3)
- MARE 201 Oceanography (3)
- MARE 265 Marine Ecology and Evolution (3)
- MARE 282 Global Change (3)

Electives: choose 12 semester hours from the following courses

- MARE 240 Small Boat Operations in Research (3)
- MARE 264 Quantitative Underwater Ecological Survey Techniques (QUEST) (3)
- MARE 310 The Atoll Ecosystem (3)
- MARE 325 Coral Reef Ecology (3)
- MARE 350–350L Coastal Methods and Analysis with Lab (5) or MARE 353–353L Pelagic Methods and Analysis with Lab (5)
- MARE 360 Marine Resources (3)
- MARE 364 Advanced QUEST (3)
- MARE 366 Tropical Marine Research Investigations (3)
- MARE 371–371L Biology of Marine Invertebrates with Lab (4)
- MARE 372–372L Biology of Marine Plants with Lab (4)
- MARE 390–390L Biology of Marine Mammals with Lab (4)
- MARE 394A–394Z Special Topics in Marine Science (1–3)
- MARE 405 Watersheds (3)
- MARE 410 Marine Debris in the Pacific (3)
- MARE 425 Chemical Oceanography (3)
- MARE 434 Teaching Marine Science (3)
- MARE 435 Marine Field Experience for Teachers (3)
- MARE 440 Physical Oceanography (3)
- MARE 444 Biological Oceanography (3)
- MARE 445 Marine Microbial Ecology (3)
- MARE 446 Phytoplankton Ecology (3)
- MARE 446L Phytoplankton Ecology Lab (1)
- MARE 460 Marine Conservation (3)
- MARE 461 Geological Oceanography (3)
- MARE 484 Biology of Fishes (3)
- MARE 484L Biology of Fishes Lab (1)
- MARE 488 Ku'ula (3)
- MARE 490–490L Marine Reptile Conservation & Ecology w. Lab (4)
- MARE 494A–494Z Special Topics in Marine Science (1–3)

Marine Option Program Certificate

Coordinator: Jason Turner (jpturner@hawaii.edu)

Phone: (808) 932-7499 or (808) 932-7597

Web: uhhmop.hawaii.edu/

Course Requirements

1. Required Courses (6 credits)

- MARE 100 Marine Option Program Seminar (1)
- MARE 103 Marine Option Program Proposal (2)
- MARE 104 Marine Option Program Project (2)
- MARE 105 Marine Option Program Presentation (1)

2. Survey class (3 credits)

- MARE 171 Marine Biology-Diversity (3) or
- MARE 201 Oceanography (3)

3. Electives (3 credits) Any marine-related course approved by the MOP faculty advisor.

4. Skills project or internship. This must be approved by the MOP faculty advisor.

12 semester hours

Mathematics

Department Chair:

Raina Ivanova (rivanova@hawaii.edu)

Natural Sciences Division Office:

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Ramón Figueroa-Centeno, Ph.D.
Efren Ruiz, Ph.D.
Brian Wissman, Ph.D.

Assistant Professor:

Roberto C. Pelayo, Ph.D.

Instructors:

Erica Bernstein, Ph.D.
Robert L. Garry, M.S.
Zorana Lazarevic, Ph.D.

BA in Mathematics

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

Track One, Traditional (for students planning graduate work in mathematics or careers in science or technology):

- MATH 205–206 Calculus I and II (8)
- MATH 231–232 Calculus III and IV (6)
- MATH 310 Discrete Mathematics (3)
- MATH 311 Introduction to Linear Algebra (3)
- MATH 431–432 Real Analysis I and II (8)
- MATH 454–455 Modern Algebra I and II (6)

Plus 3 more semester hours of 300–400-level mathematics courses, not including MATH 496

Track Two, Teaching (for students planning to teach mathematics):

- MATH 205–206 Calculus I and II (8)
- MATH 231–232 Calculus III and IV (6)
- MATH 310 Discrete Mathematics (3)
- MATH 311 Introduction to Linear Algebra (3)
- MATH 421 Elementary Probability Theory (3)
- MATH 422 Elementary Mathematical Statistics (3)
- MATH 431 Real Analysis I (4)
- MATH 441 Geometry I (3)
- MATH 454 Modern Algebra I (3)
- MATH 496 Teaching Assistance and Tutoring in Mathematics (3)

Total in Group 2: 37–39 Semester Credits

Minimum semester hours required for the B.A. in Mathematics: 120 hours.

Notes

1. MATH 317 and PHIL 345 are strongly recommended before enrolling in 400-level classes.
2. Students must earn at least a 2.0 cumulative GPA in courses required for the major.
3. At least 45 semester hours must be earned in courses at the 300–400-level.
4. To earn a Bachelor of Arts degree in Mathematics, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the chapter on Baccalaureate Degree Requirements in the Catalog.)
5. Students should always check course prerequisites and the frequency with which courses are offered.
6. To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

Mathematics Minor

Contact: Reni Ivanova (rivanova@hawaii.edu)

Phone: (808) 932-7532

26 semester hours

Course Requirements:

MATH 205–206 Calculus I and II (8)

MATH 231–232 Calculus III and IV (6)

Plus at least 12 semester hours of 300–400-level mathematics courses

STEM Honors Certificate**Requirements**

MATH 205 Calculus I (4)

MATH 206 Calculus II (4)

Major 399 Directed Studies (3)

Major 499 Directed Studies (3)

HON 495 STEM Honors Research Symposium (1)

Major Core Courses

Note: The students must complete the core courses requirements **for their major only.**

Biology (8)

BIOL 175 Introductory Biology I (3)

BIOL 175L Introductory Biology I Lab (1)

BIOL 270 Intermed Cell & Molecular Biol (3)

BIOL 270L Intermed Cell & Molecular Biol Lab (1)

Chemistry (8)

CHEM 241 Organ Chem I (3)

CHEM 241L Organ Chem I Lab (1)

CHEM242 Organic Chem II (3)

CHEM 242L Organic Chem II Lab(1)

Computer Science (3)

CS 321 Data structure (3)

Environmental Sciences (3)

ENSC 385 Fld Meth in Geog & Environ Sci (3)

Geology (7 or 8)

GEOL 112 Hist of the Earth & Its Life (3)

GEOL 112L Hist of the Earth & Its Life Lab (1)

and either

GEOL 330 Deformation of the Earth (3) **or**

GEOL 212 Earth Materials I: Minerals (4)

Marine Sciences (8)

MARE 265 Marine Ecology and Evolution (3)

and either

▪ MARE 350 Coastal Methods and Analyses (3) **and** MARE 350L Coastal Methods and Analyses Lab (2)

or

▪ MARE 353 Pelagic Methods and Analyses (3) **and** MARE 353L Pelagic Methods and Analyses Lab (2)

Note: In Marine Science, MARE 470 Senior Thesis research (3) and MARE 471 Senior Thesis Report (3) will substitute for Major 399 Independent Study (3) and Major 499 Independent Study (3)

Mathematics (6)

MATH 231 Calculus III (3)

MATH 232 Calculus IV (3)

Physics & Astronomy (6)*Physics:*

PHYS 270 Gen Phys III: Intro Modern Phy (3)

PHYS 331 Optics (3)

Astronomy:

PHYS 270 Gen Phys III: Intro Modern Phy (3)

Total number of credits required (by major):

MAJOR	TOTAL CREDITS
Biology	23
Chemistry	23
Computer Science	18
Geology	23
Marine Science	23
Mathematics	21
Physics and Astronomy	21

Natural Science

Program Chair:

Jené Michaud, Ph.D. (jene@hawaii.edu)

Natural Sciences Division Office:

Life Science 2, (808) 932-7506

Web: hilo.hawaii.edu/academics/naturalsci/

Area Advisors:

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Ernest Kho, Ph.D., Chemistry

Steven Lundblad, Ph.D., Geology

Karla McDermid, Ph.D., Marine Science

Jené Michaud, Ph.D., Geology

Cam Muir, Ph.D., Biology

BA in Natural Science

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

1. Core Requirements

CHEM 124–124L General Chemistry I with Lab (4)

CHEM 125 General Chemistry II (3)

MATH 115 Applied Calculus (3) **or** MATH 205 Calculus I (3)

PHIL 390 History and Philosophy of Science (3) **or**

PHIL 392 Biology and Philosophy (3)

ASTR/BIO/CHEM/GEOL/MATH/PHYS 495A–495B Seminar (2) **or**

MARE 495 Seminar (3) (see Note 4 below)

1. Breadth Requirements (Select the General **or** Physical **or** Environmental Science Concentration)

▪ General Science Concentration:

BIO 125 Introduction to Cell and Molecular Biology (3) **or**

BIO 270 Intermediate Cell and Molecular Biology (3)

BIO 175–176 Introductory Biology I and II (6)

BIO 175L Introductory Biology I Lab (1) **or**

BIO 176L Introductory Biology II Lab (1)

PHYS 106–107 College Physics I and II (6) **or**

PHYS 170–171 General Physics I and II (8)

PHYS 170L General Physics I Lab (1)

Three courses selected from the following:

- o ASTR 180 Principles of Astronomy I (3)
- o ASTR 181 Principles of Astronomy II (3)
- o CS 102 Microcomputer Applications for the Sciences (3)
- o CS 150 Introduction to Computer Science (3)
- o GEOL 111 Physical Geology (3)
- o GEOL 112 Historical Geology (3)
- o MARE 201 Oceanography (3)
- o PHYS/GEOG 120 Weather and Climate of Hawai'i (3)

One additional laboratory course selected from the following:

- o ASTR 110L General Astronomy Lab
- o BIO 175L Introductory Biology I Lab
- o BIO 176L Introductory Biology II Lab

o BIO 270L Intermediate Cell and Molecular Biology Lab

o CHEM 125L General Chemistry II Lab

o GEOL 111L Physical Geology Lab

o PHYS 171L General Physics II Lab

▪ Physical Science Concentration:

BIO 101 General Biology (3) **or** BIO 125 (3) **or**

BIO 175 (3) **or** BIO 176 (3)

ASTR 180 Principles of Astronomy I (3)

GEOL 111 Physical Geology (3)

CHEM 125L General Chemistry II Lab (1)

PHYS 106–107 College Physics I and II (6) **or**

PHYS 170–171 General Physics I and II (8)

PHYS 170L General Physics I Lab (1)

PHYS 171L General Physics II Lab (1)

Three courses selected from:

- o ASTR 181 Principles of Astronomy II (3)
- o CS 102 Microcomputer Applications for the Sciences (3)
- o CS 150 Introduction to Computer Science (3)
- o GEOL 112 Historical Geology (3)
- o MARE 201 Oceanography (3)
- o PHYS/GEOG 120 Weather and Climate of Hawai'i (3)

▪ Environmental Science Concentration:

BIO 175–175L Introductory Biology I (4) **or**

BIO 176–176L Introductory Biology II (4)

BIO 281 General Ecology (3)

MARE 282 Global Change (3)

MATH 121 Introduction to Statistics and Probability (3)

GEOL 300 Advanced Environmental Earth Science (3)

CHEM 360 Environmental Chemistry (3) **or**

GEOL 445 GIS for Geology (3)

Two courses selected from the following. These two courses must be in different disciplines (alphas) (6):

- o GEOL 111 Understanding the Earth (3)
- o BIO 156 Natural History and Conservation of the Hawaiian Islands (3)
- o BIO 275 Fundamentals of Microbiology (3)
- o CS 102 Microcomputer Applications for the Sciences (3)
- o PHYS 106 College Physics I (3)
- o PHYS/GEOG 120 Weather and Climate of Hawai'i (3)
- o GEOL 360 Surface Water (3)
- o GEOL 450 Geological Remote Sensing (3)
- o GEOG 300 Climatology (3)
- o GEOG/BIO 309 Biogeography (3)
- o GEOG 470 Remote Sensing and Air Photo Interpretation (3)
- o MARE 201 Oceanography (3)
- o SOIL 304 Tropical Soils (3)

Two additional laboratory courses selected from the following (2):

- o BIO 175L Introductory Biology I Lab (1)
- o BIO 176L Introductory Biology II Lab (1)
- o BIO 156L Natural History and Conservation of the Hawaiian Islands Lab (1)
- o BIO 275L Fundamentals of Microbiology Lab (1)
- o BIO 281L General Ecology Lab (1)
- o CHEM 125L General Chemistry Lab II (1)
- o GEOL 111L Understanding the Earth Lab (1)
- o MARE 201L Oceanography Lab (1)
- o PHYS 170L General Physics Lab I (1)

Total in Group 2: 57–71 Semester Credits

Minimum semester hours required for the B.A. in Natural Science: 120 hours.

Notes

1. Students must earn at least a 2.0 GPA in courses taken for the major and also must earn at least a 2.0 GPA in courses taken for the minor.
2. At least 23 semester hours in the General Science and Physical Science Concentrations must be earned in the total university selection of courses numbered 300–400.
3. At least 32 semester hours in the Environmental Science Concentration must be earned in the total university selection of courses numbered 300–400.
4. Students should take the 495A–495B seminar appropriate to their minor. Biology minors should enroll in BIOL 495A–495B. Marine Science minors should enroll in MARE 495. All other minors should enroll in the ASTR/CHEM/GEOL/MATH/PHYS 495A–495B seminar.
5. To earn a Bachelor of Arts degree in Natural Science, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the chapter on Baccalaureate Degree Requirements in the Catalog.)
6. Students should always check course prerequisites and the frequency with which courses are offered.
7. To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

Natural Science Minor**15-26 Credits**

General or Physical Science Concentrations complete a minor in Astronomy, Biology, Chemistry, Computer Science, Earth and Space Science, Geology, Marine Science, Mathematics, or Physics.

Environmental Science Concentration completes a minor in Biology, Chemistry, Geology, or Marine Science.

Nursing**Director:**

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Alice Davis, Ph.D., APRN

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Assistant Professors:

Juanita Rass, Ph.D., APRN-C

Lisa Tostenson, MSNed, PHN, CTN-B, RN

Junior Specialist:

Sarah Smith, Ph.Dc., MSNed, RNC-OB/

Program Options

Students have two program options to earn the Bachelor of Science degree in Nursing. Option 1 is for the basic student. Option 2 is for the returning R.N. who wishes to acquire the bachelor's degree.

Option 1: Students may enter the Basic B.S.N. program, whereby two years are spent fulfilling UH Hilo General Education and pre-nursing or pre-core requirements. Nursing courses are introduced in the third year after formal admission into the Nursing program on a competitive basis (See B.S.N. admissions criteria on the next page.)

Option 2: The R.N. to B.S.N. program provides the candidate the opportunity for educational and professional advancement. Students may enter the R.N. to B.S.N. program only if they have a current Hawai'i R.N. license and have been formally admitted into the upper-division nursing program (see B.S.N. admission criteria). Students may elect to complete the program on a part-time or full-time basis. NURS 410 and 410L are offered on alternating years with NURS 361, NURS 362, and NURS 457 AND NURS 457L. Part-time students are expected to take all non-clinical courses prior to taking courses that include practica.

Regular advisement with faculty is critical for successful completion of requirements for graduation.

Fall Semester (14 semester hours)

NURS 347–347L Health Assessment with Practicum (4)

NURS 350 Trans-cultural Care and Health Promotion (3)

NURS 358 Nursing Research (3)

NURS 362 Nurse Professional Writing (1)

NURS Elective (3)

Spring Semester (16 semester hours)

NURS 361 BSN Nursing Preview (3)

NURS 375 Applied Human Nutrition (3)

NURS 410–410L Community Health Care with Practicum (5)

NURS 457–457L Collaborative Health Care, Leadership and Management with Practicum (5)

Note: RN/BSN students must meet the UH Hilo residence requirement of 30 credits from UH Hilo and complete a minimum of 24 credits of UH Hilo nursing courses from the list above, which must include: NURS 350, NURS 410, NURS 410L, NURS 457, NURS 457L and NURS 469.

R.N. to B.S.N. Distributed Learning (DL) Program

A Distributed Learning program is being implemented to help R.N. students in distant sites to access the B.S.N. program. This DL program will be expanded according to student needs and resource support. Contact the School of Nursing for more information.

NLN ACE II Test Requirement for RN's without an Associate Degree Diploma and foreign nursing degree candidates are required to take the National League for Nursing Acceleration Challenge Exam II prior to entering the program. Consult with the Nursing advisor for help in arranging for proctored testing.

Academic Regulations for Nursing

To earn the B.S.N. degree a student must satisfy the prerequisite, co-requisite, and nursing course requirements for the B.S.N. degree as specified in the UH Hilo Catalog and B.S.N. brochure in effect at the time of the student's initial enrollment in the Nursing program. Once admitted into the upper-division Nursing program, students are expected to complete the Nursing program in two years. Students who do not graduate within this period will be subject to review. The student is directly responsible to assure that all requirements are met for graduation.

Admissions Policies

Students qualify for admission into the upper division of the Basic Baccalaureate Nursing program after completing prerequisite courses. Admission is on a competitive, space-available basis.

The criteria for admission to the Nursing program are as follows:

1. Timely submission of UH Hilo Common Application Form for newly entering students or "Change of Program" form for continuing students. (Designate NURH for the major.)
2. Timely submission of nursing application form
3. A 2.7 cumulative college grade point average (GPA)
4. A 2.7 GPA for all courses listed as a Natural Science degree requirement for the BSN program
5. Completion of all college prerequisite courses (Note: Biology and chemistry classes must be passed with a "C" or better grade. Students transferring from outside the UH system must submit course descriptions for all non-nursing courses and course syllabi for nursing courses.)
6. Only 16 credits of nursing prerequisite courses can be outstanding with a maximum of 8 credits in the required sciences by the end of the semester prior to application. The following courses are included under sciences: BIO 243, 243L, BIO 244, 244L, BIO 275, 275L, CHEM 141, NURS 348, NURS 203.
7. Basic students will take a pre-entry examination and/or admission interview, with students expected to meet minimum performance standards set forth by the program. This is not a requirement for RN/BSN students.

Fall admission only: Applications to the Bachelor of Science in Nursing program must be made by January 15 for Fall entry. Contact the School of Nursing for application forms.

Pre-Nursing Status

Prior to formal admission into the upper-division Nursing program, students following the course of study to qualify for admission will be considered Pre-nursing students. Newly entering Pre-nursing students should indicate PRNU as the major on their Common Application Form. Continuing UH Hilo students who have not done so should submit a "Change of Program" form to indicate PRNU as the major. There are no special requirements for the PRNU major. Pre-nursing students should seek regular advisement from the nursing faculty regarding academic planning.

Academic Status and Progression Policies

The nursing faculty of UH Hilo are held responsible to the UH Board of Regents and the Hawai'i State Board of Nursing for the quality of its nursing education. Inherent in this responsibility is the assessment of individual progression based upon academic and professional ethical standards. All UH Hilo policies are in effect and may be found in the academic regulations in the UH Hilo Catalog.

Academic Suspension and Dismissal

A student failing to achieve a "C" or 2.0 grade in nursing courses at any point in progression through the program will be dismissed from the program after the review and recommendation of the Nursing Admissions, Progression, and Retention Committee. Students are eligible for re-admission according to the guidelines in the School of Nursing re-

admission policy. A student may be re-admitted only once into the BSN nursing program.

A student may be subject to immediate suspension or dismissal from clinical activities, when, in the judgment of the nursing faculty, the welfare of the client, the public, or the University requires such action.

Students have the right to participate in the UH Hilo grievance protocol. Reasonable cause for suspension or dismissal includes but is not limited to the demonstrable behaviors contrary to the Code of Ethics and Standards of Practice of the American Nurses' Association, the International Council of Nurses, and the rules and regulations of the Hawai'i Board of Nursing (Hawai'i Revised Statutes, Chapter 457). Students are responsible to be knowledgeable regarding these aforementioned codes, rules, and regulations.

Policy on Nursing Courses

Nursing courses are listed in blocks and are restricted to students admitted to the upper-division Nursing program, with a major designation of NURS. All courses within a block must be taken concurrently. Students may not proceed to the next block until all course requirements for the preceding block have been met. Students in the R.N. to B.S.N. program take courses within the block as determined by their program of study.) A course with an associated lab must be taken concurrently.

Nursing elective and co-requisite courses do not require admission into the upper-division Nursing program and may be taken with instructor and/or departmental approval, as required.

Grading

All nursing didactic courses must be taken for a letter grade. Only full letter grades will be used (no plus or minus grading). All nursing practicum courses will be "credit/no credit."

Students must achieve a passing grade of "C" (2.0) for didactic nursing courses and CR (credit) for practicum nursing courses in order to progress in the program.

Special Requirements

Students must meet all health and professional requirements for clinical, including the following:

1. T.B. and immunization clearance;
2. Healthcare Provider's CPR (includes CPR for Adults, Children, and Infants) certification;
3. liability insurance;
4. health insurance.

Compliance with supplemental training required by an agency will be the responsibility of the student. Students may need to obtain background checks and drug testing as required by the clinical agencies and in conformance to program expectations.

Notice to Students

Health care students are required to complete University prescribed academic requirements that involve clinical practice in a University affiliated health care facility setting with no substitution allowable. Failure of a student to complete the prescribed clinical practice shall be deemed as not satisfying academic program requirements. It is the responsibility of the student to satisfactorily complete affiliated health care facility background checks and drug testing requirements in accordance with procedures and timelines as prescribed by the affiliated health care facility.

BS in Nursing

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

1. Required Pre-Core Courses

ANTH 100 Cultural Anthropology (3)

One course in COM at the 100–200-level (3)

PSY 100 Survey of Psychology (3)

BIOL 243–243L Human Anatomy and Physiology I with Lab (4)

BIOL 244–244L Human Anatomy and Physiology II with Lab (4)

BIOL 275–275L Fundamentals of Microbiology with Lab (4)

CHEM 141 Survey of Organic Chemistry and Biochemistry (3)

NURS 203 General Pharmacology (3)

Statistics (*Choose one course from the following list:*)

- MATH 121 Introduction to Statistics and Probability (3)
- PSY 213 Statistical Techniques (3)
- SOC 280–280L Statistical Reasoning in Social Inquiry with Lab (4)
- BIOL 380 Biostatistics (3)

PSY 320 Developmental Psychology (3) (see Note 4)

NURS 348 Human Pathophysiology (3)

NURS 375 Applied Human Nutrition (3) (see Note 4)

2. Required Nursing Courses

Block I:

NURS 347–347L Health Assessment with Practicum (4)

NURS 350 Transcultural Care and Health Promotion (see Note 5) (3)

NURS 351 Professional Nursing Issues and Trends (3)

NURS 352L Nursing Skills Laboratory (1)

NURS 353–353L Nursing Concepts and Skills with Practicum (6)

Block II:

NURS 355–355L Adult Health Care I with Practicum (6)

NURS 356–356L Parent-Newborn Health Care with Practicum (6)

NURS 357–357L Mental Health Care with Practicum (6)

Block III:

NURS 358 Nursing Research (3)

NURS 455–455L Adult Health Care II with Practicum (8)

NURS 456–456L Parent-Child Health Care with Practicum (6)

Block IV:

NURS 410–410L Community Health Care with Practicum (5)

NURS 457–457L Collaborative Health Care Leadership and Management with Practicum (5)

NURS 459–459L Nursing Review with Practicum (3) (see Note 6)

3. Required Nursing Electives

(*Choose 3 semester hours from the following courses:*)

- NURS 370 Introduction to Trans-cultural Nursing (3)
- NURS 371 Computers and Health Care (3)
- NURS 372 Spirituality in Health Care (3)
- NURS 373 Gerontological Health Care (3)
- NURS 374 Skills in Nursing Leadership & Management (3)

- NURS 394 Special Topics in Nursing (1–3)
- NURS 399 Directed Studies (1–3)
- NURS 471 Introduction to Rural/Home Health Care (3)
- NURS 494 Special Topics in Nursing (1–3)
- NURS 499 Directed Studies (1–3)

Total in Group 2: 107–108 Semester Credits

Minimum semester hours required for the B.S. in Nursing: 120 hours.

Notes

1. Students must earn at least a 2.0 GPA in courses required for the major.
2. Math 121 Statistics meets the Quantitative Reasoning requirement. The Quantitative Reasoning course must be passed with a “C” grade or better.
3. All Natural Science courses must be passed with a “C” grade or better.
4. NURS 348 Human Pathophysiology and NURS 375 Applied Human Nutrition both must be passed with a “C” grade or better.
5. RN to BSN students replace NURS 459, 459L change to 469 and 469L with NURS 361 and 362.
6. Basic students who transfer into the BSN program must complete a minimum of 63 credits of UH Hilo nursing courses. These credits must include NURS 347, 347L, 350, 351, 352L, 353, 353L, 355, 355L, 356, 356L, 357, 357L, 358, 455, 455L, 456, 456L, 410, 410L, 457, 457L, 459, and 459L.
7. To earn a Bachelor of Science in Nursing, students must fulfill the requirements for the major and meet all of the University’s other baccalaureate degree requirements. (Please see the chapter on Baccalaureate Degree Requirements in the Catalog.)
8. Students should always check course prerequisites and the frequency with which courses are offered.
9. To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

Pacific Islands Studies Certificate

Coordinator:

Kerri A. Inglis, Ph.D. (inglis@hawaii.edu)

Social Sciences Division Office:

UCB 308, (808) 932-7100

Professors:

James O. Juvik, Ph.D.
Sonia Juvik, Ph.D.
Karla McDermid, Ph.D.
Peter R. Mills, Ph.D.

Associate Professors:

Kathryn Besio, Ph.D.
Kerri A. Inglis, Ph.D.
Seri Luangphinit, Ph.D.

Assistant Professors:

Jeffrey "Sasha" S. Davis, Ph.D.
Joseph H. Genz, Ph.D.
Kathleen L. Kawelu, Ph.D.

Junior Specialist:

James P. Mellon, M.A.

Requirements

21 semester hours

Required Courses (12):

ANTH 300 Cultures of Oceania (3) **or** ANTH 357 Change in the Pacific (3)
GEOG 335 Geography of Oceania (3)
HIST 316 Pacific History I: To 1900 (3) **or** HIST 317 Pacific History II: From 1900 (3)
ANTH/GEOG 435 **or** HIST 415 Senior Seminar in Pacific Studies (3)

Elective Courses (9):

- GEOG/ANTH 295 Brown Bag Seminar Series (1)
- HWST 175 Intro Music of Polynesia (3)
- ANTH 300 Cultures of Oceania* (3)
- ANTH 357 Change in the Pacific* (3)
- ANTH 385 Hawaiian and Pacific Prehistory (3)
- ANTH 447 Marine Anthropology: Fishers in Oceania (3)
- GEOG 107 Hawai'i in the Pacific (3)
- GEOG/ENSC 436 Environmental Politics in the Pacific (3)
- GEOG 331 Tourism Geographies (3)
- HIST 316 Pacific History I: to 1900* (3)
- HIST 317 Pacific History II: from 1900* (3)
- HIST 327 Environmental History--Pacific (3)
- HIST 411 Family and Gender in the Pacific (3)
- HIST 481 Land and Sovereignty in the Pacific (3)
- MARE 310 The Atoll Ecosystem (3)
- MARE 410 Marine Debris in the Pacific (3)
- ENG 430 Pacific Islands Literature (3)
- ENG 471 Pacific Film (3)

Notes

1. Students may take other courses or internships with Pacific content, subject to the approval of the Pacific Islands Studies faculty.
2. Students may take discipline-based directed study from a participating Pacific Islands Studies faculty member. Discipline-based courses relating to Pacific Islands topics allow students to focus research papers on the Pacific and may be approved for credit toward the certificate by a vote of participating faculty.
3. Other appropriate courses may be included from time to time.

* If not used as a required course

Performing Arts

Interim Department Chair:

Michael Marshall, M.F.A. (mdmarsha@hawaii.edu)

Web: hilo.hawaii.edu/academics/perfarts/ and artscenter.uhh.hawaii.edu

Professor:

Jacquelyn Pualani Johnson, M.A. (Drama)

Associate Professor:

Richard A. Lee, Ph.D. (Music)

Instructor:

Celeste Anderson Staton (Dance)

BA in Performing Arts: Dance Concentration

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

1. Required Performing Arts Major Core Courses

DNCE 151 Dance Techniques (2)
DNCE 251 Introduction to Dance (3)
DRAM 171 Stage Techniques (2)
DRAM 271 Introduction to Theatre (3)
DRAM 280–280L Basic Stagecraft (4)
MUS 160 Introduction to Music Literature (3)
MUS 180 Elementary Music Theory (3)

2. Required Courses in Dance

DNCE 160, 260, 360, and 460 Ballet I, II, III, and IV (12)
DNCE 180 and 280 Jazz Dance I and II (6)
DNCE 190 and 290 Modern Dance I and II (6)
DNCE 371 Choreography (3) **or** DNCE 401 Dance Ensemble (3)
DNCE 419 Dance in Education (3) **or** DNCE 450 History of Dance (3)
DNCE 494 Special Topics (2). *Choose **two** courses from the following:*

- Alexander Technique
- Ethnic Dance
- Folk Dance
- Conditioning for the Dancer
- Improvisation
- Musical Theatre Techniques
- Notation
- Tap Dancing, etc.

DNCE 499 Directed Studies: Senior Project (3)

3. Required Course in Drama *Choose **one** course from the following:*

- DRAM 340 Stage Makeup (3)
- DRAM 350 Stage Costume (3) (see Note 5 below)

4. Required Course in Music *Choose **one** course from the following:*

- MUS 102 University Chorus (2)
- MUS 123 Voice Class (1)
- MUS 125 Piano Class (1)
- MUS 402 Instrumental Ensemble (2)
- MUS 404 Kapili Choir (2)
- MUS 406 Chamber Ensemble (2)

Total in Group 2: 59–60 Semester Credits**Minimum semester hours required for the B.A. in Performing Arts:****Dance Concentration:** 120 hours.**Notes**

- To earn the BA in Performing Arts, students must earn a C or higher in all required Performing Arts courses.
- Applied Music fees are in addition to regular tuition. For Applied Music courses and fee structure, contact the Performing Arts department chair and consult the instructor at the time of registration.
- Students enrolled in **MUS 135, 136, 235, 236, 335, 336, 435, 436** are required to participate in student recitals and juries, and to be co-enrolled in a Performing Arts ensemble.
- No more than 12 semester hours** of ensemble courses may be applied to the upper division total required for the Music Concentration.
- Students enrolled in DRAM 350 who have no previous sewing experience also **must** enroll concurrently in DRAM 350L: Stage Costume Laboratory (1 semester hour).
- In order to earn a Bachelor of Arts degree in Performing Arts, students must not only fulfill the requirements for one of the specialty concentrations in the major but also meet all of the University's other baccalaureate degree requirements. (Please see the chapter entitled Baccalaureate Degree Requirements of this Catalog.)
- Students should always check course prerequisites and the frequency with which courses are offered.
- To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

BA in Performing Arts: Drama Performance Concentration**Group 1. General Education Basic, Area, and Integrative Requirements.**

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)**1. Required Performing Arts Major Core Courses**

- DNCE 151 Dance Techniques (2)
- DNCE 251 Introduction to Dance (3)
- DRAM 171 Stage Techniques (2)
- DRAM 271 Introduction to Theatre (3)
- DRAM 280–280L Basic Stagecraft with Lab (4)
- MUS 160 Introduction to Music Literature (3)
- MUS 180 Elementary Music Theory (3)

2. Required Courses in Drama

- DRAM 221–222 Beginning Acting I and II (6)
- DRAM 321 Styles of Acting (3) **or** DRAM 322 Acting Shakespeare (3)
- DRAM 340 Stage Makeup (3) **or** DRAM 350 Stage Costume (3) **or** DRAM 380 Theatre Design (3) (see Note 5 below)
- DRAM 419 Drama in Education (3) **or** DRAM 421 Acting Troupe (3)
- DRAM 430 Directing (3) **or** DRAM 490–490L Lyric Theatre & Lab (4)
- DRAM 499 Directed Studies: Senior Project (3)

3. Required Course in Music. Choose *one* course from the following:

- MUS 102 University Chorus (2)

- MUS 123 Voice Class (1)
- MUS 125 Piano Class (1)
- MUS 402 Instrumental Ensemble (2)
- MUS 404 Kapili Choir (2)
- MUS 406 Chamber Ensemble (2)

4. Required Course from a Related Field. Choose *one* course from the following:

- DRAM 330 Stage Management (3)
- DRAM 390 Survey of Drama Literature (3)
- ENG 318 Playwriting (3)
- ENG/DRAM 483 Modern Drama (3)
- ENG 461 **or** ENG 462 Shakespeare (3) (either semester)
- PSY 320 Developmental Psychology (3)
- PSY 321 Psychology of Personality (3)
- PSY 324 Abnormal Psychology (3)

Total in Group 2: 45–47 Semester Credits**Minimum semester hours required for the B.A. in Performing Arts:****Drama Performance Concentration:** 120 hours.**Notes**

- To earn the BA in Performing Arts, students must earn a C or better in all required Performing Arts courses.
- Applied Music fees are in addition to regular tuition. For Applied Music courses and fee structure, contact the Performing Arts department chair and consult the instructor at the time of registration.
- Students enrolled in **MUS 135, 136, 235, 236, 335, 336, 435, 436** are required to participate in student recitals and juries, and to be co-enrolled in a Performing Arts ensemble.
- No more than 12 semester hours** of ensemble courses may be applied to the upper division total required for the Music Concentration.
- Students enrolled in DRAM 350 who have no previous sewing experience also **must** enroll concurrently in DRAM 350L: Stage Costume Laboratory (1 semester hour).
- In order to earn a Bachelor of Arts degree in Performing Arts, students must not only fulfill the requirements for one of the specialty concentrations in the major but also meet all of the University's other baccalaureate degree requirements. (Please see the chapter entitled Baccalaureate Degree Requirements of this Catalog.)
- Students should always check course prerequisites and the frequency with which courses are offered.
- To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

BA in Performing Arts: Music Concentration**Group 1. General Education Basic, Area, and Integrative Requirements.**

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)**1. Required Performing Arts Major Core Courses**

- DNCE 151 Dance Techniques (2)
- DNCE 251 Introduction to Dance (3)
- DRAM 171 Stage Techniques (2)

- DRAM 271 Introduction to Theatre (3)
- DRAM 280–280L Basic Stagecraft (4)
- MUS 160 Introduction to Music Literature (3)
- MUS 180 Elementary Music Theory (3)

2. Required Courses in Music Theory

- MUS 185–185L Music Theory I with Lab (4)
- MUS 186–186L Music Theory II with Lab (4)
- MUS 285–285L Music Theory III with Lab (4)
- MUS 286L Music Theory IV Lab (1)
- MUS 385 20th Century Composition Techniques (3)

3. Required Courses in Music History

- MUS 365–366 History of Western Music (two semesters) (6)

4. Required Courses in Applied Music (see Note 1 below)

- MUS 135 First-Level Applied Music (1)
- MUS 136 First-Level Applied Music (1)
- MUS 235 Second-Level Applied Music (1)
- MUS 236 Second-Level Applied Music (1)

5. Required Piano Proficiency *Choose one combination below for 2 semester hours:*

- MUS 125–126 Class Piano I and II (2)
- MUS 123–124 Elementary Voice Class I and II (for pianists) (2)

6. Required Performing Ensembles (See Note 1 below) *Choose from courses listed below for a minimum of six semesters. A maximum limit of 12 performing ensemble credits may be applied toward the upper division total:*

- MUS 102 University Chorus (2)
- MUS 402 Instrumental Ensemble (2)
- MUS 404 Kapili Choir (2)
- MUS 406 Chamber Ensemble (2)

7. Required Upper Division MUS Electives. *Choose 3 courses from the following list: (9)*

- MUS 349 Orchestration (3)
- MUS 390 Choral Conducting (3)
- MUS 391 Instrumental Conducting (3)
- MUS 419 Music for Elementary Teachers (3)
- MUS 462 Choral Music (3)
- MUS 485 Form and Analysis (3)
- MUS 487 Counterpoint (3)
- MUS 494 Special Topics in Musicology (3)

8. MUS 499 Directed Studies: Senior Project (3)

Total in Group 2: 72 Semester Credits

Minimum semester hours required for the B.A. in Performing Arts:

Music Concentration: 120 hours.

Notes

1. To earn the BA in Performing Arts, students must earn a C or better in all required Performing Arts courses.
2. Applied Music fees are in addition to regular tuition. For Applied Music courses and fee structure, contact the Performing Arts department chair and consult the instructor at the time of registration.
3. Students enrolled in **MUS 135, 136, 235, 236, 335, 336, 435, 436** are required to participate in student recitals and juries, and to be co-enrolled in a Performing Arts ensemble.
4. **No more than 12 semester hours** of ensemble courses may be applied to the upper division total required for the Music Concentration.
5. Students enrolled in DRAM 350 who have no previous sewing experience also **must** enroll concurrently in DRAM 350L: Stage Costume Laboratory (1 semester hour).
6. In order to earn a Bachelor of Arts degree in Performing Arts, students must not only fulfill the requirements for one of the specialty

concentrations in the major but also meet all of the University's other baccalaureate degree requirements. (Please see the chapter entitled Baccalaureate Degree Requirements of this Catalog.)

7. Students should always check course prerequisites and the frequency with which courses are offered.
8. To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

Performing Arts Certificate

25 Semester Hours

Required Courses in Drama (9 semester hours)

DRAM 271 Introduction to Theatre (3)

And two of the following courses:

- DRAM 321 Styles of Acting (3)
- DRAM 340 Stage Make-Up (3)
- DRAM 350 Stage Costume (3)
- DRAM 430 Directing (3)
- DRAM 490 Lyric Theatre (3)

Required Courses in Dance (9 semester hours)

DNCE 251 Introduction to Dance (3)

DNCE 371 Choreography (3)

DNCE 401 Dance Ensemble (3)

Required Courses in Music (7 semester hours)

MUS 160 Introduction to Music Literature (3)

And two ensemble courses, selected from:

- MUS 102 University Chorus (2)
- MUS 402 Instrumental Ensemble (2)
- MUS 404 University Showcase Singers (2)
- MUS 406 Chamber Ensemble (2)

Note: All prerequisites must be completed before students will be allowed to register for upper-division courses. Repeatable courses may be counted only once toward fulfilling the requirements for the certificate.

Philosophy

Department Chair:

John Hsueh-Li Cheng

Humanities Division Office:

Kanaka'ole Hall 214, (808) 932-7216

Web: hilo.hawaii.edu/academics/philosophy/

Professor:

John Hsueh-Li Cheng, Ph.D.

Assistant Professors:

Celia Bardwell-Jones, Ph.D.

Christopher T. Lauer, Ph.D.

BA in Philosophy

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

PHIL 209 Reasoning (3) or PHIL 345 Symbolic Logic (3)

PHIL 211 History of Ancient Philosophy (3)

PHIL 213 History of Modern Philosophy (3)

PHIL 307 Theory of Knowledge (3) or PHIL 310 Metaphysics (3) or PHIL 312 Philosophy of Nature (3)

PHIL 315 Ethical Theory (3) **or** PHIL 316 Science, Technology and Society (3) **or** PHIL 327 Bioethics **or** PHIL 329 Environmental Ethics

And an additional five 300–400-level courses in Philosophy, two of which must be a course in Asian, comparative, or non-Western Philosophy

Total in Group 2: 30 Semester Credits

Minimum semester hours required for the B.A. in Philosophy:

120 hours.

Notes

1. Students must earn at least a 2.0 GPA in courses required for the major.
2. The B.A. in Philosophy requires a total of 45 semester hours of 300-/400-level course work.
3. To earn a Bachelor of Arts degree in Philosophy, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the chapter on Baccalaureate Degree Requirements in the Catalog.)
4. Students should always check course prerequisites and the frequency with which courses are offered.
5. To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

Philosophy Minor

15 Semester Hours

Requirements:

PHIL 211 History of Ancient Philosophy (3) **or** PHIL 213 History of Modern Philosophy (3)

One of the following courses (3):

- PHIL 307 Theory of Knowledge
- PHIL 310 Metaphysics
- PHIL 312 Philosophy of Nature
- PHIL 390 History and Philosophy of Science

One of the following courses (3):

- PHIL 220 Social Ethics
- PHIL 304 Philosophy and Cultural Diversity
- PHIL 315 Ethical Theory
- PHIL 320 Social and Political Philosophy
- PHIL 323 Professional Ethics
- PHIL 325 Philosophy of Law
- PHIL 327 Bioethics
- PHIL 329 Environmental Ethics
- PHIL 330 Aesthetics
- PHIL 375 Feminist Philosophy

One course in Asian/Comparative Philosophy at the 300–400-level (3) **and one** additional course at the 200-400 level

Note: Of the courses chosen, at least nine semester hours must be at the 300-level or above.

Physics

Department Chair:

Philippe M. Binder, Ph.D. (uhhpachr@hawaii.edu), (808) 932-7196

Natural Sciences Division Office:

Life Sciences 2, (808) 932-7506/7507

Web: hilo.hawaii.edu/academics/astrometry/ and astro.uhh.hawaii.edu

Professor:

Philippe M. Binder, Ph.D.

Associate Professor:

Marianne Y. Takamiya, Ph.D.

Assistant Professors:

Kathy L. Cooksey, Ph.D.

Jesse M. Goldman, Ph.D.

R. Pierre Martin, Ph.D.

Instructors:

John C. Hamilton, M.S.

Norman G. Purves, M.S.

Technician:

John P. Coney, M.Ed.

BA in Physics

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (Please note any course pre-requisites)

1. Required Courses in Physics

PHYS 170–170L General Physics I: Particles and Waves with Lab (5)

PHYS 171–171L General Physics II: Electricity and Magnetism with Lab (5)

PHYS 270 General Physics III: Introduction to Modern Physics (3)

PHYS 330 Electromagnetism (4)

PHYS 331 Optics (3)

PHYS 341 Thermodynamics (3)

PHYS 371 General Physics IV: Classical Mechanics (3)

PHYS 430 Quantum Mechanics (4)

PHYS 495A–495B Seminar (two semesters) (2)

An additional **six semester hours** from PHYS 300–499V (6)

2. Required Courses in Mathematics

MATH 205 Calculus I (4)

MATH 206 Calculus II (4)

MATH 231 Calculus III (3)

MATH 232 Calculus IV (3)

MATH 300 Ordinary Differential Equations (3)

And one additional elective MATH courses approved in writing by the Physics Department and totaling 3 semester hours (3)

3. Required Natural Science Electives

Twelve semester hours selected from Natural Sciences as approved in writing by the Physics Department. (12) (see Note 3 below)

Minimum semester hours required for the B.A. in Physics: 120 hours.

Notes

1. Students must earn at least a 2.0 GPA in courses required for the major.
2. **At least 36 semester hours** must be earned in courses at the 300–400-level.
3. Students are encouraged strongly to meet with their advisors regarding Natural Science elective courses appropriate to their career aspirations.
4. To earn a Bachelor of Arts degree in Physics, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the chapter on Baccalaureate Degree Requirements in the Catalog.)
5. Students should always check course prerequisites and the frequency with which courses are offered.
6. To ensure progress toward degree completion, students are **strongly encouraged to meet with an advisor each semester before registering.**

Physics Minor

19 semester hours

Courses required for a minor in Physics:

PHYS 172–170L General Physics I-Particles and Waves with Laboratory (5)

PHYS 173–171L General Physics II-Electricity and Magnetism with Laboratory (5)

PHYS 270 General Physics III-Introduction to Modern Physics (3)

and six additional semester hours of physics in courses numbered PHYS 300 or greater.

Political Science

Department Chair:

Sarah K. Marusek, Ph.D. (marusek@hawaii.edu)

Social Sciences Division Office:

University Classroom Building 308, (808) 932-7129

Web: hilo.hawaii.edu/academics/politicalsci/ and
hilo.hawaii.edu/depts/politicalsci/.

Professors:

Todd Belt, Ph.D.
Enbao Wang, Ph.D.

Associate Professor:

Sarah K. Marusek, Ph.D.

Assistant Professor:

Katherine E. Young, Ph.D.

BA in Political Science

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

POLS 101 Am Politics: National (3) or POLS 101G: Am Politics: National Citizenship (3)

POLS 201 Introduction to Political Theory (3)

POLS 220 Introduction to Legal Systems (3)

POLS 242 Introduction to World Politics (3)

POLS 251 Introduction to Comparative Politics (3)

POLS 280 Methods of Research (3)

POLS 470S Seminar in Political Science (3)

An additional 15 semester hours of POLS courses (300-level or above) (15)

Total in Group 2: 36 Semester Credits

Minimum semester hours required for the B.A. in Political Science: 120 hours.

Notes

1. Students must earn at least a 2.0 GPA in courses required for the major.
2. At least 45 semester hours must be earned in courses at the 300–400-level.
3. To earn a Bachelor of Arts degree in Political Science, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the chapter on Baccalaureate Degree Requirements in the Catalog.)
4. Students should always check course prerequisites and the frequency with which courses are offered.
5. To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

Political Science Minor

21 Semester Hours

Required course:

POLS 101 American Politics: National (3) **or**
POLS 101G: Am Politics: National Citizenship (3)

Any *three* of the following courses :

- POLS 201 Introduction to Political Theory (3)
- POLS 220 Introduction to Legal Systems (3)
- POLS 242 Introduction to World Politics (3)
- POLS 251 Introduction to Comparative Politics (3)

Three *POLS* courses (300-level and above)

International Studies Certificate (International Relations Concentration)

49 Semester Hours

Requirements

General Education Co-Requisites. Choose **four** courses [12 semester hours] from the courses listed below:

- ANTH 100 Cultural Anthropology (3)
- GEOG 102 Geography of World Regions (3)
- GEOG 103 Geography and Contemporary Society (3)
- HIST 151 World History: Prehistory to 1500 (3)
- HIST 152 World History: from 1500 to the Present (3)

Program Requirements (22 semester hours)

First year language (8)

Second year language (8)

POLS 242 Introduction to World Politics (3) **or**

POLS 251 Introduction to Comparative Politics (3)

ECON 210 The Global Economy (3)

International Relations Concentration Option. Choose **four** courses [12 semester hours] from the courses listed below:

- GEOG 350 Geography of Asia (3)
- POLS 340 U.S. Foreign Policy (3)
- POLS 342 International Law (3)
- POLS 345 Model United Nations (3)
- POLS 351 Politics of China (3)
- POLS 353 Politics of Japan (3)
- POLS 355 International Political Economy (3)

Pre-Pharmacy Program

Daniel K. Inouye College of Pharmacy and College of Arts & Sciences

Director: Susan I. Jarvi, Ph.D.

Faculty Advisor: Linda Connelly, Ph.D.

Advising Specialist: Susannah Welch

Email: prepharm@hawaii.edu

Phone: (808) 933-3162

Web: pharmacy.uhh.hawaii.edu/academics/prepharm/.

Curricula

Curriculum requirements include a total of 68–69 credit hours (30–31 general education, 36 core science credit hours, and 2 credit hours Pre-pharmacy Orientation). The coursework is structurally aligned with the curriculum requirements toward a BA or BS degree in Biology or Chemistry at UH Hilo. Details of course listings and transfer tables are available at: pharmacy.uhh.hawaii.edu/academics/prepharm/curriculum.php.

Group 1. General Education Requirements

Students should meet with the Pre-Pharmacy advisor to ensure that they enroll in courses that will enable them to take recommended pre-Pharmacy General Education courses. This is particularly important for students who plan to earn the BA in Pharmacy Studies while earning their Doctor of Pharmacy degree.

The General Education courses should include:

- English Composition (6)
- Quantitative Reasoning (Math 205) (4)
- World Cultures (3)
- Humanities (6)
- Social Sciences (6)
- Speech (3)
- Economics (3)

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Natural Science Requirements

- BIOL 175–175L Introduction to Biology I (4)
- BIOL 176–176L Introduction to Biology II (4)
- CHEM 124–124L General Chemistry I (4)
- CHEM 125–125L General Chemistry II (4)
- CHEM 241–241L Organic Chemistry I (4)
- CHEM 242–242L Organic Chemistry II (4)
- BIOL 243–243L Human Anatomy & Physiology I (4)
- BIOL 244–244L Human Anatomy & Physiology II (4)
- BIOL 275–275L or 375–375L Microbiology (4)

Group 3. Courses from Related Fields

- IS 201 Pre-Pharmacy Orientation(2)

Psychology

Department Chair:

Dawna K. Coutant, Ph.D. (coutant@hawaii.edu)

Social Sciences Division Office:

University Classroom Building 308, (808) 932-7100

Web: hilo.hawaii.edu/academics/psychology/
and hilo.hawaii.edu/~psych/

Professors:

Susan G. Brown, Ph.D.
B. Chris Frueh, Ph.D.
Bryan S.K. Kim, Ph.D.
Vladimir Skorikov, Ph.D.

Associate Professors:

Dawna Coutant, Ph.D.
Steve Herman, Ph.D.
Charmaine Higa-McMillan, Ph.D.
Adam Pack, Ph.D.
Cheryl M. Ramos, Ph.D.
Errol B. Yudko, Ph.D.

Assistant Professors:

Eric Heuer, Ph.D.
Sunyoung Kim, Ph.D.

Instructor:

Alex J. Nagurney, Ph.D.

BA in Psychology

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

1. Core

- PSY 100 Survey of Psychology (3)
- PSY 213 Statistical Techniques (4)
- PSY 214 Research Methodology (4)

2. Block 1. Choose **two** courses from the following list: (6)

- PSY 320 Developmental Psychology (3)
- PSY 321 Psychology of Personality (3)
- PSY 322 Social Psychology (3)
- PSY 324 Abnormal Psychology (3)

3. Block 2. Choose **two** courses from the following list: (6)

- PSY 314 Learning and Motivation (3)
- PSY 315 Sensation and Perception (3)
- PSY 350 Cognitive Psychology (3)
- PSY 352 Introduction to Biopsychology (3)

4. An **additional minimum 18 semester hours** of 300–400-level PSY courses which must include at least 9 semester hours of 400-level courses and no more than 3 semester hours of PSY 399 or 499.

Total in Group 2: 41 Semester Credits

Minimum semester hours required for the B.A. in Psychology: 120 hours.

Notes

1. Students must earn at least a 2.0 GPA in courses required for the major.
2. Students must pass any course applied to the Psychology major with a grade of "C-" or better.
3. At least 45 semester hours must be earned in courses at the 300–400-level.
4. To earn a Bachelor of Arts degree in Psychology, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the chapter on Baccalaureate Degree Requirements in the Catalog.)
5. Students should always check course prerequisites and the frequency with which courses are offered.
6. To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

Sociology**Department Chair:**

Marilyn Brown, Ph.D. (marilyn@hawaii.edu)

Social Sciences Division Office:

University Classroom Building 308, (808) 932-7100

Web: hilo.hawaii.edu/academics/sociology/

Professor:

Thom Curtis, Ph.D

Associate Professors:

Marilyn M. Brown, Ph.D.

Alton M. Okinaka, Ph.D.

Assistant Professor:

Lindy S. Hern, Ph.D.

BA in Sociology**Group 1. General Education Basic, Area, and Integrative Requirements.**

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

SOC 100 Principles of Sociology (3)

SOC 200 Career Opportunities (1)

SOC 280–280L Statistical Reasoning in Social Inquiry with Lab (4)

SOC 380 Methods of Research (3)

SOC 390 Sociological Theory (3)

An additional minimum 9 semester hours of 400-level Sociology courses

An additional 12 semester hours in Sociology at any level

Total in Group 2: 35 Semester Credits

Minimum semester hours required for the B.A. in Sociology: 120 hours.

Notes

1. Students must earn at least a 2.0 GPA in courses required for the major.
2. At least 45 semester hours must be earned in courses at the 300–400-level.
3. To earn a Bachelor of Arts degree in Sociology, students must fulfill the requirements for the major and meet all of the University's other baccalaureate degree requirements. (Please see the chapter on Baccalaureate Degree Requirements in the Catalog.)
4. Students should always check course prerequisites and the frequency with which courses are offered.
5. To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

Sociology Minor**20 semester hours****Required:**

SOC 100 Principles of Sociology (3)

SOC 200 Career Opportunities in Sociology (1)

SOC 280–280L Statistical Reasoning in Social Inquiry with Lab (4)

SOC 380 Methods of Research (3)

SOC 390 Sociological Theory (3)

and six additional semester hours in Sociology at the 300–400-level

Women's Studies Certificate

Director:

Marilyn Brown, Ph.D. (marilyn@hawaii.edu)

Coordinator and Advisor:

Amy Gregg, M.Div. (agregg@hawaii.edu)

Social Sciences Division Office:

University Classroom Building 308, (808) 932-7100

Web: hilo.hawaii.edu/academics/womensst/

Steering Committee and Faculty:

Celia Bardwell-Jones, Ph.D., Philosophy
 Catherine Becker, Ph.D., Communications
 Kathryn Besio, Ph.D., Geography
 Marilyn Brown, Ph.D., Sociology
 Susan Brown, Ph.D., Psychology
 Emmeline dePillis, Ph.D., Management
 Nancy Elmer, M.A., Geography
 Amy C. Gregg, M.Div., Women's Studies
 Lindy S. Hern, Ph.D., Sociology
 Kerri A. Inglis, Ph.D., History
 Sunyoung Kim, Ph.D., Psychology
 Seri Luangphinit, Ph.D., English
 Sarah Marusek, Ph.D., Political Science
 Faith Mishina, M.A., Languages
 Kirsten Mollegaard, Ph.D., English
 Lynn Morrison, Ph.D., Anthropology
 Yumiko Ohara, Ph.D., Languages
 Vera Parham, Ph.D., History
 Lauri Sagle, M.A., English
 Susan Wackerbarth, M.A., English
 Jennifer Wheat, Ph.D., English
 Lynne Wolforth, Ph.D., Anthropology
 Jing Yin, Ph.D., Communication
 Katherine E. Young, Ph.D., Political Science

WS 340 Socialization & Identity (3) *(Same as SOC 340)*
 WS 342 Sociology of Human Aging (3) *(Same as SOC 342)*
 WS 352 Gender and Sexuality (3)
 WS 355 Women in Modern Lit & Film (3) *(Same as ENG 355)*
 WS 356 Language and Gender (3) *(Same as ENG 356, LING 356)*
 WS 357 Women and Religion (3)
 WS 358 Women in Christianity (3) *(Same as HIST 358)*
 WS 360 American Women's History (3) *(Same as HIST 360)*
 WS 368 Latin American Women's Lit (3) *(Same as SPAN 368)*
 WS 369 Crit Anal Lat & Hisp Film (3) *(Same as SPAN 369)*
 WS 375 Feminist Philosophy (3) *(Same as PHIL 375)*
 WS 378 N. Amer Indig Cultr Survival (3) *(Same as HIST 378)*
 WS 382 Qualitative Research (3) *(Same as GEOG 382)*
 WS 385 Women & Health (3) *(Same as PSY 385)*
 WS 392 Japanese Women (3) *(Same as JPST 392, HIST 392)*
 WS 393 Normality, Abnormality & Soc (3) *(Same as PHIL 393)*
 WS 401 Women in Hawaiian History (3) *(Same as HIST 401)*
 WS 411 Family & Gender in Oceania (3) *(Same as HIST 411)*
 WS 420 Family Communication (3) *(Same as COM 420)*
 WS 423 Post-Colonial Literature (3) *(Same as ENG 423)*
 WS 430 Gender, Place and Environment (3) *(Same as GEOG 430)*
 WS 442 Romantic Literature (3) *(Same as ENG 442)*
 WS 461 Race and Gender in Media (3) *(Same as COM 461)*
 WS 480 Women and Rhetoric (3) *(Same as ENG 480)*
 WS 486 Women in Ancient European Civi (3) *(Same as HIST 486)*
 WS 495 Women's Studies Seminar (3)

Requirements

21 semester hours

Required courses:

WS 151 Introduction to Women's Studies (3)

WS 495 Women's Studies Seminar (3)

Electives: 15 additional credits from courses listed below, with a maximum of six credits from 200-level courses and a maximum of nine credits from the same discipline. Most courses counted toward the Women's Studies Certificate are cross-listed as Women's Studies courses. Each semester, additional appropriate courses are reviewed and listed under Women's Studies in the class schedule. Students also may take up to six credits of discipline-based directed study from a participating WS faculty member.

WS 200E Lit Genres: Myth/Folklore (3) *(Same as ENG 200E)*

WS 201 Global Cinema (3) *(Same as ENG 201)*

WS 202 Literature of Human Rights (3) *(Same as ENG 202)*

WS 204 Intr Race/Gender Film Studies (3) *(Same as ENG 204)*

WS 206 Intro to Popular Culture (3) *(Same as ENG 206)*

WS 257 Multicultural Literature (3) *(Same as ENG 257)*

WS 300 Family in World Perspective (3) *(Same as SOC 300)*

WS 305B Themes in Regnl Geog: Mid East (3) *(Same as GEOG 305B)*

WS 310 Race & Ethnic Relations (3) *(Same as SOC 310)*

WS 319 European Women's History (3) *(Same as HIST 319)*

WS 320 Cross-Cultural Study Of Women (3) *(Same as ANTH 320)*

WS 321 Social Stratification (3) *(Same as SOC 320)*

WS 324 Culture, Sex And Gender (3) *(Same as ANTH 324)*

WS 325 Psychology Of Women (3) *(Same as PSY 325)*

WS 327 Law and Identity (3) *(Same as POLS 327)*

WS 332 Politics of Race & Gender (3) *(Same as POLS 332)*

College of Business and Economics

Business Administration

Department Chair:

Kelly Burke, Ph.D., kellyb@hawaii.edu

College of Business and Economics Office:

Kanaka'ole Hall 270, (808) 974-7400

Web: <http://business.uhh.hawaii.edu/>

BBA: Pre-Business Program

During the first two years of the B.B.A. program, students complete courses that fulfill UH Hilo's general baccalaureate degree requirements as well as a number of lower-division foundation courses in Business and Economics that are specifically required before progression to upper-division (300- and 400-level) study. These lower-division Business and Economics courses are referred to as the Pre-Business Core.

Pre-Business Core Requirements

(27 semester hours, all with "C" or better)

Please pay close attention to course prerequisites.

ACC 201 Financial Accounting (3)

ACC 202 Managerial Accounting (3) (Pre: ACC 201)

BUS 240 Business Law (3) (Pre: sophomore standing)

BUS 290 Critical Thinking (3) (Pre: sophomore standing)

COM 251 Public Speaking (3)

ECON 130 Introduction to Microeconomics(3)

ECON 131 Introduction to Macroeconomics (3) (Pre: ECON 130)

ECON 300 Intermediate Macro-economic Theory (3) (Pre: ECON 131) or ECON 340 Money and Banking (3) (Pre: ECON 131)

ENG 209 Writing for Business (3)

BBA Program-specific General Education Requirements

Composition (3 semester hours, all with "C" or better).

ENG 100, 100T, 100H or ESL 100, 100T Expository Writing (3).

Must be fulfilled before completion of 24 credits.

Language Arts (3 Semester hours)

One course chosen from the following:

- Languages (CHNS, FIL, FR, HAW, JPNS, SPAN)
- LING 102
- ENG/WS 204, 206, 257
- ENG 205, 286A, 286B, 290
- COM 270,
- CS 200

Quantitative Reasoning (6 semester hours, all with "C" or better).

One of MATH 104F, 115, 205, 206, or 231

QBA 260 Business Statistics (3) (Pre: CoBE Computer Competency certification & **one** MATH course numbered 104F, 115, 205 or higher)

World Cultures (6 semester hours). Choose from:

- AG 230;
- ANTH 100, 320, 324, 372;
- ENG 201, 202, 253, 254, 275, 289;
- GEOG 102;
- HIST 151, 152;
- POLS 251;
- WS 201, 202, 320, 324, 357

Humanities (Total of 6 semester hours at 100–200-level):

Two courses from the University-approved list of Humanities General Education Courses.

Social Sciences (6 semester hours).

One of the following (with a grade of "C" or better):

- Anthropology 100, 110, 320, 324, 372, 385;
- Psychology 100, 312, 323, 390, 445, 475;
- Sociology 100, 240, 260, 280, 280L.

One additional course from the approved General Education list for Social Sciences.

Natural Sciences (7 semester hours at 100–200-level, including one lab).

Two courses from two different areas of the University-approved Natural Sciences General education list. One course must have an associated lab.

Hawai'i Pan-Pacific Requirement (3 credits)

All B.B.A. students take MGT 333 as part of their professional Business Program, which satisfies this requirement if taken at UH Hilo. Students transferring a course similar to MGT 333 still may have to meet the Hawai'i Pan-Pacific requirement and should consult their advisor.

Writing Intensive Requirement

B.B.A. students must meet the University's Writing Intensive requirements stated elsewhere in the catalog.

Global and Community Citizenship (3 credits)

One course selected from:

- AG 230,
- ANTH 389,
- ENG 275, 323,
- GEOG 120, 430,
- GEOL 300, 370,
- MGT 425,
- NURS 457,
- PHYS 120,
- POLS 391,
- PSY 445,
- WS 430

BBA: Professional Business Program

This Degree Program leads to the B.B.A. degree with the major in General Business, or the major in Accounting. Total Semester Hours Required: 121

Note: No more than 60 semester hours in business topics may be applied to any B.B.A. degree.

Note: At least 24 semester hours of upper-division (300–400-level) Business Administration coursework applied to any B.B.A. degree must be earned at UH Hilo.

Before enrollment in upper-division (300–400-level) Business Administration courses, students majoring in either Business Administration major must have:

- Filed a formal declaration of intent to major in either General Business or Accounting at least four weeks in advance of scheduled early-registration;
- Completed 50 or more earned semester credit hours at the 100-level or higher;
- Attained a cumulative grade point average of 2.50 or higher on work completed at UH Hilo (transfer students meeting other requirements

may be provisionally admitted to upper-division courses during their first semester at UH Hilo, but will be required to earn at least a 2.5 GPA on their first 12 semester hours of credit at UH Hilo for continued enrollment in upper-division business courses);

- Earned certification of computer competency by the College of Business and Economics, through successful completion of a practical demonstration of those skills (Computer Competency Test); and
- Successfully completed all course-specific prerequisites for each upper-division class attempted.

Business Core Requirements for Both Majors (24 semester hours)

Each Business core course must be completed with a grade of "C" or better.

MGT 300 Management, Organizations and Human Behavior (3)
(Pre: COM 251, ENG 209 and BUS 290)

MGT 333 International Business Management (3)
(Pre: ECON 130 and MGT 300)

MKT 310 Principles of Marketing (3)
(Pre: ECON 130, ACC 201 and BUS 290)

FIN 320 Principles of Business Finance (3) (Pre: ACC 201, one MATH course numbered 104F, 115, 205 or higher and BUS 290)

QBA 300 Operations Management (3) (Pre: QBA 260)

QBA 362 Management Information Systems (3)

MGT 423 Business and Society (3) (Pre: BUS 240 and MGT 300) **or**
PHIL 323 Professional Ethics (3) (Pre: previous work in philosophy)

MGT 490 Strategic Management (3) (Pre: BUS 290, MGT 300, MKT 310, FIN 320, QBA 300 and senior standing)

Specialization Tracks and Electives for General Business Majors (18 semester hours).

Students are encouraged to meet with their advisor to discuss the choices available, and to designate their selection early in their program. A minimum grade of "C" or better is required for all courses applied to this requirement. All courses applied to this requirement must be upper-division (300 or 400 course numbers).

A. Management Specialization – Students electing to specialize in Management must meet the following requirements:

- Eighteen credits (6 courses) chosen from ACC, BUS, FIN, MGT, MKT, QBA or TOUR.
- These courses must be chosen from at least 3 different course alphas from the list above.
- No more than 2 courses from any single course alpha may be counted for this specialization.
- One Economics course may be substituted for one of the required business courses

B. Marketing Specialization – Students electing to specialize in Marketing must complete the following courses:

- MKT 311 – Marketing Management
- MKT 315 – Consumer Behavior
- MKT 319 – Marketing Research
- Two additional courses with MKT or TOUR alphas
- One additional course from any business alpha, or in Economics.

C. Finance Specialization – Students electing to specialize in Finance must complete the following courses:

- FIN 321 – Investment and Security Analysis
- FIN 322 – Corporate Finance
- Two additional courses with a FIN alpha
- Two additional courses from any business alpha
- One Economics course may be substituted for one of the additional business courses.

3. General Electives (up to 15 semester hours)

Students may select up to 15 semester hours of non-business general elective courses in consultation with their advisor.

BBA with Major in Accounting

The BBA degree with Major in Accounting requires the successful completion of all core requirements for the BBA degree. Eighteen semester hours in Accounting must be earned in upper-division elective courses (numbered 300 or above), in place of the 18 semester hours in upper division business electives required as part of the BBA in General Business degree.

Accounting Major

(18 semester hours, all with "C" or better)

1. Accounting Core: 12 semester hours as follows:

- ACC 350 Intermediate Accounting I (3) (Pre: Admission to Professional Business Program, ACC 202 and junior standing)
- ACC 351 Intermediate Accounting II (3) (Pre: Admission to Professional Business Program, ACC 350 and junior standing)
- ACC 352 Individual Income Tax (3) (Pre: Admission to Professional Business Program, ACC 251 and junior standing)
- ACC 454 Auditing (3) (Pre: Admission to Professional Business Program, ACC 350)

2. Accounting Electives: 6 semester hours from the following:

- ACC 353 Cost Accounting (3) (Pre: Admission to Professional Business Program, ACC 202 and junior standing)
- ACC 354 Business Software (3) (Pre: Admission to Professional Business Program, ACC 202 and junior standing; Co-requisite registration with ACC 350)
- ACC 355 Taxation of Business Entities (3) (Pre: Admission to Professional Business Program, ACC 352 and junior standing)
- ACC 358 Governmental Accounting (3) (Pre: Admission to Professional Business Program, ACC 202)
- ACC 450 Advanced Accounting (3) (Pre: Admission to Professional Business Program, ACC 351)
- ACC 455 IT Auditing (3) (Pre: Admission to Professional Business Program, ACC 350)
- ACC 494 Special Topics in Accounting (3) (Pre: varies with topic)

Note: The State of Hawaii requires 150 semester hours of college to obtain a permit to practice as a Certified Public Accountant (CPA). Additional semester hours in business earned past the 121 semester hours required for the B.B.A. with Major in Accounting degree will apply towards this requirement.

Business Administration Minor

21 semester hours

Students pursuing non-Business degrees earn a minor in Business Administration by successfully completing:

ACC 201 Financial Accounting (3)

ACC 202 Managerial Accounting (3) (Pre: ACC 201)

ECON 130 Introduction to Microeconomics (3)

FIN 320* Principles of Business Finance (3) (Pre: ACC 201 **and one** MATH course numbered 104F, 115, 205 or higher, and BUS 290)

MGT 300* Management, Organizations and Human Behavior (3)
(Pre: COM 251, ENG 209 and BUS 290)

MGT 333* International Business Management (3)
(Pre: ECON 130 and MGT 300)

MKT 310* Principles of Marketing (3)
(Pre: ECON 130, ACC 201 and BUS 290)

*A grade of "C" or better must be earned in these courses.

For initial enrollment in upper-division (300–400-level) Business Administration courses, students pursuing a Business Administration minor must have:

1. Filed a formal declaration of intent to minor in Business Administration at least four weeks in advance of scheduled early-registration;

- Completed 50 or more earned semester credit hours at the 100-level or higher;
- Attained a cumulative grade point average of 2.50 or higher on work completed at UH Hilo (transfer students meeting other requirements may be provisionally admitted to upper-division courses during their first semester at UH Hilo, but will be required to earn at least a 2.5 GPA on their first 12 semester hours of credit at UH Hilo for continued enrollment in upper-division business courses);
- Earned certification of computer competency by the College of Business and Economics, through successful completion of a practical demonstration of those skills (Computer Competency Test); and
- Successfully completed all course-specific prerequisites for each upper-division class attempted.

Business Administration Certificate

21 semester hours

The College offers the Certificate in Business Administration to people who have already earned a baccalaureate degree in an area other than business. The coursework nearly duplicates the minor in Business Administration and allows those graduates of other programs who wish to gain a formal credential testifying to their up-to-date business management skills and knowledge an opportunity to do so. It is especially useful to those already working in business or those intending to work in an organizational situation that would like to gain a well-balanced fundamental perspective on business. At least 50% of the course work must be completed at UH Hilo. All courses are currently available and offered regularly in the Bachelor of Business Administration Degree program.

Required courses are:

- ACC 201 Financial Accounting (3)
- ACC 202 Managerial Accounting (3) (*Pre: ACC 201*)
- ECON 130 Introduction to Microeconomics (3)
- FIN 320 Principles of Business Finance (3) (*Pre: ACC 201 and one MATH course numbered 104F, 115, 205 or higher, and BUS 290*)
- MGT 333 International Business Management (3)
(*Pre: ECON 130 and MGT 300*)
- MKT 310 Principles of Marketing (3)
(*Pre: ECON 130, ACC 201 and BUS 290*)
- Any business elective at the 300–400-level*

International Studies Certificate (Tourism Concentration)

49–52 semester hours

The International Studies Certificate integrates a wide variety of existing courses into a cohesive whole focusing on international issues. This program of study is designed to prepare students for career opportunities in the new world system—a world system in which nongovernmental actors are proliferating, global communications networks multiplying, world travel expanding, and in which states are becoming increasingly interdependent. The Certificate is particularly useful for students pursuing careers in the Foreign Service, international institutions, nongovernmental international organizations, international business, and tourism. The International Studies Certificate aims both to ready students for careers in the new world system and to foster global understanding.

The International Studies Certificate requires two years of a foreign language with prerequisite preparation in General Education courses that emphasize world geography and culture. The core courses, also at the lower-division level, emphasize international political and economic structures and interrelationships. The student then chooses an area for concentrated study. Students can either choose to concentrate in the area of Tourism or in the area of International Relations (see listing under Political Science for International Relations Concentration Option). The concentrations are comprised of upper-division courses, which consider issues in a global context and stress cross-national understanding. The Certificate is notable for having a capstone seminar study or study abroad feature providing hands-on experience for the student.

The Tourism Concentration Option is intended to familiarize students with international travel and tourism in terms of the tourists themselves, their service providers, and the government policies that can facilitate or create barriers for travel or for tourism development. An interdisciplinary approach informs consideration of the economic, environmental, social and cultural aspects of international tourism. This option allows students to examine tourism from a broad policy perspective or from an enterprise perspective. It is useful for students pursuing careers in tourism hospitality businesses or other tourism-related enterprises and in governmental tourism-related organizations.

General Education Co-Requisites (12 semester hours):

Select four courses from:

- ANTH 100 Cultural Anthropology (3)
- GEOG 102 Geography of World Regions (3)
- GEOG 103 Geography and Contemporary Society (3)
- HIST 151 World Civilization: To 1500 (3)
- HIST 152 World Civilization: From 1500 (3)

Program Requirements (22 semester hours):

First year language (8 credits)

Second year language (8 credits)

Core courses (6 credits):

- POLS 242 Introduction to World Politics (3) **or**
- POLS 251 Introduction to Comparative Government (3)
- ECON 210 The Global Economy (3)

Tourism Concentration Option (12 semester hours):

TOUR 317 Marketing and Management of Travel and Tourism (3)
(*Pre: MKT 310*)

TOUR 320 Tourism Economics (3) (*Pre: ECON 130*)

TOUR 340 International Travel and Tourism Policy (3)
(*Pre: junior standing or consent of instructor*)

And select one course from the following:

- ANTH 323 Cultural and Social Change (3)
- ECON 310 Economic Development (3) (*Pre: ECON 130 and 131*)
- ECON 360 International Trade and Welfare (3)
(*Pre: ECON 130 & 131*)
- ECON 380 Natural Resource and Environmental Economics (3)
(*Pre: ECON 130*)
- GEOG 340 Principles of Land Use Planning (3)
- MKT 310 Principles of Marketing (3)
(*Pre: ECON 130 and ACC 201*)
- MGT 333 International Business Management (3)
(*Pre: ECON 130 and MGT 300*)
- POLS 335 Environmental Politics and Policy (3)

Capstone Experience (3–6 hours): See advisor for options.

Economics

Department Chair:

Tam Vu, Ph.D., tamv@hawaii.edu

College of Business and Economics Office:

Kanaka'ole Hall 270, (808) 974-7400

Web: hilo.hawaii.edu/academics/economics/

BA in Economics

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements

Required:

MATH 121 (3) Introduction to Statistics and Probability **or**
QBA 260 (3) Business Statistics

MATH 115 (3) Applied Calculus **or** MATH 205 (4) Calculus I

ECON 130 (3) Introduction to Microeconomics

ECON 131 (3) Introduction to Macroeconomics

ECON 300 (3) Intermediate Macroeconomic Theory

ECON 301 (3) Intermediate Microeconomic Theory **or**
ECON 302 (3) Managerial Economics

ECON 305 (3) The History of Economic Thought **and one** track of the following three tracks:

Sustainable Development Track:

ECON 310 (3) Economic Development

ECON 380 (3) Natural Resource and Environmental Economics

ECON 390 (3) Econometrics

And 6 semester hours in upper-division Economics courses.

International Track:

ECON 360 (3) International Trade and Welfare

ECON 361 (3) International Finance

ECON 416 (3) Asia-Pacific Economic Integration

And 6 semester hours in upper-division Economics courses.

Quantitative Track

MATH 206 (3) Calculus II

MATH 311 (3) Linear Algebra

ECON 390 (3) Econometrics

And 6 semester hours in upper-division Economics courses.

In order to earn a Bachelor of Arts degree in Economics, students must not only fulfill the requirements above for the major but also meet all of the University's other baccalaureate degree requirements. (Please see the chapter entitled Baccalaureate Degree Requirements of this Catalog.) Students wishing to make timely progress toward graduation are urged to pay careful attention to all degree requirements. In addition, when planning a schedule of courses, it is imperative to be aware of course prerequisites and the frequency with which courses are offered, information that is available in the course listing at the back of this Catalog. To ensure progress toward graduation, students are strongly encouraged to meet with an advisor each semester before registering.

Economics Minor

18 semester hours

Required:

ECON 130 Introduction to Microeconomics (3)

ECON 131 Introduction to Macroeconomics (3)

Electives: 12 semester hours of ECON 300–400-level economics courses which should include one from each group:

Group I:

- ECON 301 Intermediate Microeconomic Theory (3)
- ECON 302 Managerial Economics (3)
- ECON 305 The History of Economic Thought (3)
- ECON 360 International Trade and Welfare (3)
- ECON 370 Government Finance (3)
- ECON 380 Natural Resource and Environmental Economics (3)
- ECON 381 Labor Economics (3)
- ECON 420 Mathematical Economics (3)

Group II:

- ECON 300 Intermediate Macroeconomic Theory (3)
- ECON 310 Economic Development (3)
- ECON 340 Money and Banking (3)
- ECON 361 International Finance (3)

Daniel K. Inouye College of Pharmacy Undergraduate Program

Daniel K. Inouye College of Pharmacy (pharmacy@hawaii.edu)

Phone: (808) 933-2909; Fax: (808) 933-2974

Web: pharmacy.uhh.hawaii.edu/academics/baps/

This degree is available only to students currently enrolled in the PharmD program at UH Hilo College of Pharmacy.

Program Description

Students earning the Bachelor of Arts in Pharmacy Studies (BAPS) degree attain broad and thorough knowledge in the liberal arts and basic sciences, as well as specialized education in the field of pharmacy, both academic and experiential in nature. The BAPS degree also acknowledges the achievement of students who complete a minimum of four years of college education, including rigorous course work in the basic and pharmacy sciences, on their path to the Doctor of Pharmacy (Pharm.D.) degree. Students with a BAPS degree are well positioned to take advantage of numerous educational and career opportunities in diverse areas, including positions in pharmacy, health care, or medicine, or may continue on in research, business, and academia. **This degree is not designed to lead to licensure as a professional pharmacist and is available only to students currently enrolled in the Pharm.D. program at the UH Hilo DKICP.**

Admissions

Students must apply and be accepted to the Doctor of Pharmacy degree program (Pharm.D.) at the University of Hawaii'i at Hilo DKICP. In other words, this degree is **only** available to Pharm.D. students. Complete application instructions for the Pharm.D. program can be found online.

Bachelor of Arts in Pharmacy Studies (BAPS)

General Education Basic, Core, and Integrative Requirements

All students should consult with College of Pharmacy's academic advisors to ensure that they complete all requirements for graduation in a timely fashion. Students entering UH Hilo or the PharmD program prior to Fall 2011 and wishing to earn the Bachelor of Arts in Pharmacy Studies must meet UH Hilo's requirements in effect prior to Fall 2011 for the Basic and Area categories of General Education as well as requirements in Writing Intensive and Hawaii-Asia-Pacific categories, and all other graduation requirements.

Students entering UH Hilo or the PharmD program in Fall 2011 and thereafter and wishing to earn the Bachelor of Arts in Pharmacy Studies must meet UH Hilo's requirements that go into effect in Fall 2011 for the Basic and Area categories of General Education as well as the Integrative requirements in Writing Intensive, Hawaii-Pan Pacific, and Global and Community Citizenship, and all other graduation requirements. A list of these requirements is posted at <http://hilo.hawaii.edu/academics/gened>.

Effective Fall 2011 the new policy for which requirements the student will follow for GE and graduation requirements are: 1) By default, all students will be admitted under the catalog in force at time entering UH Hilo. 2) Students transferring in to UH Hilo from another UH System Campus are eligible to continue their educational career under the requirements in force in the catalog year in which they entered the UH System, provided there has not been a break in enrollment of more than one semester.

Major Requirements

First Professional Year: Fall

- PHPS 501 Biochemistry–Biomolecules (3)
- PHPS 505 Pharmaceutics I (3)
- PHPP 511 Culture & Inter-professional Health Care (2)
- PHPS 503 Pharmaceutical Calculations (2)
- PHPS 504 Pharmaceutical Immunology (3)
- PHPP 501 Introductory Pharmacy Practice Experiential I (1)
- PHPS 512 Introduction to the Pharmaceutical Sciences (3)

First Professional Year: Spring

- PHPS 502 Biochemistry - Metabolism (3)
- PHPP 508 Introduction to Biostatistics (3)
- PHPS 506 Pharmaceutics II (3)
- PHPS 509 Pathophysiology (4)
- PHPP 502 Introductory Pharmacy Practice Experiential II (1)
- PHPS 507 Foundation of Integrated Therapeutics and OTC drugs (3)

Second Professional Year: Fall

- PHPP 503 Introduction Pharmacy Practice Experiential (IPPE) III (1)
 - PHPP 514 Evidence Based Medicine (3)
 - PHPP 515 Integrated Therapeutics I (7)
 - PHPS 511 Pharmacokinetics (3)
 - Electives (2)
- (A current list of electives can be found in the UH Hilo CoP handbook)*

Second Professional Year: Spring

- PHPP 504 Introduction Pharmacy Practice Experiential (IPPE) IV (1)
 - PHPP 520 Pharmacy Law and Ethics (3)
 - PHPP 523 Wellness and Disease Prevention (2)
 - PHPP 516 Integrated therapeutics II (7)
 - PHPS 591 Basic and Applied toxicology (3)
 - Electives (2)
- (A current list of electives can be found in the UH Hilo CoP handbook)*

Minimum semester hours required for the baccalaureate degree: 120 hours.

Ka Haka 'Ula O Ke'elikōlani

College of Hawaiian Language

Director:

Keiki Kawai'ae'a, Ph.D. (keiki@hawaii.edu)
Hale'ōlelo (3355) Room 233
200 W. Kāwili Street, Hilo, Hawai'i 96720-4091

Phone: 932-7360

Web: www.olelo.hawaii.edu/khuok/

Professors:

Kalena Silva, Ph.D.
William H. Wilson, Ph.D.

Associate Professors:

Makalapua Alencastre, M.A.
Alohalani Housman, M.Ed.
Noelani Iokepa-Guerrero, Ph.D.
Kauanoē Kamanā, Ph.D.
Keiki Kawai'ae'a, Ph.D.
Hiapo K. Perreira, Ph.D.
Scott Saft, Ph.D.

Assistant Professors:

Jason D. Cabral, M.A.
Kekoa Harman, M.A.
Larry L. Kimura, Ph.D.
Yumiko Ohara, Ph.D.

Academic Division

Division Chair:

William H. Wilson, Ph.D. (wilsonwi@hawaii.edu)
Hale'ōlelo (3355) Room 156
200 W. Kāwili Street, Hilo, HI 96720-4091

Phone: 932-7234 or 932-7360

Web: www.olelo.hawaii.edu/khuok/

The academic programs division of Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language emphasizes Hawaiian language, traditional Hawaiian culture, indigenous language and culture revitalization, linguistics and education in a Hawaiian medium school environment. It also includes a P-12 laboratory school program.

For information on the College's graduate programs, including the Kahuawaiola Indigenous Teacher Education Program, please see the graduate section of this catalog.

Hawaiian Studies

Department Chair:

Jason D. Cabral, M.A. (jasoncab@hawaii.edu)
Hale'ōlelo (3355) Room 163
200 W. Kāwili Street, Hilo, HI 96720-4091

Phone: 932-7433 or 932-7360

Web: www.olelo.hawaii.edu/khuok/

Student Learning Outcomes

1. Demonstrate oral and written comprehension and grammatically correct use of Hawaiian at the ACTFL levels as follows:
 - HAW 101-102 - Novice High
 - KHAW 103-104 - Intermediate Low
 - KHAW 203-204 - Intermediate Mid
 - KHAW 303-304 - Intermediate High
 - KHAW 403-404 - Advanced Low
2. Speak and write with a degree of fluency adequate to carry on a life and career speaking Hawaiian.
3. Apply knowledge of the language to give an effective speech in Hawaiian (minimally at the ACTFL level of Advanced Low) and to write an effective academic paper in Hawaiian of at least four thousand words on pertinent topics that is organized succinctly with an introduction, body, and conclusion that includes footnotes and citations.
4. Explain and apply to concrete situations the Hawaiian outlook on the world, as expressed in the basic philosophy of the college, Ke Kumu Honua Maui Ola.
5. Practice appropriate Hawaiian cultural behavior (e.g. protocol, body language, participation in the ceremonies of Ka Haka 'Ula O Ke'elikōlani).
6. Locate and utilize library, on-line and community resources to write a cohesive academic paper, prepare a presentation, or give appropriate diversiform speeches.
7. Identify and explain major aspects of the grammatical & phonological structure of a sample of Hawaiian.
8. Identify, explain, and perform major aspects of Hawaiian chant (oli), music (puolo), and dance (hula) within respective courses and College-wide activities.
9. Identify specific important aspects of the evolution of the Hawaiian language (both historically and contemporarily), and its relationship to the current cultural, social, and political standing of Hawaiians.
10. Identify and explain Hawaiian cultural concepts specifically related to the physical Hawaiian environment as exhibited in course syllabi of HWST 111, 211, and 213.

BA in Hawaiian Studies

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

Option I (Continuing the Culture)

Required courses (26-28 semester hours)

- HAW 303–304 Third-Level Hawaiian (8)
- HAW 403–404 Fourth-Level Hawaiian (8)
- HAW 490 Base-Level Fluency Hawaiian Medium Education (1) OR HAW 333 Applied Skills (3)
- HWST 205 Hawaiian Music in Action (2)
- HWST 405 Hana No‘eau (1)
- HWST 496 Hawaiian Studies Seminar (3)
- HWST 111 The Hawaiian ‘Ohana (3) or HWST 176 The History and Development of Hawaiian Music (3) or HWST 211 Hawaiian Ethnobotany (3) or HWST 213 Hawaiian Ethnzoology (3)

Electives (15 semester hours)

12 semester hours selected from either (A) or (B) or (C):

(A) Language Emphasis

- HAW 453 Hawaiian Phonetics and Phonology (3)
- HAW 454 Hawaiian Morphology and Syntax (3)
- HAW 455 Hawaiian: A Polynesian Language (3)
- HWST 461 Pana Hawai‘i (3)
- HWST 462 Haku Mele (3)

(B) Performing Arts Emphasis

- HWST 461 Pana Hawai‘i (3)
- HWST 462 Haku Mele (3)
- HWST 471 Mele ‘Auana (3)
- HWST 472 Hula ‘Auana (3)
- HWST 473 Oli/Mele Kahiko (3)
- HWST 474 Hula Kahiko (3)

(C) Oratory and Literature Emphasis

- HWST 461 Pana Hawai‘i (3) or HWST 462 Haku Mele (3)
- HWST 463 Introduction to Hawaiian Literature (3)
- HWST 464 Hawaiian Composition (3)
- HWST 465 Ha‘i‘olelo Ku‘una (3)
- HWST 473 Oli/Mele Kahiko (3)

Plus 3 semester hours taken from any 300- or 400- level HAW or HWST course

Option II (Monitoring the Culture)

Required courses (26-28 semester hours)

- HAW 303–304 Third-Level Hawaiian (8)
- HAW 403–404 Fourth-Level Hawaiian (8)
- HAW 490 Base-Level Fluency Hawaiian Medium Education (1) or HAW 333 Applied Skills (3)
- HWST 111 The Hawaiian ‘Ohana (3)
- HWST 205 Hawaiian Music in Action (2)

HWST 405 Hana No‘eau (1)

HWST 496 Hawaiian Studies Seminar (3)

Electives (15 semester hours)

12 semester hours selected from either (A) or (B) below, at least 9 of which must be in courses numbered 300 and above. Special topics and other courses pertaining to Native Hawaiians or Hawai‘i also may be counted as electives, if previous permission is obtained from the department chair.

(A) Social Environment

- ANTH/ENG/LING 347 Pidgins and Creoles (3)
- ANTH 357 Change in the Pacific (3)
- ANTH 385 Hawaiian and Pacific Prehistory (3)
- ANTH 386 Hawaiian Culture before 1819 (3)
- ANTH 387 Modern Hawaiian Culture(1819 to present) (3)
- ECON 330 Hawaiian Economy (3)
- ENG 323 Literature of Hawai‘i (3)
- ENG 430 Pacific Islands Literature (3)
- HWST 175 Introduction to the Music of Polynesia (3)
- HWST 176 The History and Development of Hawaiian Music (3)
- HIST 274 History of Hawai‘i (3)
- HIST 316 Pacific History I (3)
- HIST 317 Pacific History II (3)
- HIST 332 Hawaiian Kingdom (3)
- HIST 333 Twentieth Century Hawai‘i (3)
- KANT 486 Mo‘omeheu Hawai‘i Ku‘una (3)
- POLS 337 Politics of Hawai‘i (3)
- SOC 370 Political Economy of Hawai‘i

(B) Natural Setting

- BIOL/MARE 156 Natural History and Conservation of the Hawaiian Islands (3)
- BIOL/MARE 156L Natural History Field Trips (1)
- BIOL/MARE 171L Marine Biology Lab (1)
- GEOG/PHYS 120 Weather and Climate of Hawai‘i (3)
- GEOG 332 Geography of the Hawaiian Islands (3)
- GEOL 205 Geology of the Hawaiian Islands (3)
- HWST 211 Hawaiian Ethnobotany (3)
- HWST 213 Hawaiian Ethnzoology (3)
- HWST 461 Pana Hawai‘i (3)
- MARE 190 Hawaiian Marine Field Experience (2)
- MARE 201L Oceanography Lab (2)
- MARE 325 Coral Reef Ecology (Hawaiian & Global Reefs) (3)
- MARE/BIOL 371L Biology of Marine Invertebrates Lab (Hawaiian Forms) (1)
- MARE 372L Biology of Marine Plants Lab (Hawaiian Forms) (1)
- MARE/BIOL 384L Biology of Marine Fishes Lab (Hawaiian Forms) (1)

Plus 3 semester hours taken from any 300- or 400-level HAW or HWST course

Total in Group 2: 43 Semester Credits

Minimum semester hours required for the B.A. in Hawaiian Studies: 120 hours.

Notes

1. Students must earn credit for HAW 490 and at least a 2.0 GPA in all other courses required for the major.
2. At least 45 semester hours must be earned in courses at the 300–400-level.
3. To earn a Bachelor of Arts degree in Hawaiian Studies, students must fulfill the requirements for the major and meet all of the University’s other baccalaureate degree requirements. (Please see the chapter on Baccalaureate Degree Requirements in the Catalog.)

- Students should always check course prerequisites and the frequency with which courses are offered.
- To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

Hawaiian Studies Minor

23 semester hours

1. Required Courses (11 semester hours)

- 8 semester hours taken from any Hawaiian Language course not including HAW 101-102 (8) Elementary Hawaiian I & II and HAW 105 Intensive Elementary Hawaiian
- HWST 111 The Hawaiian 'Ohana (3) or HWST 176 The History and Development of Hawaiian Music (3) or HWST 211 Hawaiian Ethnobotany (3) or HWST 213 Hawaiian Ethnozoology (3)

2. Electives (12 semester hours)

- 12 semester hours selected from any 300- or 400-level requirement or elective of the B.A. in Hawaiian Studies Options I or II

Note: Students in the B.A. in Hawaiian Studies program are not eligible to pursue the minor, since the minor is designed for students in other degree programs. Students pursuing the minor may also pursue certificates offered within Ka Haka 'Ula O Ke'elikōlani.

Hawaiian Culture Certificate

Contact:

Jason D. Cabral, M.A. (jasoncab@hawaii.edu)
Hale'ōlelo (3355) Room 163
200 W. Kāwili Hilo, HI 96720-4091

Phone: 932-7433 or 932-7360

19 semester hours

Required Courses (4 semester hours)

KHAW 104 First Level Partial Hawaiian Immersion (4) **or** HAW 201 Intermediate Hawaiian I (4) or any higher level language course equaling 4 semester hours

Core Electives (3 semester hours)

3 semester hours taken from:

- HWST 111 The Hawaiian 'Ohana (3)
- HWST 176 The History and Development of Hawaiian Music (3)
- HWST 211 Hawaiian Ethnobotany (3)
- HWST 213 Hawaiian Ethnozoology (3)

Related Electives (12 semester hours)

12 semester hours taken from:

- ANTH 385 Hawaiian and Pacific Prehistory (3)
- ANTH 386 Hawaiian Culture (before 1819) (3)
- ANTH 387 Modern Hawaiian Culture (1819 to present) (3)
- HWST 205 Hawaiian Music in Action (2)
- HWST 461 Pana Hawai'i (3)
- HWST 471 Mele 'Auana (3)
- HWST 472 Hula 'Auana (3)
- HWST 473 Oli/Mele Kahiko (3)
- HWST 474 Hula Kahiko (3)
- HIST 274 History of Hawai'i (3)
- other courses from the core elective list.

Notes:

The Certificate in Hawaiian Culture may be pursued by Hawaiian Studies and other discipline majors and by those pursuing any other certificate or certificates at UH Hilo. Credits may be shared once or more than once between this certificate and other degrees and certificates on campus, but no more than 9 credits can be shared between the Certificate in Hawaiian Culture and any single one of the following: the Hawaiian Studies B.A., the Certificate in Hawaiian Language, the Certificate in Multidisciplinary Hawaiian Studies.

Upon agreement between Ka Haka 'Ula O Ke'elikōlani and I Ola Haloa at Hawai'i Community College (HawCC), up to six semester hours in courses at the 100 level and above taken in the HawCC Hawai'i Lifestyles Degree Program may be applied. Students should speak to a Hawaiian Studies advisor about the process for receiving permission to apply such courses to this certificate and for enrolling in such courses.

Hawaiian Language Certificate

Contact:

Jason D. Cabral, M.A. (jasoncab@hawaii.edu)
Hale'ōlelo (3355) Room 163
200 W. Kāwili Hilo, HI 96720-4091

Phone: 932-7433 or 932-7360

23 semester hours

Required Courses (7 semester hours)

KHAW 204 Second Level University Hawaiian Immersion (4) **or** KHAW 233 Second Level Hawaiian for Speakers (4)
LING 102 Introduction to Linguistics (3)

Electives (12 semester hours)

12 semester hours taken from those below or others approved by the Hawaiian Studies Department Chair with no less than 6 semester hours through Hawaiian:

- HAW 303-304 Third Level Hawaiian (4 each)
- HAW 403-404 Fourth Level Hawaiian (8) (2 semesters)
- HAW 453 Hawaiian Phonetics and Phonology (3)
- HAW 454 Hawaiian Morphology and Syntax (3)
- HAW 455 Hawaiian: A Polynesian Language (3)
- HAW 494 Special Advanced Topics in Hawaiian (3)
- HAW 499 Directed Studies (1-3)
- HWST 462 Haku Mele (3)
- HWST 463 Introduction to Hawaiian Narrative Literature (3)
- HWST 464 Hawaiian Composition (3)
- HWST 465 Ha'i'ōlelo Ku'una (3)
- KIND 240 Culture Revitalization Movement (3)
- LING 351 Methodology of Foreign Language Teaching (3)
- LING 442 Languages in Hawai'i (3)

Note:

Students pursuing a B.A. in Hawaiian Studies may also pursue the Certificate in Hawaiian Language provided they do not cross count HAW 303-304 and HAW 403-404. The Certificate in Hawaiian Language may be pursued by Hawaiian Studies and other discipline majors and by those pursuing any other certificate or certificates at UH Hilo. Credits may be shared once or more than once between this certificate and other degrees and certificates on campus, but no more than 9 credits can be shared between the Certificate in Hawaiian Language and any single one of the following: the Hawaiian Studies B.A., the Certificate in Hawaiian Culture, the Certificate in Multidisciplinary Hawaiian Studies.

Multidisciplinary Hawaiian Studies Certificate

Contact:

Jason D. Cabral, M.A. (jasoncab@hawaii.edu)
Hale'ōlelo (3355) Room 163
200 W. Kāwili Hilo, HI 96720-4091

Phone: 932-7433 or 932-7360

26 semester hours

Required Courses (8 semester hours)

HAW 101-102 Elementary Hawaiian I & II **or** any higher numbered Hawaiian Language course (8)

Core Electives (3 semester hours)

3 semester hours taken from:

- HWST 111 The Hawaiian Ohana (3)
- HWST 176 The History and Development of Hawaiian Music (3)
- HWST 211 Hawaiian Ethnobotany (3)
- HWST 213 Hawaiian Ethnozoology (3)

Related Electives (15 semester hours)

15 semester hours with no more than 6 semester hours of the same alpha

- Courses taught through English in the Monitoring the Culture track of the Hawaiian Studies B.A.
- Courses pertaining to Native Hawaiians or Hawaii, including courses taught through Hawaiian, if previous permission is obtained from the Hawaiian Studies department chair

Note:

The Certificate in Multidisciplinary Hawaiian Studies may be pursued by Hawaiian Studies and other discipline majors and by those pursuing any other certificate or certificates at UH Hilo. Credits may be shared once or more than once between this certificate and other degrees and certificates on campus, but no more than 9 credits can be shared between the Certificate in Multidisciplinary Hawaiian Studies and any single one of the following: the Hawaiian Studies B.A., the Certificate in Hawaiian Culture, the Certificate in Hawaiian Language.

Linguistics

Coordinator:

Scott Saft, Ph.D. (saft@hawaii.edu)
Portable Building 17 (PB-17), Room 5

Phone: (808) 932-7221

Web: www.olelo.hawaii.edu/khuok/

Professors:

William H. Wilson, Ph.D.

Associate Professors:

Kauano'e Kamanā, Ph.D.
Scott Saft, Ph.D.
Yumiko Ohara, Ph.D.
Jason D. Cabral, M.A.

BA in Linguistics

Group 1. General Education Basic, Area, and Integrative Requirements.

Students may choose to graduate under the General Education Basic, Area, and Integrative requirements and graduation requirements in force at the time they entered the UH System, when they entered UH Hilo, or when they graduate, provided there is no break in enrollment lasting longer than one semester.

Students should meet with their academic advisor to ensure that they enroll in courses that will enable them to meet these requirements as well as requirements for the major and for graduation. Some courses may meet both General Education requirements and major requirements.

The new GE basic, core, and integrative requirements and lists of certified courses are posted at hilo.hawaii.edu/academics/gened/.

Group 2. Major Requirements (and Assigned Credits)

46 Semester Credits

Core Courses

- LING 102 Introduction to Linguistics (3)
- LING 311 Phonology (3)
- LING 321 Morphology and Syntax (3)
- LING 490 Research and Methods in Linguistics (3)

Select one of the 3 areas below as an area of concentration and take at least 3 courses in that area. From the other 2 areas, take at least 1 course. (15)

Structure/Grammar

- LING 345: Historical and Comparative Linguistics
- ENG 324: Modern English Grammar
- LING 410: Semantics and Pragmatics
- JPNS 451: Structure of Japanese I
- JPNS 452: Structure of Japanese II
- KHAW 453: Hawaiian Phonetics & Phonology
- KHAW 454: Hawaiian Morphology and Syntax

Applied/Sociolinguistics

- LING 347: Pidgins and Creoles
- LING 356: Language and Gender
- LING 412: Discourse Analysis
- LING 432: Critical Applied Linguistics **
- LING 442: Languages in Hawai'i **
- ANTH 331: Language in Culture & Society
- ENG 350: Second Language Acquisition Theory
- JPNS 345: Methods for Teaching Japanese

Language Maintenance, Revitalization, and Policy

- KIND 240: Culture Revitalization Movement
- LING 432: Critical Applied Linguistics **
- LING 442: Languages in Hawai'i **

- LING 434: Indigenous Languages of North America
- LING 445: Explorations in Bilingual and Immersion Education
- KHAW 455: Hawaiian: A Polynesian Language
- KHAW 496: Hawaiian Studies Seminar

*** Listed in two areas but counts toward only one.*

Three additional semester hours in Linguistics (or other related and approved field) at the 300 level or above (3).

16 university credits in second/auxiliary language study, 4 credits of which must be in a different language from the other credits. In certain circumstances, students may substitute demonstrated fluency in a second/auxiliary language in lieu of up to 8 credits. (16).

Total Semester Hours Required for the B.A. in Linguistics: 120

Notes

1. Students must earn at least a 2.0 GPA in major requirement courses.
2. At least 45 semester hours must be earned in courses at the 300-400 level.
3. To earn a Bachelor of Arts degree in Linguistics, students must fulfill the requirements for the major AND meet all of the University's other baccalaureate requirements. (Please see the chapter on Baccalaureate Degree Requirements in the Catalog.)
4. Students should always check course prerequisites and the frequency with which courses are offered.
5. To ensure progress toward degree completion, **students are strongly encouraged to meet with an advisor each semester before registering.**

Minimum semester hours required for the B.A. in Linguistics: 120 hours.

Linguistics Minor

26 Semester Hours

Requirements:

A total of **18 semester hours** of linguistics courses including:

- LING 102 Introduction to Linguistics (3)
- LING 311 Phonology (3) or LING 321 Morphology and Syntax (3)
- **Twelve additional semester hours** in Linguistics courses, of which **6** semester hours must be at the 300-level or above.

One year of college-level foreign language study or the equivalent (**8 semester hours**).

Contemporary Indigenous Multilingual Certificate

Coordinator:

Scott Saft, Ph.D. (saft@hawaii.edu)
Portable Building 17 (PB-17), Room 5
200 W. Kāwili Street, Hilo, HI 96720-4091

Phone: 932-7221 or 932-7360

21-25 semester hours

Required Courses (6 semester hours)

- LING 102 Introduction to Linguistics (3)
- KIND 240 Language and Culture Revitalization Movements (3)

Core Electives (6-8 semester hours)

6-8 semester hours taken from:

- LING 133 (alpha) Elementary Indigenous Languages for Speakers (3)
- LING 233 (alpha) Intermediate Indigenous Languages for Speakers (3)
- KHAW 103 First Level Transitional Hawaiian Immersion (4)
- KHAW 104 First Level Partial Hawaiian Immersion (4)
- KHAW 133 First Level Hawaiian for Speakers (4)
- KHAW 233 Second Level Hawaiian for Speakers (4)
- Transfer semester hours in an indigenous language other than Hawaiian (i.e. Lakota, Samoan) from a tribal college or other college

Related Electives (9-11 semester hours)

9-11 semester hours taken from:

- LING 442 Languages in Hawai'i (3)
- LING 347 Pidgins and Creoles (3)
- LING 331 Languages in Culture and Society (3)
- Courses in indigenous languages other than Hawaiian
- Courses pertaining to indigenous multilingualism with prior permission from the Hawaiian Studies department chair
- Hawaiian language courses; however, no more than a total of 8 semester hours may be applied to this certificate

Note:

This certificate may be taken by linguistics majors or any other major.

College of Continuing Education and Community Service

For information, please contact:

Office of the Dean (ccecs@hawaii.edu)

Location: 891 Ululani St., Hilo

Mailing address: UH Hilo, 200 W. Kāwili St., Hilo, HI 96720

Tel: (808) 974-7664; **Fax:** (808) 933-8863

Web: hilo.hawaii.edu/academics/ccecs/

Program	Phone
Summer Session	(808) 974-7664
English Language Institute	(808) 933-8855
Fitness for Life	(808) 974-7664
SeniorNet	(808) 974-7603
North Hawai'i Education & Research Center (NHERC)	(808) 775-8890

Mission of CCECS

The College of Continuing Education and Community Service (CCECS) serves as the outreach and extramural arm of the University. CCECS offers both credit and noncredit classes and programs in collaboration with UH Hilo's colleges and schools, including English language skills for international students. CCECS also provides continuing education outreach programs to the Hawai'i Island community and supports academic programs and faculty in developing online courses and programs.

CCECS Programs

Credit programs include the University's Summer Session, the English Language Institute, Summer Travel Study programs, support for UH Hilo distance education programs, teacher education classes, and outreach classes through the North Hawai'i Education and Research Center in Honoka'a.

Non-credit programs consist of Fitness for Life, summer travel study, customized courses to meet specific community needs, and SeniorNet, a national program providing computer training to those aged 55 and older.

Summer Session

Web: hilo.hawaii.edu/summer/

Summer Session provides students with a unique multi-cultural experience. Credit and non-credit courses as well as special events are offered. Summer allows the opportunity for new students to get an early start on their college careers and for continuing students to accelerate their academic progress, spend time concentrating on one course, or taking a course that is exclusively offered in the summer. Summer also allows students a chance to interact with a variety of individuals or groups of visiting students from abroad and the mainland U.S.

Special programs in marine science, astronomy, volcanology and other sciences are offering, allowing students to take advantage of the "living laboratory" of Hawai'i Island.

Travel Study Programs

Web: hilo.hawaii.edu/academics/ccecs/travelstudy.php

For over 20 years a variety of international and mainland United States study groups have experienced Hawai'i Island learning through travel study programs. Study groups come from China, Japan, Taiwan, Korea, and other countries. Travel study programs have included some or all of the following: ESL/English conversation classes, volcano studies, Hawaiian studies, cultural diversity and social organization, and alternative energy technology. Travel study programs are custom- designed to fit the needs of requesting client groups.

North Hawai'i Education and Research Center (NHERC)

Farrah-Marie Gomes, Director (fmgomes@hawaii.edu)

45-539 Plumeria St., Honokaa, HI 96727

Tel: (808) 775-8890; **Fax:** (808) 775-1294

Web: hilo.hawaii.edu/academics/nherc/

The North Hawai'i Education and Research Center (NHERC) is UH Hilo's outreach center located in Honoka'a, 40 miles away from the main campus. The Center opened in May 2006. NHERC was designed to serve the approximately 20,000 residents in North Hawai'i from Laupahoehoe through the Hamākua Coast to Kohala and Waikoloa. The five core missions of NHERC include:

- Serving as a distance learning center for UH Hilo programs;
- Providing higher education outreach services to the North Hawai'i region;
- Providing lifelong learning opportunities to the North Hawai'i region;
- Serving as a base station for field research in the North Hawai'i region;
- Serving as a community center.

NHERC currently features a computer lab, multi-purpose conference room, student lounge, classrooms, staff offices, and reception and work areas. Students are now able to pursue their first two years and achieve all of their general education requirements at NHERC. Community users may also utilize the facility for meetings, trainings, and workshops.

The Heritage Center is NHERC's most recent addition. The vision for the NHERC Heritage Center is to be an active educational facility that will foster pride and perpetuate the diverse heritage of Hamakua and North Hawai'i while providing the community with a foundation to thrive in the future. The Heritage Center will also train students and community members in curatorial practices, museum exhibit development and heritage management.

Fitness for Life

Web: hilo.hawaii.edu/academics/ccecs/fitness/

The Fitness for Life program offers non-credit courses for students of all ages, lifestyles, and skill levels. Courses range widely, and include health and wellness courses, physical fitness, dance, the arts and literature, languages, and more. There are fall, spring, and summer catalogs.

Contact CCECS at (808) 974-7664 for more information and current offerings or visit our webpage at hilo.hawaii.edu/academics/ccecs/fitness/.

Partnering with CCECS, the Hilo SeniorNet Learning Center offers affordable computer classes for people over 50 taught by seniors for seniors. Hilo SeniorNet is part of SeniorNet, a non-profit educational organization with over 200 learning centers across the United States, Canada and Japan. For information on this program, call (808) 974-7603 or visit the SeniorNet website at www.seniornethilo.org/.

English Language Institute (ELI)

Julie Mowrer, Director

University of Hawai'i at Hilo
200 W. Kāwili St. Hilo, HI 96720-4091

Phone: (808) 933-8855; **Fax:** (808) 933-8863

Email: jmowrer@hawaii.edu

Web: hilo.hawaii.edu/academics/eli/

Students come from over 40 countries and territories to take classes at UH Hilo. The campus has the highest percentage of international students of any of the ten campuses in the University system. Preparatory to entering American education, many students opt to take specialized classes to enhance English language skills. Small class sizes provide specialized instruction, language labs, tutoring sessions, excursions, and experiences in the rich cultural and natural environment of Hawai'i Island. The mission of the ELI is to provide English language instruction to non-native speakers of English to prepare them for university study.

Courses are offered at three levels of proficiency in listening/speaking, reading, writing, and grammar. Students who are admitted to the English Language Institute as an alternative to admission to a degree program are required to enroll in ESL courses as directed by the Institute until they have completed the ESL sequence prescribed for them. Such students may enroll in additional courses only with the consent of both of the instructor and the ELI Director. ELI courses, while carrying administrative credit, do not count toward graduation from UH Hilo. The courses are geared to providing intensive English instruction in order to prepare international students for the rigors of undergraduate education at UH Hilo.

Students exiting the ELI program move into the regular undergraduate and graduate degree programs of the University. Depending on their ability levels, the ELI Director advises students to concurrently register for ELI and University classes. For a complete listing of courses and programs, see the English Language Institute section of the CCECS Web site. ESL courses offered in the ELI program are also described in the course list at the back of this Catalog. International students should also see the Web page of the UH Hilo International Student Services Office.

Undergraduate Courses

How to Read Course Descriptions

Courses are described using the following format:

- CRS □ NUM □ Title □ (cr.) □ (hrs/wk) □ (freq.)
- Full course description. □ Pre: pre-requisites. □ (Same as X-List)
- Course subject
- Course number
- Course title
- Number of semester hours (credits)
- Contact hours per week if non-lecture
- (if applicable) Expected frequency course is offered:
 - (S) Every semester
 - (Y) Yearly
 - (AY) Alternate years
 - (IO) Infrequently offered
 - (Summer) Summer sessions only
- Full description of the course.
- (if applicable) Prerequisites, co-requisites, recommended preparation or other requirements
- (if applicable) Cross-listed courses (equivalent courses offered through another subject heading)

Special notations used are as follows:

- (1-3), for example = the number of semester hours, in this example, may be 1, 2, or 3, as determined by the instructor at the time of offering.
- (Arr.) = the number of semester hours is arranged by the instructor.

Certain number endings are reserved for particular types of courses:

- "94" courses are Special Topics Courses.
- "95" courses are Seminars.
- "96" courses are Internship Courses.
- "97" and "98" courses are Experimental Courses offered only for one year on that basis ("97" is usually offered in the Fall and "98" in the Spring).
- "99" courses are Research and Directed Studies Courses.

Accounting (ACC)

College of Business and Economics

ACC 201 Intro to Financial Accounting (3) An introduction to accounting principles and practices used to record and communicate financial information. Analyze methods for valuing assets, liabilities, and equity of an organization.

Pre: Placement in MATH 104F or higher and Sophomore standing.

ACC 202 Intro to Managerial Accounting (3) An introduction to managerial accounting methods for evaluating performance including cost accounting, budgeting, break-even analysis, standard cost systems and reporting for internal decision making.

Pre: ACC 201

ACC 350 Intermediate Acc I (3) The accounting process and the application of generally accepted accounting principles to assets and liabilities. Emphasis upon accounting theory.

Pre: Admission to Professional Business Program, ACC 202 and junior standing.

ACC 351 Intermediate Acc II (3) The application of generally accepted accounting principles to accounting for owner's equity, long-term investments and debt, funds flow, and financial statement analysis.

Pre: Admission to Professional Business Program, ACC 350, and junior standing.

ACC 352 Indiv Income Tax (3) Principles and practices involved in the determination of federal income taxation and tax planning as it applies to individuals including the concept of gross income, exclusions, deductions, credits, property transactions and sole proprietorships.

Pre: Admission to Professional Business Program, ACC 251, and junior standing.

ACC 353 Cost Accounting (3) Cost accounting system output relevant to managerial decision making, planning and control. Topics include job order and process costing, direct and standard cost systems, with emphasis on application and analysis of cost.

Pre: Admission to Professional Business Program, ACC 251 and junior standing.

ACC 354 Business Software (3) Practical applications of general ledger/bookkeeping for small businesses. Firms of various industries will be used as examples. Focus will be on internal controls, accounting tasks, and comparative product analysis. Comparisons will be made from the standpoint of controls, suitability for task, ease of use, and functionality.

Pre: Admission to Professional Business Program, ACC 251, junior standing. Co-requisite registration with ACC 350.

ACC 355 Taxation of Business Entities (3) Principles and practices involved in the determination of federal taxation of business entities including corporations, partnerships, and LLC's. Calculation of business income, business credits, deductions, loss carry-forwards and tax planning for business owners will be covered.

Pre: Admission to Professional Business Program, ACC 352, and junior standing.

ACC 358 Governmental Accounting (3) Accounting principles as applied to non-profit organizations, including government. Emphasis on budgetary control and fund accounting.

Pre: Admission to Professional Business Program, and ACC 351.

ACC 400 Internship in Accounting (3) Supervised on-the-job experience in an accounting position in business or government agency. Comprehensive report by student, meetings with faculty adviser, and performance appraisal from employer required. (Same as BUS 400).

Pre: ACC 351; Minimum cumulative GPA of 3.00; compatibility with career interests; pre-approved job placement, internship contract and instructor's consent.

ACC 450 Advanced Accounting (3) The application of generally accepted accounting principles to specialized accounting entities: partnerships, branches, affiliated companies, estates and trusts; and to special topics including consolidations.

Pre: Admission to Professional Business Program, ACC 351.

ACC 454 Auditing (3) Auditing concepts including standards, objectives, and ethics for external auditors. Emphasis on reporting standards, internal control, evidence, statistical sampling, and EDP audits.

Pre: Admission to Professional Business Program, ACC 351.

ACC 455 IT Audit (3) Audits of accounting information systems, including enterprise systems. Generally accepted IT audit standards, frameworks, tools and methods.

Includes the study and use of computer-assisted audit tools and techniques (CAATTS). *Pre:* Admission to Professional Business Program and ACC 454.

ACC 456 Advanced Auditing (3) This is a case-based auditing course that expands on topics introduced in Audit (ACC 454). This course will take students through audit cases individually and in teams. Students will examine cases involving current and classic frauds, cases in which there are large unintentional errors, and cases in which the financial records are fairly stated.

Pre: Admission to Professional Business Program, ACC 350, ACC 351, and ACC 454.

ACC x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

ACC x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

Administration of Justice (AJ)

College of Arts and Sciences

AJ 101 Intro to Admin of Justice (3) This course focuses on history, philosophy, and language of the criminal justice system. The role of law enforcement, prosecutor, public defender, courts, and corrections is examined. Social aspects of change and how it affects the criminal justice system also explored.

Pre: Placement in ENG 100. Offered in conjunction with Hawai'i Community College.

AJ 103 Criminal Investigations I (3) This is an introductory course in criminal investigations. The nature of investigations, fingerprint classification, the role of the laboratory, and specific offense investigation will be explored. The class will also discuss interview and interrogation and search and seizure techniques.

Pre: Placement in ENG 100. Offered in conjunction with Hawai'i Community College.

AJ 104 CSI: Violent Crime Forensics (3) Advanced course work in forensic science (Legal Scientific Investigation), with its contributions to both Crime Scene Investigations and Laboratory Analysis. Specific field and laboratory investigative techniques in violent crimes and other major felonies will be explored.

Pre: AJ 103. Offered in conjunction with *Hawaii Community College*.

AJ 150 The Correctional Process (3) This course examines the history of punishment and corrections. The class discusses laws, records, inmate classification, treatment programs, disciplinary procedures and supervisory techniques.

Offered in conjunction with *Hawaii Community College*.

AJ 170 Intro to Private Security (3) This course surveys the concepts and issues in the administration of security. Defines public versus private security roles for retail business, industry, and governmental agencies. Provides an overview of the functions of various security activities.

Pre: placement in ENG 100. Offered in conjunction with *Hawaii Community College*.

AJ 180 Intro to Homeland Security (3) An examination of the history of terrorism, focusing on the terrorists, who they are, and how they operate. Responses to domestic and international terrorism will be discussed along with analyzing future trends.

Pre: AJ 101. Offered in conjunction with *Hawaii Community College*.

AJ 208 Criminology (3) This course explores crime and the body of knowledge regarding it as a social phenomenon. An emphasis is placed on the analysis of crime, crime causation, crime variables, impact on society, and societal reactions to crime.

Pre: placement in ENG 100. Offered in conjunction with *Hawaii Community College*.

AJ 210 Juvenile Justice (3) This course focuses on principles and procedures of arrest, detention, petition, summons, records, and adjudication of the juvenile offender. It introduces the organization and function of the police juvenile unit, community diversion practices and organization of the Family court.

Pre: placement in ENG 100. Offered in conjunction with *Hawaii Community College*.

AJ 220 Constitutional Law (3) The U.S. Constitution is examined as a basis of arrest, search, seizure, interrogation, use of force and civil rights. U.S. Supreme Court cases and *Hawaii* Court cases are examined to illustrate the court's interpretive process.

Pre: AJ 101. Offered in conjunction with *Hawaii Community College*.

AJ 221 Criminal Law (3) Studies history and philosophy of criminal law. Examines United States Constitution, especially the Bill of Rights. Considers nature of law, legal institutions, criminal court procedures, and offenses against persons and property. Includes case briefs.

Pre: AJ 101. Offered in conjunction with *Hawaii Community College*.

AJ 233 Police Organization & Mgmt (3) This course studies the principles of organization and administration of policing. Overviews of operations and activities of various divisions, bureaus, training and selection procedures, planning, and research are discussed.

Pre: placement in ENG 100. Offered in conjunction with *Hawaii Community College*.

AJ 234 Police and Community Relations (3) This course acquaints the student with the role of police in government and the critical importance of effective community relations. The dynamics of race relations and other current social problems that directly relate to the law enforcement community are explored.

Pre: placement in ENG 100. Offered in conjunction with *Hawaii Community College*.

AJ 250 Practice/Proced in Corrections (3) This course will provide students with the basic training skills necessary to enhance their opportunities to secure a job in the high demand field of corrections. The course will focus on such areas as the history and philosophy of corrections, the role of the correctional officer, legal aspects of corrections, communication and writing skills, as well as basic security procedures.

Pre: AJ 101 and AJ 150. Offered in conjunction with *Hawaii Community College*.

AJ 256 Domestic Violence & Child Abuse (3) This course focuses on domestic violence and child abuse. The cycle of violence, causes, effects and symptoms of child abuse will be explored. Legal, public policy, criminal justice, health and social services responses and interventions to family, child and intimate partner abuse will be examined.

Pre: placement in ENG 100. Offered in conjunction with *Hawaii Community College*.

AJ 280 Current Issues (3) Examination of recent textual materials, government reports, and problems within the criminal justice system and how it affects change within American society and the world. Includes preparation of a formal research essay.

Pre: AJ 101 and ENG 100. Offered in conjunction with *Hawaii Community College*.

AJ 285 Narcotics & Organized Crime (3) The identification of narcotics and dangerous drugs, their manufacture and distribution, effects on society, applicable Federal and state laws. Vice and organized crime investigations, applicable laws, effects on individuals and society.

Pre: ENG 100/100T, ESL 100/100T, or concurrent enrollment. Offered in conjunction with *Hawaii Community College*.

AJ 290B AJ Practicum I (3-6) With the cooperation of public and nonprofit agencies in the community, advanced students are placed in responsible positions where they earn credits for work performed.

Pre: AJ 101 and AJ 210 or AJ 256. Coreq: AJ 280 or prior completion. For ADJ Majors only. Offered in conjunction with *Hawaii Community College*.

AJ 290C AJ Practicum II (3-6) With the cooperation of public and nonprofit agencies in the community, advanced students are placed in responsible positions where they earn credits for work performed.

Pre: AJ 290B. Offered in conjunction with *Hawaii Community College*.

AJ 290D AJ Practicum III (3-6) With the cooperation of public and nonprofit agencies in the community, advanced students are placed in responsible positions where they earn credits for work performed.

Pre: AJ 290C. Offered in conjunction with *Hawaii Community College*.

AJ 291 Basic Recruit Training (6-12) A student majoring in Administration of Justice (ADJ) may receive up to 12 credits for completing Basic Recruit Training in law enforcement, as required by governmental agencies: Minimum of 250 hours training: 6 credits; Minimum of 500 hours training: 9 credits; Minimum of 900 hours training: 12 credits.

AJ x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

AJ x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. Pre: instructor's consent.

Agribusiness (AGBU)

College of Agriculture, Forestry, and Natural Resource Management

AGBU 110 Microcomputing for Ag (3) (lec., lab) Acquaints students with the micro-computer in agricultural applications by using and customizing commercial software, to understand the operation of the microprocessor and its peripherals, and to provide hands-on experience in utilizing some of the most common word processing, spreadsheet, presentations and database software and access to the Internet.

AGBU 120 Ag Bus Field Study (1-3) Agribusiness and agrieconomic functions performed by specialized agricultural agencies with emphasis on physical operating patterns; field trips to production, marketing and finance firms; workshops with agribusiness managers.

AGBU 291 Agribus Intern/Work Experience (3) Internship with agribusiness firms in the areas of management, sales, food distribution. National Agri-Marketing Association activities may be used with advisor's approval.

AGBU 320 Agribus Management (3) Organization forms and management functions of agribusiness firms, management science principles, inventory control, operation research techniques, decision model, and human resources development as they are related to agribusiness firms.

AGBU 340 Agri-Marketing Research (3) Primary marketing research including problem, definition, hypothesis formulation, research design, data collection, and results analysis. Mechanics of writing technical reports and oral presentations.

Pre: AGECE 201 or ECON 130.

AGBU x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

AGBU x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. Pre: instructor's consent.

Agricultural Economics (AGEC) Courses

College of Agriculture, Forestry, and Natural Resource Management

AGEC 201 Agri Economics (3) Introduction to agriculture and resource economics and agri-business with application to Hawaiian agriculture (Micro-economics).

AGEC 221 Ag Acct/Recd Analysis (3) (lec., lab) Introduces accounting theory and methods used to record and report financial information for both the business and farm firm. Other topics include business organization, inventories, receivables and payables, depreciation, and computer applications.

AGEC 322 Marketing Ag Products (3) Acquaints the student with the economic organization and operation of the food and fiber section of the U.S. and Hawaiian economy. In two general parts, one provides a treatment of agricultural price analysis; the second examines the marketing system for agricultural inputs, farm products, and processing and distribution activities with emphasis on cooperative marketing. Field trips to cooperative and other marketing firms. Future trading.

Pre: introductory course in economics or agricultural economics.

AGEC 330 Farm Management (3) (lec., lab) Acquaints the student with both theoretical and applied aspects of farm management. Topics include farm planning, managerial control, and acquiring and managing resources. Emphasis on Hawaiian farming systems. Stress on cost of production and cash flow budgets, capital investment, and linear programming. Computer applications.

AGEC 380 Environ Pol & Mgt Hawn Nat Res (3) Provides the student with an understanding of economic growth, resource scarcity and policy, environmental degradation, economic policy, property right and income distribution, institutional framework, benefit cost analysis and application of natural resource management in Hawai'i.

AGEC x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

AGEC x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.
Pre: instructor's consent.

Agricultural Engineering (AGEN)

College of Agriculture, Forestry, and Natural Resource Management

AGEN 231 Intro To Ag Mech (3) (lec., lab) Identification, proper use and maintenance of tools used in the shop and farm, plan reading, identification, selection and estimation of materials for agricultural projects. Principles of arc and oxy-acetylene welding, basic engineering concepts involved with layout and leveling, areas and heat flow, simple electrical wiring.

Note: Suitable eye protection and shoes are required in all AGEN laboratory classes.

AGEN 301 Farm Power (3) (lec., lab) Management and maintenance of power units used in agriculture. Principles of internal combustion engines. Shop and field practice in adjusting and operating internal combustion engines and associated field equipment. Alternate power options on farm.

Pre: College Algebra. A valid driver's license is highly desirable.

Note: Suitable eye protection and shoes are required in all AGEN laboratory classes.

AGEN 302 Farm Structures (3) (lec., lab) Farmstead planning, materials, design, construction and maintenance, farm utilities, water-sewage systems and labor-saving conveniences.

Pre: College Algebra and AGEN 231.

Note: Suitable eye protection and shoes are required by all AGEN laboratory classes.

AGEN 400 Aquaculture Engineering (4) Principles of site selection, design and construction of aquaculture systems.

Pre: AQUA 262 and instructor's consent. (Same as MARE 400).

Note: Suitable eye protection and shoes are required in all AGEN courses.

AGEN 435 Irrig Prin & Pract (3) (lec., lab) Comprehensive study of basic irrigation principles and practices. Basic hydraulics, water supply, conveyance, and measurement. Plant-soil-water relationship, evapotranspiration, and scheduling. Planning and design of irrigation systems. Pumps: types, selection and operation.

Pre: College Algebra or instructor's consent.

Note: Suitable eye protection and shoes are required in all AGEN laboratory classes.

AGEN x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

AGEN x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.
Pre: instructor's consent.

Agriculture (AG)

College of Agriculture, Forestry, and Natural Resource Management

AG 100 Intro to Agricultural Sciences (3) Introduction to diverse disciplines of agricultural sciences, industry, and contemporary issues in agriculture.

AG 101 Mathematics for Agriculture (4) (lec., lab) This course is designed to augment mathematics skills necessary to compete in today's business and agriculture environments. Typical applications are chemical rate conversions, solutions and mixtures, elementary algebra and financial topics. The aim is to teach students how to solve actual mathematical problems encountered in the day-to-day operation of agricultural/horticultural/ environmental operations.

AG 200 Agro-Environmental Science Com (3) This writing intensive and communications course will consist of short lectures to demonstrate types of scientific writing and speaking by comparison of types of writing, presentations by invited speakers to demonstrate different speaking styles, and library and online research to develop a coherent, well-written scientific review consisting of a short, five page paper to be handed in and presented in class using Power Point.

AG 205 Value Added Ag Products (3) (lec., lab) Principles and practices of processing and developing agricultural based products.

AG 215 Agro-Environmental Chemistry (3) (lec., lab) A study of chemical phenomena and the impact of chemistry on modern agriculture, the environment, and our daily lives. Includes basic discussions of agricultural chemicals; terrestrial, atmospheric, and aquatic pollution; pollutants transport; waste disposal and recycling; global warming; ozone depletion; toxicology; energy sources; acids and bases; nuclear chemistry.

Pre: college algebra or instructor's consent.

AG 230 Sustainable Agriculture (3) Evaluation of conventional and alternative farming methods in the U.S., Polynesia, Southeast Asia, Africa and Latin America from a long-term perspective. Analysis of the effects of those practices on environmental quality, agrosystems, and food security. Consideration of conflicting values and resolution. (GenEd/IntReq: GCC)

AG 290 Stud Mgt Farm Enterp Prj (1-3) Selection, planning, and completion of a production/ management/marketing project under faculty supervision. Project participation is voluntary and subject to approval. Students must maintain complete production and financial records. (Repeatable)

AG 291 Directed Work Experience Pgm (3) Agricultural practice in individual and team projects on independent farms or agricultural employment under supervision and direction during summer vacation or on a part-time basis during regular school period. Permission of instructor required. Only for CAFNRM students and offered only on a CR/NC basis. Credits earned not included in maximum allowed.

AG 304 Applied Microbiology (3) An overview of the production aspects of microbiology, including fermentation biology, mushroom cultivation, and biotechnology.

AG 312 Ag Geog/World Food Prob (3) Different types of agriculture, their location, and the cultural and environmental constraints operating to produce the resultant patterns. World food and hunger.

Pre: one introductory Geography course. (Same as GEOG 312).

AG 375 Intro To Genetic Analysis (3) An introduction to the principles and methods of genetic studies. The principles are first covered, especially with regard to crop improvement. This is followed by an overview of the structure and function of DNA and RNA, and an introduction to the tools and applications of molecular biology.

AG 403 Agricultural Biotechnology (3) This course is an overview of modern agricultural biotechnology with an emphasis on contemporary case studies. It is geared toward students, teachers, and extension personnel with an interest in this field. Thus, it will include instructional methods and alignment to state DOE standards. A firm grasp of biology and some understanding of genetics is assumed. Therefore, the course prerequisite is one semester of college-level biology (Biol 175 or equivalent).

AG 405 Plant Biotechnology (3) This course will provide basic information about plant biotechnology, with examples of its uses. Topics will include overviews of plant gene and genome analysis, transgenic technology, and bioinformatics, with an emphasis on crop improvement.

Pre: at least one Biology course.

AG 496 Senior Seminar in Agriculture (1) Guided research into current problems. Topics may vary according to interest of students and instructor. CR/NC only.

AG x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

AG x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.
Pre: instructor's consent.

Agronomy (AGRN)

College of Agriculture, Forestry, and Natural Resource Management

AGRN 310 Agronom Crop Prod Tropics (3) (lec., lab) Current agricultural practices in production of food, feed, and fiber crops in the tropics.

Pre: HORT 262 or instructor's consent.

AGRN 410 Soil-Plant Herbivore Interrltn (3) (lec., lab) The principles of plant competition and succession during the establishment and maintenance of herbaceous species and communities are related to soil, biotic, and microclimate factors and their interactions. Ecological and nutritional principles embodying plant and animal factors in the utilization of herbaceous plants by livestock are established. Research methodology in grassland systems also is presented.

Pre: ANSC 141, BIOL 175 or HORT 262, or instructor's consent.

AGRN x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

AGRN x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.
Pre: instructor's consent.

Animal Science (ANSC)

College of Agriculture, Forestry, and Natural Resource Management

ANSC 141 Intro To An Science (3) Introductory material related to animal science and livestock production including topics such as terms, body parts, wholesale cuts, breeds, digestion, feeding, reproduction, industry, and livestock breeding.

ANSC 165 Animal Health (3) The fundamentals of animal health will be taught from the veterinary medical perspective. Topics addressed will include causes of disease, basic immunology, disease prevention, principles of drug therapy and examples of animal disease processes.

ANSC 175 Animal Behavior (3) Introduction to the basic principles and processes regarding domestic animal behavior including communication, social structure, sexual behavior, learning and common behavioral disorders.

ANSC 185 Intro to Companion Animals (3) Introductions of common breeds of the dog and cat, proper physical examination, proper care and nutrition.

ANSC 223 Intro to Wildlife Science (3) Principles of managing wildlife populations and the interrelationships between wildlife and domestic livestock.

ANSC 244 Fund Anim Nutrition (3) (lec., lab) Comparative animal digestive systems and metabolism. Essential nutrients, their functions, mechanisms of action and interrelationships.

Pre: ANSC 141; CHEM 124 and 125; or instructor's consent. (Same as BIOL 254).

ANSC 321 Feeds & Feeding (3) (lec., lab) Identification of common feedstuffs and their feeding value for animal production. Important concepts on feed processing, nutrient availability, diet formulation, and feeding management. The economics of feeding and purchasing feeds based on nutrient value.

Pre: ANSC 141 and ANSC 244.

ANSC 342 Beef Cattle Production (3) (lec., lab) Principles of efficient beef production including comparative breed evaluation, performance testing and selection, breeding, feeding management, health care, and marketing.

Pre: ANSC 141 or instructor's consent.

ANSC 350 Anatomy/Physiol Of Farm Animal (3) (lec., lab) Structure and function of the animal body. A general study of anatomy, but emphasis placed on understanding the physiology. (Same as BIOL 323)

ANSC 351 Swine Production (3) (lec., lab) Principles of efficient pork production including breeds, crossbreeding, feeding, herd health, housing, management, selection and waste management.

Pre: ANSC 141 or instructor's consent.

ANSC 353 Horse Production (3) (lec., lab) Origin of species, breeds, feeding, lameness evaluation, reproductive considerations, and health issues of light horses. Limited enrollment.

Pre: ANSC 141 or instructor's consent.

ANSC 355 Goat & Sheep Production (3) (lec., lab) Principles of efficient goat and sheep production, including breeds, crossbreeding, feeding, fiber, herd health, management, reproduction and selection.

Pre: ANSC 141 or instructor's consent.

ANSC 445 An Breeding/Genetics (3) (lec., lab) Principles of Mendelian, population and quantitative genetics. Applications to improvement of livestock through selection methods and mating systems.

Pre: ANSC 141. Recommended: MATH 121 or equivalent.

ANSC 450 Repro Farm Animals (3) (lec., lab) Livestock reproductive anatomy and physiology.

Pre: ANSC 141. Recommended: ANSC 350 (Same as BIOL 450)

ANSC 453 Anim Disease & Parasites (3) (lec., lab) Principles and practices used for the prevention, diagnosis, and treatment of diseases and parasites in livestock. ANSC 453 and 454 do not have to be taken in sequential order.

Pre: ANSC 141 or instructor's consent.

ANSC 454 Animal Diseases & Parasites II (3) (lec., lab) Principles and practices used for the prevention, diagnosis, and treatment of diseases and parasites in livestock. ANSC 453 and 454 do not have to be taken in sequential order.

Pre: ANSC 141 or instructor's consent.

ANSC 490 Animal Science Internship (3) Practical animal experience (employed or voluntary) at farms, ranches, veterinary clinics, zoos and other animal operations.

Pre: ANSC 141 and two of the following: ANSC 342, 351, 353 and 355 and permission of the instructor.

ANSC x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

ANSC x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

Anthropology (ANTH)

College of Arts and Sciences

ANTH 100 Cultural Anth (3) Humans as cultural and social beings. The major concepts and conclusions of cultural anthropology. Biological, social, and linguistic foundations of culture. Basic research methodology.

ANTH 110 Archaeology (3) Prehistoric archaeology; methods and techniques of excavation and analysis; brief survey of man's cultural growth in prehistoric times.

ANTH 115 Human Evolution (3) The evolution of humans and their position among the primates. Human adaptation to the environment both in the past and present. Human biology with an emphasis on variation and its sources.

ANTH 121 Intro To Language (3) Linguistically oriented approaches to human behavior, including ethnolinguistics, sociolinguistics, and psycholinguistics. The way language functions in culture, society, and the cognitive processes. (Same as LING 121)

ANTH 200 Cult Of World: Regional Survey (3) The traditional cultures of various geographic areas of the world. Specific regions to be announced each semester: (b) Oceania, (c) East Asia, (d) South East Asia, (e) South Asia, (f) North America, (g) Africa, (h) South America, (i) Other. (May be repeated for credit if subletters are different). (GenEd/IntReq: H/A/P)

ANTH 295 Pacific: Brown Bag Seminar Ser (1) Weekly one hour seminars will cover a broad range of topics, current research and topical issues that are of relevance to contemporary ways of life in the Pacific. Seminars will also explore the application of Pacific Studies to the workforce. Credit is gained by weekly attendance and the submission of short summaries of the weekly seminars. (Same as GEOG 295).

ANTH 300 Cultures of Oceania (3) This course studies the societies of Polynesia, Micronesia and Melanesia. It introduces students to the culture and people of these Pacific regions, the impact of contact with the West and the struggle to balance tradition and modernity in contemporary times. (ANTH 357, Change in the Pacific, concentrates more on contemporary social and political issues). (GenEd/IntReq: H/A/P)

ANTH 310 Contemp Iss in Hawaiian Anth (3) An examination of the social and political context in which Hawaiian archaeology is practiced. Topics include indigenous anthropology, descendant communities, critical theory, and the politics of the past. (GenEd/IntReq: H/A/P)

ANTH 315 Ecological Anthropology (3) Relationship of humans to their natural environment, particularly emphasizing the role of culture as a dynamic component in ecological systems.

Pre: ANTH 100 or 115, or instructor's consent.

ANTH 320 Cross-Cultural Study Of Women (3) Comparative analysis of women's roles and women's lives in different societies. Topics include women's status, life stages, gender roles, images of women and power. (Same as WS 320)

ANTH 321 Morphology And Syntax (3) Introduction to grammatical analysis and theory; practical experience in solving problems in morphology and syntax, using data drawn from a wide variety of languages. (Same as ENG 321, LING 321)

Pre: LING 102 or instructor's consent. Recommended: LING 311.

ANTH 323 Cultural & Social Change (3) Various approaches to cultural and social change in non-literate and modern societies; evolution, diffusion, acculturation, adaptation, revolution.

ANTH 324 Culture, Sex And Gender (3) A cross-cultural examination of the development of gender systems and gender roles. Consideration of sex roles and activities as part of the larger gender system.

Pre: ANTH 100 or instructor's consent. (Same as WS 324)

ANTH 331 Lang in Culture & Society (3) An examination of the articulation of language in social and cultural context, including topics relevant to sociolinguistics and ethnolinguistics.

Pre: ANTH/LING 121 or LING 102 or instructor's consent. (Same as LING 331)

ANTH 347 Pidgins And Creoles (3) A study of the world's pidgins and creoles; the origin and nature of pidgins and creoles; the relationship of Hawaiian Creole English to other Creoles in the world; the link between the developments of a Creole and language acquisition. Recommended: LING 102 or 121. (Same as ENG 347, LING 347). (GenEd/IntReq: H/A/P)

ANTH 354 Filipino Culture (3) Introduction to peoples and cultures of the Philippines. Topics include cultural origins, linguistics and cultural diversity, values, social structure, and overseas Filipino adaptations. (GenEd/IntReq: H/A/P)

ANTH 356 Japan (3) Culture origins and development with emphasis on contemporary Japanese culture. (Same as JPST 356). (GenEd/IntReq: H/A/P)

ANTH 357 Change in The Pacific (3) Peoples of the Pacific Islands with emphasis on contemporary cultures and social and political problems.

Pre: instructor's consent. (GenEd/IntReq: H/A/P)

ANTH 358 Japanese Immigrants (3) Examination of social and cultural adaptations of Japanese immigrant populations, with foci on Hawai'i and Brazil. Topics include the role of the Japanese government and emigration companies, the factors of generation, kinship, ethnicity, and contemporary Japanese migrants. (Same as JPST 358). (GenEd/IntReq: H/A/P)

ANTH 359 Anthropology of Religion (3) The anthropological approach to the study of religion asks the questions: What is religion cross-culturally and for particular societies? What behaviors and attitudes characterize religion in different culture areas? How can particular religions be related to societies that espouse them? Topics include indigenous and adopted religions of Hawaii, Japan and China.
Pre: ANTH 100.

ANTH 372 Culture through Film (3) Critical examination of ethnographic films (documentaries that describe a culture). Film construction and film-maker's intentions. Development of approaches to ethnographic film-making. Cultural representation in film. Relationship of film to written ethnography.
Pre: ANTH 100.

ANTH 375 Human Biological Variation (3) Human genetic and physical variation; latitudinal, longitudinal and altitudinal variation across human variation.
Pre: ANTH 100 or ANTH 115 or instructor's consent.

ANTH 384 Primatology (3) Evolutionary approach to the nonhuman primates. Biological and behavioral adaptations of primates to their ecological setting. Implications of primate adaptations for understanding human biology and behavior.
Pre: ANTH 115, or BIOL 176. (Same as BIOL 384)

ANTH 385 Hawa & Pacific Prehistory (3) Archaeological overview of the cultures of the Pacific before European contact with an emphasis on Polynesia and Hawai'i. (GenEd/IntReq: H/A/P, HPP)

ANTH 386 Hawaiian Culture Before 1819 (3) Hawaiian culture before the 1819 overthrow of the native Hawaiian religion: fishing and farming, political-economic organization and religion. Emphasis on early Hawaiian writers-Malo, Kamakau and 'I'i.
Pre: ANTH 100 or HWST 111 or instructor's consent. (GenEd/IntReq: H/A/P)

ANTH 387 Modern Hawa Cult 1819-Present (3) Change and continuity in Hawaiian culture from 1819 to the present, in the context of interaction with non-Hawaiians. Major cultural transformations of the nineteenth century. Hawaiian culture in the early and later twentieth century.
Pre: ANTH 100 or HWST 111. (GenEd/IntReq: H/A/P)

ANTH 388 Historical Archaeology (3) Historical archaeology as an integral aspect of anthropological inquiry into culture-contact and culture change. Topics include research designs, field methods, laboratory methods, and generating "anthropological histories". North American historical archaeology is reviewed with an emphasis on the potential applications of historical archaeology in Oceania.
Pre: ANTH 110.

ANTH 389 Cultural Resource Management (3) Covering issues pertaining to the identification, evaluation, and conservation of cultural resources, with an emphasis on archaeological sites. Central topics include the National Historic Preservation Act, the Native American Graves Protection and Repatriation Act, Hawai'i State legislation regarding cultural resources, and the implementation of these laws in Hawai'i by government and private organizations. (GenEd/IntReq: GCC, HPP)

ANTH 415 Medical Anth (3) Approaches to health, disease and medicine in both Western and non-Western cultures including ecological, evolutionary and anthropological perspectives.
Pre: 9 credits in either anthropology or biology.

ANTH 435 Senior Seminar Pacific Studies (3) A reading and research seminar under the supervision of the Pacific Islands Studies faculty aimed at demonstrating competence in research and writing on issues related to Pacific Islands environments, culture, society, and economy.
Pre: instructor's consent for students near completion of Pacific Islands Studies Certificate coursework. (Same as HIST 415 and GEOG 435). (GenEd/IntReq: H/A/P)

ANTH 445 Ethnographic Field Tech (3) Techniques of anthropological field research; ethnographic literature and work with informants. May be repeated for credit if topics are different, up to a maximum of six (6) credit hours.
Pre: ANTH 100 or instructor's consent.

ANTH 447 Marine Anth:Fishers in Oceania (3) The anthropological study of fishing communities with a focus on Oceania; fishing practices and technology; common property resources; fisheries management options; recent problems in world fisheries including consequences for the human participants in a fishery. Students will also learn qualitative research techniques and participate in a local fieldwork exercise.

ANTH 450 Physical Anth Lab (4) Human biology of living and skeletal populations. Methods and techniques of quantitative and qualitative analysis of human anatomical, physiological and biochemical variation under field conditions.
Pre: ANTH 115 and instructor's consent.

ANTH 463 Global Health in Evol Perspect (3) Overview of global health issues from the perspective of evolutionary medicine. Topics include the co-evolution of humans and their pathogens; modernization and the health transition to chronic diseases.
Pre: ANTH 100, ANTH 115, or instructor's consent.

ANTH 470 Museology (3) Museum training, including museum activities, exhibits, administration, custodial problems and interpretation. At least one field trip to Lyman House Museum.

Pre: ANTH 100 or 110, or instructor's consent.

ANTH 475 Hist Of Anth Theory (3) Theory and method in anthropology; emphasis on cultural/social anthropology.

Pre: ANTH 100 and junior or senior standing, or instructor's consent.

ANTH 481 Archaeometry (3) Covering a broad range of analytical techniques in archaeological research, emphasizing the relationships of archaeology to the natural sciences. Mini-sections of the course involve hands-on laboratory experience, covering geoarchaeology, zooarchaeology, archaeobotany, identification of raw materials and resources, and dating techniques.

ANTH 482 Archaeological Research Meth (4-6) Archaeological methods including research design and field methods such as survey, mapping and excavation, and laboratory methods. Normally taught as a summer session course. Credit varies depending on length of field projects (4-6 weeks, 8/hrs./day).

Pre: ANTH 110 or permission of instructor. May be repeated for credit up to maximum of 12 credit hours.

ANTH 484 Stone Tool Analysis (3) Analytical techniques related to stone artifacts (lithics) from archaeological sites, with an emphasis on lithic technology, or understanding the processes by which stone tools were manufactured, used, and eventually discarded. Identification of lithic "debitage" geochemical characterization, use-wear, and applications to Hawaiian flaked, pecked, and ground tools.

ANTH 485 Applied Anthropology (3) Anthropological methods, concepts, and theories as they apply to the solution of contemporary human problems. Exploration of the use of anthropology in various occupational areas. (GenEd/IntReq: GCC)
Pre: ANTH 100 and junior or senior standing, or consent of the instructor.

ANTH 490 Internship in Archaeology (3-6) Placement and experience in public, private, and/or government agencies involved in archaeological research plus completion of related research projects.

Pre: ANTH 110 and instructor and department approval. May be repeated for credit if topics are different, up to a maximum of 12 credits.

ANTH 495 Proseminar (3) Selected problems in current research: (b) archaeology, (c) linguistics, (d) social and cultural anthropology, (e) applied anthropology, (f) psychological anthropology, (g) physical anthropology, or (h) other areas of interest. Limited to anthropology majors or students with at least 9 semester hours of anthropology courses above 100-level. (May be repeated for credit if topics are different)

ANTH x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

ANTH x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.
Pre: instructor's consent.

Aquaculture (AQUA)

College of Agriculture, Forestry, and Natural Resource Management

AQUA 262 Intro Aquaculture (3) Discussion of the biological, physiochemical and economic aspects of aquaculture, including a survey of the culture techniques of cultured species of finfish, shellfish, lower invertebrates and algae.
(GenEd/IntReq: GCC, HPP)

AQUA 352 Aquaculture of Fishes (3) Theory and practice of aquaculture techniques for a wide variety of fishes including identification, reproduction, hatchery and nursery operations, grow-out, health management, harvest, processing and marketing.
Pre: AQUA 262 or aquatic ecology or instructor's consent.

AQUA 352L Aquaculture of Fishes Lab (1) (lab) Hands-on experience in hatchery, nursery and grow-out of wide variety of fishes. Pre: AQUA 352 or concurrent enrollment.

AQUA 353 Invertebrate & Algae Culture (3) Theory and practice of aquaculture techniques for invertebrates and plants including identification, reproduction, hatchery and nursery operations, grow-out, health management, harvest, processing and marketing.
Pre: AQUA 262 or aquatic ecology or instructor's consent.

AQUA 353L Cultures of Invertebrates Lab (1) (lab) Hands-on experience in hatchery, nursery and grow-out of aquatic invertebrates and algae.
Pre: AQUA 353 or concurrent enrollment.

AQUA 425 Water Qual & Aquatic Product (3) Study of water quality and aquatic productivity as it relates to aquaculture and fisheries.
Pre: CHEM 124 or instructor's consent. (Same as BIOL 425).

AQUA 425L Water Qual & Aquatic Prod Lab (1) (lab) Hands-on education in the monitoring and management of water quality and algal populations in ponds and other aquatic systems.
Pre: AQUA 425 or concurrent enrollment, or instructor's consent.

AQUA 466 Fisheries Science (3) General characteristics of fisheries, harvesting methods; principles and techniques to derive data and analyze fished population.

Pre: background in fish biology and aquatic ecology or instructor's consent.

AQUA x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

AQUA x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.
Pre: instructor's consent.

Art (ART)

College of Arts and Sciences

ART 101 Intro To Visual Arts (3) Slide/lecture course and introduction to the visual arts in their various forms and expressions.

ART 109 Intro To Drawing & Painting (3) Studio experiences for non-majors. Emphasis on formal concepts in drawing and painting. The course incorporates various drawing and painting media into exercises, projects, and lectures to develop personal expression.

ART 121 FP Studio: Beg Drawing (3) Foundation Program Studio. Basic drawing concepts with studio investigations into line, shape, form, light and value, and space. Explorations of principles of visual organization and basic drawing media of pencil, charcoal, crayon, pen and ink, and brush and ink. Discussion of perceptual relationships of light and space.

ART 122 FP Studio: Beginning Painting (3) Foundation Program Studio. Introduction to painting; exploration of color theory and its applications; and investigation of perceptual relationships of light, color, and space. Studio exploration of the principles of visual organization through applications of color concepts and fundamental materials and techniques of painting.
Pre: ART 121.

ART 123 FP Studio: 2-D Design (3) Foundation Program Studio. Investigations of two-dimensional design concepts and the elements and principles of visual organization. Inquiry into perceptual and visual relationships of design principles. Discussion of relationships of visual elements and time and space.

ART 124 FP Studio: 3-D Design (3) Foundation Program Studio. Investigation of the principles and elements of design in three-dimensional concepts. Tactile exploration of forms, environments, and expressions. Explorations into perceptual relationships of time, light, and space in three-dimensional visualizations.

ART 175 Survey of World Art I (3) A survey of world art from prehistoric times in Europe, Asia, Africa, Pacific Islands and the Americas up to approximately 1500 C.E. A study of the inter-related influences and exchanges in art creation and visual communication between various world cultures.

ART 176 Survey of World Art II (3) A survey of world art from approximately 1500 C.E. to the present time. A study of the inter-related influences and exchanges in art creation and visual communication between various world cultures.

ART 215 Printmaking: Intaglio (3) Basic intaglio techniques of etching, engraving, drypoint, and aqua-tint; perceptual and conceptual exercises in composition and pictorial structure.
Pre: ART 121, 123.

ART 216 Printmaking: Lithography (3) Basic lithographic techniques; development of concepts.
Pre: ART 215.

ART 221 Intermediate Drawing (3) Life drawing and study of the human figure; studio drawing concepts and application of drawing materials. Explorations of anatomy, gesture, contour, form, light, and space in relation to figure studies.
Pre: ART 121. Repeatable for a total of 9 semester hours.

ART 222 Intermediate Painting (3) Intermediate painting studio. Development and explorations of painting materials and concepts and the visual relationships of subject matter, content, and composition.
Pre: ART 121, 122.

ART 270 Aspects Of Western Art (3) The development of western art and architecture, with emphasis on the impact of Christian traditions on the arts of classical Greece and imperial Rome; modes of artistic expression after the American and French Revolutions.

ART 280 Aspects Of Asian Art (3) The history of form and content in various Asian cultures, with emphasis on the art and architecture of India and southeast Asia, and the expansion of Buddhist arts to China and Japan. (GenEd/IntReq: H/A/P, HPP)

ART 300 Intermed Studio Seminar (3) Studio explorations in a variety of media including mixed media. Presentations, critiques, and assigned readings for the purpose of comparative study and discussion.
Pre: Foundation Program Studios (ART 121, 122, 123, 124) and completion of two semesters of 200-level art studios. May be retaken for a total of 9 credits.

ART 308 Creative Digital Photography (3) This course is designed to develop and expand ideas about photographic representation by expanding students' range of interests and uses of the medium. Both digital imaging techniques and silver-based materials are explored with an eye toward expansion and experimentation. Projects include invented persona writing, pinhole pictures, the body and expressive gesture, cross-media appropriation, and an independent project. May be repeated for up to 9 credits.
Pre: ART 123.

ART 315 Adv Printmkg: Intaglio (3) Advanced intaglio techniques involving more complex development of individual projects.
Pre: ART 215. Repeatable for a total of 9 semester hours.

ART 316 Adv Printmaking Seminar (3) Advanced Studio practice in independent projects.
Pre: ART 216 or 315. Repeatable for a total of 9 semester hours.

ART 317 Cyanotype (3) Studio study of the cyanotype, an early 19th century light-sensitive photo process used to create fine art prints. Studio work will include similarly related processes, such as chrysotype, gum dichromate and kallitype.
Pre: Foundation program studios (Art 121, 122, 123, 124) and completion of 2 semesters of 200-level art studios. Repeatable for a total of 9 semester hours.

ART 320 Art of Ancient Civilizations (3) Exploration of the arts of ancient world civilizations with an emphasis on Egypt, Mesopotamia, Indus Valley, Bronze Age China, Ancient Greece, Rome and Persia. Also includes comparisons with Mayan, Aztec and ancient cultures of Africa.
Pre: junior or senior standing or instructor's consent.

ART 321 Advanced Drawing (3) Studio practice of advanced and individual problems in drawing. *Pre:* ART 221. Repeatable for a total of 9 semester hours.

ART 322 Advanced Painting (3) Studio practice of advanced and individual problems in painting.
Pre: ART 221, 222. Repeatable for a total of 9 semester hours.

ART 360 Renaissance and Baroque Art (3) The historical development of European art, beginning with the transition from the late Middle Ages, and concluding with the transition into the Neoclassical period; features the motivating religious, philosophical and aesthetic values.
Pre: junior or senior standing, or instructor's consent.

ART 370 Modern Art Seminar (3) The study of visual arts theory based upon the movements in mainstream art from the late 19th through the 20th century in Europe and America.
Pre: ART 270 or instructor's consent.

ART 374 Art of the 19th Century (3) An in-depth study of the art of the nineteenth century in Europe from NeoClassicism to PostImpressionism. The focus of the course will be on France and Western Europe, but some time will be spent comparing the art of other countries and discussing their influences on Western European art. Geographic, philosophical, religious and political influences on the arts of the times will be explored.

ART 375 Christianity & The Arts (3) Relationships of the arts to Christian beliefs and ritual from early Christian era to the present; role of the artist, church, and patron.
Pre: junior or senior standing, or instructor's consent.

ART 380 Art Of China (3) Chinese art from the Neolithic period to the Qing Dynasty, with emphasis on the Song and later periods.
Pre: ART 280 or instructor's consent. (GenEd/IntReq: H/A/P)

ART 381 Art Of Japan (3) The history of art in Japan with emphasis on Buddhist art, the relationships between Chinese and Japanese arts. (Same as JPST 381).
Pre: ART 280 or JPST course or instructor's consent. (GenEd/IntReq: H/A/P)

ART 385 Religious Arts Of East Asia (3) Interrelationships of the arts and religion in various Asian cultures, with emphasis on Buddhism, Hinduism, Confucianism, Daoism, and Shinto.
Pre: junior or senior standing, or instructor's consent. (GenEd/IntReq: H/A/P)

ART 390 Seminar Contemporary Art (3) Focuses on the issues raised by contemporary art and traces historical/aesthetic developments from the beginning of the Modern period to the present. Assigned readings and lecture/discussion.
Pre: ART 270, 280 or instructor's consent.

ART 392 History of Art and Technology (3) An analytical study of the history of the international art and technology movement from the early 1950's to today. The content of the course includes avant-garde experimentation with technology leading to digital exploration in the arts, the cross-over between art and science in the late 20th century, and changes in the conceptual development of the 21st century.
Pre: ART 270 or 176.

ART x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

ART x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.
Pre: instructor's consent.

Astronomy (ASTR)

College of Arts and Sciences

ASTR 110 General Astronomy (3) A survey of modern astronomy intended for non-science majors; the structure and evolution of the solar system, stars, stellar systems, and the Universe. If students desire to take ASTR 110, 180, and 181, they may receive credit for ASTR 110 only if it is taken prior to taking ASTR 180 and ASTR 181.

ASTR 110L Gen Astronomy Lab (1) (lab) Demonstration of astronomical principles through laboratory observations and analysis of astronomical data. Not required for ASTR 110.

Pre: Credit or registration in ASTR 110, ASTR 180, or ASTR 181.

ASTR 111 Intro to Space Exploration (3) Survey of applied science, social, cultural and engineering topics in space science, focusing on exploration. Past, present and future aspects of space exploration. Relationship to Hawaiian views of cosmology and Hawaiian traditions such as Wayfaring and relationship to the land. (Same as PHYS 111)

ASTR 130 Intro To Space Science (3) An introduction to space science and related subjects. Topics discussed are the contents of the solar system and of near-Earth space, history, and physical principles of space flight, remote sensing of the Earth from space, space habitats and manned missions to the planets, the sociological impact of space exploration, and the prospects for life elsewhere in the Universe.

ASTR 150 Life in The Universe (3) The possibility that life might exist elsewhere in the universe has fascinated human beings ever since our ancestors first gazed into the starry sky. In this course, the question for extraterrestrial life is considered from astronomical, biological, and sociological perspectives. Topics include planets, stars and galaxies, the Big Bang, the origin and evolution of life on Earth, searches for extraterrestrial life, and more. A non-mathematical course for non-science majors who want to explore astronomy.

ASTR 180 Princ Of Astron I (3) A survey of modern solar system astronomy, with emphasis on the underlying physical principles. Topics discussed include the celestial sphere and aspects of the night sky, the structure and evolution of the Sun's planetary system, comparative planetology, and theories of the formation of planetary systems. Intended for science majors and prospective science teachers. The student should have a good operational familiarity with high school algebra. If students desire to take ASTR 110, 180 and 181, they may receive credit for ASTR 110 only if it is taken prior to taking ASTR 180 and ASTR 181.

ASTR 181 Princ Of Astron II (3) A survey of modern stellar, galactic, and extragalactic astronomy, with emphasis on the underlying physical principles. Topics covered include stellar structure, interstellar environments and the formation of stars, stellar evolution and death, the structures of galaxies, and cosmology. Intended for science majors and prospective science teachers. The student should have a good operational familiarity with high school algebra. If students desire to take ASTR 110, 180 and 181, they may receive credit for ASTR 110 only if it is taken prior to taking ASTR 180 and 181.

Pre: ASTR 180.

ASTR 224 Spaceflight (3) All aspects of manned and unmanned spaceflight, with emphasis on actual technologies and procedures used in space exploration. For students interested in Astronomy, Physics, Planetary Sciences, Aerospace Engineering or with a general interest in spaceflight.

Pre: PHYS 106 or higher; CHEM 114 or higher; MATH 104 or higher. Students lacking these pre-requisites who believe they have sufficient science background may be admitted with the instructor's permission. (Same as PHYS 224)

ASTR 230 Applied Electronics I (4) (lec., lab) Theory and applications of circuit design and analysis with an emphasis on analog devices. AC and DC series and parallel RLC circuits, diodes, transistors and operational amplifiers. Laboratory will consist of construction and analysis of representative circuits.

Pre: PHYS 171 or PHYS 173, and PHYS 171L. (Same as PHYS 230).

ASTR 250 Observational Astronomy (3) An introduction to the tools and techniques of observational astronomy: astronomical time and coordinate systems, photometric systems and magnitudes, principles of telescopes and their operation, introduction to modern astronomical instruments, analysis of astronomical data. Coursework includes observations with small telescopes, and tours of the observatories on Mauna Kea.

Pre: ASTR 180, 181, MATH 205 and PHYS 171.

ASTR 250L Observational Astronomy Lab (1) (lab) A lab course in modern observational astronomy emphasizing "hands-on" use of instruments to acquire data with research-grade telescopes atop Mauna Kea. Students will gain on-site observing experience with CCD photometry and spectroscopy through direct acquisition and data analysis using modern laboratory data reduction software. Applications to stellar and, where possible, galactic astrophysics will be observed.

Pre: ASTR 181 or equivalent, and concurrent enrollment in ASTR 250.

ASTR 260 Computational Physics & Astron (3) Computational techniques in physics and astronomy, with an emphasis on fundamental algorithms and development of code in high-level languages. Topics include least squares, interpolation, random number generators and numerical integration of differential equations.

Pre: PHYS 170 or PHYS 172, CS 150.

ASTR 350 Stellar Astrophysics (3) Stellar astronomy from a modern, physical viewpoint: principles of stellar structure; stellar energy sources and evolution; radiative transfer and the structure of stellar atmospheres; multiple and variable stars.

Pre: ASTR 181, PHYS 271, PHYS/ASTR 260.

ASTR 351 Galactic & Extragal Astrophys (3) The astronomy of galaxies and the large-scale structure of the Universe from a modern, physical point of view; the structure, contents, dynamics, and evolution of the Milky Way and of other galaxies; clusters of galaxies; the formation of galaxies; the extragalactic distance scale and the large-scale structure of the Universe; observational cosmology.

Pre: ASTR 181, PHYS 271, PHYS/ASTR 260.

ASTR 352 Comparative Planetology (3) Study of the geology and geophysics of Earth-like planets and satellites in the Solar System, with emphasis on understanding terrestrial geology in a broader, astronomical context. Study of the atmospheres of Solar System planets and satellites, and also the formation and evolution of the Solar System and extrasolar planetary systems.

Pre: GEOL 111, ASTR 180. (Same as GEOL 352).

ASTR 375 Literature Review Practicum (1) A guided course for writing a literature survey on a topic in physics or astronomy. This course can be repeated if a different writing topic is approved. Credits earned in this course may **not** be counted as upper-division physics or astronomy electives needed for the BA in Physics or the BS in Astronomy degrees.

Pre: 9 credit hours in Physics or Astronomy courses at the 200 level or above **and** permission of the instructor.

ASTR 400 Observatory Internship (1-6) Cooperative education experience with student employed in an astronomical observatory or research facility on the Island of Hawaii. One credit is granted for each full-time working month, or equivalent thereof, to a limit of 6 credits (such credits may not be counted as upper-division astronomy electives for the purpose of fulfilling that requirement for the B.S. degree in Astronomy).

Pre: consent of Department.

ASTR 432 Senior Lab/Thesis Project (3) (lab) Individual research projects conducted in the college laboratory, library, or observatory; or at an external research facility; under the direct guidance of a member of the physics and astronomy faculty or an affiliated faculty member. Students must propose and complete a research project, and present a final report to the department. May be repeated once for a maximum of 6 credits.

Pre: permission of the department is required. (Same as PHYS 432)

ASTR 450 Instruments & Techniques (3) A course in current astronomy observational instruments and techniques, with emphasis on "hands-on" use of instruments to acquire data with research telescopes on Mauna Kea. Topics covered include optical and infrared photometric instruments, CCD and IRCCD cameras, astronomical spectrographs and interferometers, advanced data analysis.

Pre: ASTR 250, PHYS 331, PHYS/ASTR 260.

ASTR 460 Gravitation & Cosmology (3) An introduction to Einstein's General Theory of Relativity, with emphasis on astronomical applications: the curvature of space-time and the principle of equivalence; gravitational collapse and black holes; the large-scale structure of the Universe; modern cosmology.

Pre: PHYS 270, MATH 232.

ASTR 495A Seminar (1) Seminar presentations of topics in the physical sciences by faculty, enrolled students and invited speakers. The first semester (495A) is taken CR/NC; in the second semester (495B), students are required to present a seminar for a letter grade.

Pre: senior standing or instructor's consent. (Same as CHEM 495A-495B, GEOL 495A-495B, MATH 495A-495B, and PHYS 495A-495B.)

ASTR 495B Seminar (1) Seminar presentations of topics in the physical sciences by faculty, enrolled students and invited speakers. Students are required to present a seminar for a letter grade.

Pre: senior standing, or instructor's consent. (Same as CHEM 495B, GEOL 495B, MATH 495B, and PHYS 495B.)

ASTR 496 Space Studies Seminar (1) Seminar presentations of topics related to space exploration by invited speakers, faculty, and enrolled students. Students are required to prepare and submit reaction papers/essays.

ASTR x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

ASTR x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.

Pre: instructor's consent.

Biology (BIOL)

College of Arts and Sciences

BIOL 101 General Biology (3) A one-semester introductory biology course for non-majors.

BIOL 101L Gen Biol Lab (1) (lab) Laboratory for General Biology. (Optional but recommended)

BIOL 125 Intro Cell & Molecular Biol (3) Introduction to cell and molecular biology for majors in the natural and health sciences. Cell structure and function, the molecular basis of life, metabolic pathways, classical and molecular genetics, the molecular and biological evolution of the universe.

Pre: high school biology (or BIOL 101), high school chemistry (or CHEM 114).

BIOL 156 Nat Hist & Conservatn Hawn Isl (3) The formation of the Hawaiian Islands, establishment of their native terrestrial and marine flora and fauna, and human impacts and conservation. (Same as MARE 156). (GenEd/IntReq: H/A/P, HPP)

BIOL 156L Nat History Field Trips (1) (lab) Field trips for Natural History and Conservation of the Hawaiian Islands. (Same as MARE 156L). (GenEd/IntReq: H/A/P)

BIOL 171 Marine Biology-Diversity (3) Marine organisms: classification, structure, physiology, ecology and adaptations to the marine environment. This course satisfies CAS general education requirements in the Natural Sciences. (Same as MARE 171.)

BIOL 171L Marine Biology Laboratory (1) (lab) Provides students with direct exposure to the biota of Hawai'i via laboratory work and field trips to sites around Hilo. The course focuses on the identification, natural history, and ecology of common marine organisms.

Pre: current or previous enrollment in BIOL/MARE 171. (Same as MARE 171L).

BIOL 175 Introductory Biology I (3) Principles of cell structure, replication, and metabolism. Classical and molecular genetics, and evolution. Biodiversity of prokaryotes, viruses, fungi, and plants. Plant structure and function. Biology 175 and 176 are offered both semesters, and students may enroll in either (but not both) during the fall or spring semester.

BIOL 175L Introductory Biology I Lab (1) (lab) Laboratory for Introductory Biology I. Laboratory exercises covering cell structure, replication, and metabolism; classical and molecular genetics; evolution; and biodiversity of prokaryotes, viruses, fungi, and plants. BIOL 175L should be taken concurrently with BIOL 175.

BIOL 176 Introductory Biology II (3) Biodiversity of animal-like protists, invertebrates, and vertebrates. Animal tissues, sensory reception and integration, endocrine systems, support and movement, circulation and immunity, gas exchange, digestion, kidney function, reproduction and development. Population and community ecology, energy flow and biogeochemical cycles. BIOL 175 and 176 are each taught both semesters, and students may enroll in either (but not both) during either fall or spring semester.

BIOL 176L Introductory Biology II Lab (1) (lab) Laboratory for Introductory Biology II. Laboratory exercises covering structure, function, and natural history of animal-like protists, invertebrates and vertebrates; structure and function of animal tissues; reproduction and development; and community ecology. BIOL 176L should be taken concurrently with BIOL 176.

BIOL 190 Hawn Marine Field Experience (2) Provides a unique opportunity for students to experience the marine environment of the Big Island. Course consists of field trips to coastal and underwater sites around the island. Some swimming and snorkeling involved but not required. (Same as MARE 190). (GenEd/IntReq: H/A/P)

BIOL 205 Gen Entomology (3) Structure, classification and identification of insects. *Pre:* BIOL 175 or 176 or instructor's consent. (Same as ENTO 304).

BIOL 243 Human Anatomy & Physiology I (3) Basic structure and function of human tissue and organ systems, including skeletal, integumentary, muscular, respiratory, circulatory, and immune systems.

BIOL 243L Human Anatomy & Physio I Lab (1) (lab) Laboratory experience with the tissue and organ systems covered in BIOL 243 lecture. Hands-on training in tissue dissection, microscopy, physiological measurement, and safe lab technique. *Pre:* Concurrent enrollment in, or previous completion of BIOL 243 lecture.

BIOL 244 Human Anatomy & Physiology II (3) Basic structure and function of human tissue and organ systems, including digestive, urinary, nervous, endocrine, and reproductive systems. *Pre:* BIOL 243 or equivalent, or instructor's consent.

BIOL 244L Human Anatomy & Physio II Lab (1) (lab) Laboratory experience with the tissue and organ systems covered in BIOL 244 lecture. Hands-on training in tissue dissection, microscopy, physiological measurement, and safe lab technique. *Pre:* BIOL 244 or concurrent enrollment, or instructor's consent.

BIOL 254 Fund Animal Nutrition (3) Comparative animal digestive systems and metabolism. Essential nutrients, their functions, mechanisms of action and inter-relationships. *Pre:* ANSC 141, CHEM 124 and 125, or instructor's consent. (Same as ANSC 254).

BIOL 270 Intermed Cell & Molecular Biol (3) Integrated cell and molecular biology for the science majors. Modern advances in recombinant DNA technology. *Pre:* BIOL 175, BIOL 176, and CHEM 125 or instructor's consent. Recommended: CHEM 242 which may be taken concurrently.

BIOL 270L Inter Cell & Molecular Bio Lab (1) (lab) Laboratory exercises in cell and molecular biology with an emphasis on the use of modern methods of DNA analysis. *Pre:* BIOL 175-175L, BIOL 176-176L, CHEM 125L and BIOL 270 or concurrent enrollment, or instructor's consent. Recommended: CHEM 242L which may be taken concurrently.

BIOL 275 Fund Microbiology (3) A survey or microbiology with emphasis on bacteria, viruses, infectious diseases and their control.

Pre: one semester of college chemistry. Recommended: at least one semester of BIOL 101, 175 or 176. (GenEd/IntReq: GCC)

BIOL 275L Microbiology Lab (1) (lab) Required laboratory for Fundamentals of Microbiology.

BIOL 280 Biostatistics (3) Statistical analysis as applied to research in the Biological Sciences. Theory and applications of statistics; experimental design; basic statistical concepts; hypothesis testing; parametric and non-parametric analyses. Group and independent projects, computer analysis of data.

BIOL 281 General Ecology (3) General ecological and evolutionary principles. Relationship of plants and animals to their environments. Processes regulating growth and evolution of populations. Community structure and ecosystem function.

Pre: BIOL 175 or BIOL 176. Recommended: Completion of both BIOL 175 and BIOL 176, and high school algebra or equivalent.

BIOL 281L General Ecology Lab (2) (lab) Laboratory supporting BIOL 281. Field trips to view and sample representative ecosystems, instruction in basic field biology, identification of Hawaiian organisms, laboratory demonstrations. Basics of experimental design and hypothesis testing and use of simple statistics, culminating in written laboratory reports in scientific paper format.

Pre: BIOL 175L and BIOL 176L.

BIOL 309 Biogeography (3) Basic evolutionary and ecological principles underlying the dynamics of plant and animal populations. Mechanisms of isolation, speciation, dispersal, migration, and competition as they affect past and present world distribution patterns. Island biogeography. (Same as GEOG 309). (GenEd/IntReq: H/A/P) *Pre:* GEOG 101; BIOL 101 or 175 or 176; or instructor's consent.

BIOL 323 Mammal Physiology (3) Structure and function of the animal body. A general study of anatomy, but emphasis placed on understanding the physiology. (Same as ANSC 350)

BIOL 357 Evolution (3) Organic evolution as a unifying theory of biology. Topics include the history of ideas of evolution, adaptation of populations, genetic drift, molecular evolution and the neutral theory, quantitative genetics, speciation and phylogeny, biogeography and macro-evolutionary trends, and mass extinctions. *Pre:* BIOL 125 or 175 or 176.

BIOL 357L Evolutionary Genetics Lab (1) (lab) A laboratory and field course to be taken in conjunction with BIOL 357 lecture. Laboratory exercises will introduce students to the techniques in evolutionary genetics with special reference to Hawaiian plants and animals. Topics to be covered include: quantitative genetics, natural selection molecular genetics analysis of populations and species, ecological genetics and adaptation, and conservation genetics.

Pre: BIOL 270, BIOL 270L and BIOL 280.

BIOL 360 Marine Resources (3) A survey of human use of the marine environment including physical and biological resources. Topics covered include: fisheries, mariculture, marine mineral and energy resources, chemical resources of sea water, the use of coastal lands and waste disposal in the sea.

Pre: MARE 201 or BIOL/MARE 171, or instructor's consent. (Same as MARE 360).

BIOL 366 Trop Marine Rsrch Investigatn (3) Research projects on marine-related problems. Students will do a literature search; develop experimental design; collect, reduce and analyze data; do a written final report; and present findings at a symposium. Projects will be selected from a list of topics or can be original with the consent of the instructor.

Pre: instructor's consent. (Same as MARE 366).

BIOL 371 Biology Of Marine Invertebrate (3) A survey of the major groups of invertebrates focusing on those dominant in the marine environment. Students will learn methods used to identify and classify invertebrates and will survey the anatomy, physiology, and natural history of the major groups.

Pre: MARE 265 or BIOL 176 or their equivalent, concurrent enrollment in BIOL/MARE 371L. (Same as MARE 371).

BIOL 371L Bio Of Marine Invertebrate Lab (1) (lab) Direct exposure to the major groups of invertebrates in marine environment, focusing on those present in Hawai'i. Students will learn to identify and classify invertebrates and will survey the anatomy and natural history of the major groups.

Pre: BIOL/MARE 371 or concurrent enrollment. (Same as MARE 371L).

BIOL 375 Biology of Microorganisms (3) Fundamental principles of microbiology combined with recent developments in and applications to microbial evolution, ecology, molecular genetics and immunology.

Pre: BIOL 270 and 270L.

BIOL 375L Biology of Microorganisms Lab (1) (lab) Required laboratory for BIOL 375 covering fundamental principles of microbiology (culturing and identification). Supplemental components include specific labs in microbial ecology, molecular immunology, and genetics.

Pre: BIOL 270 and 270L.

BIOL 392 Biology & Philosophy (3) Philosophical examination of the implications of modern biology for how we understand ourselves and our relations to the natural world. Evolutionary, genetic, developmental, and ecological topics will be discussed. *Pre:* previous work in Philosophy or Biology, or instructor's consent. (Same as PHIL 392).

BIOL 410 Biochemistry (3) Basic compositions and functions of biological matter, metabolic interconversions and transformations; the bioenergetics involved and the levels of control over these processes. *Pre:* BIOL 270 and CHEM 242.

BIOL 410L Biochemistry Lab (2) (lab) Electrometric titration and chromatographic analysis of amino acids, advanced quantitative assay of proteins, advanced quantitative assay, purification and kinetic analysis of enzymes. Required laboratory for Biochemistry.

Pre: concurrent enrollment in BIOL 410 and completion of BIOL 270L and CHEM 242L.

BIOL 415 Cell Biology (3) Ultrastructural and molecular aspects of cell membranes, cellular energetics, cell mobility, cellular synthesis and growth, and cell division. *Pre:* BIOL 270.

BIOL 415L Cell Biology Lab (2) (lab) Light and electron microscopy of selected cells. Optional laboratory for Cell Biology.

Pre: Concurrent enrollment in BIOL 415 and completion of BIOL 270L or instructor's consent.

BIOL 417 Plant Anatomy (4) Plant structure in relation to cultural practices, functions genetic factors and development.

Pre: BIOL 175. (Same as HORT 437).

BIOL 425 Water Qual & Aquatic Product (3) Study of water quality and aquatic productivity as it relates to aquaculture and fisheries.

Pre: CHEM 124 or instructor's consent. (Same as AQUA 425).

BIOL 436 Animal Cognition (3) A survey of the historical and contemporary scientific literature on animal cognition using a wide variety of species. The course covers a broad array of topics that may include concept formation, memory processes, numerical competence, social learning and imitation, self-awareness, theory of mind, referential communication and grammatical skills.

Pre: PSY 213, PSY 214, and PSY 314 or 350 or instructor's consent. (Same as PSY 436)

BIOL 437 Marine Mammal Behavior (3) An introduction to marine mammals with emphasis on the behavior of marine mammals. Special attention given to those species found in Hawaiian waters. Individual species are examined within a comparative framework. Topics include: behavioral ecology, social behavior, cetacean societies, mating systems, communication, sensory perception, and cognition. (Same as PSY 437)

Pre: PSY 213, PSY 214, and PSY 314 or PSY 435 or instructor's consent.

BIOL 443 Ecological Animal Physiology (3) Study of the physiological adaptations of animals to environmental variation. The focus will be on how physiological responses to environmental factors determine the geographic distribution of animals. The course will cover the physiological and biochemical mechanisms that permit animals to adapt to potentially stressful environmental conditions, and topics will include food acquisition and digestion, energy allocation, thermal energetics, respiratory gas exchange, activity metabolism, and osmoregulation.

Pre: course in basic cell biology: BIOL 125, BIOL 270, or MARE 172; or instructor's consent.

BIOL 445 Behavioral Ecology & Evolution (3) Principles of behavioral ecology and evolution with a focus on conservation biology. Research techniques in behavioral ecology related to analyzing populations in geographically and age-structured populations. The importance of reproductive strategies, habitat selection, foraging behavior, parental care, social organizations, and the importance of migration and movement patterns on the regulation of population sizes and evolution. Population and quantitative genetics as it relates to evolution, speciation, and biodiversity.

Pre: BIOL 281 and BIOL 357 or permission of instructor.

BIOL 450 Physiology Reproduction (3) Livestock reproductive anatomy & physiology. *Pre:* ANSC 141. Recommended: ANSC 350. (Same as ANSC 450).

BIOL 455 Plant Ecology (3) Interactions between plants and the environment at the physiological, population, community, ecosystem scales. Discussion of factors affecting plant distribution and abundance from local to global scales. Plant and people interactions will be noted in the context of our changing planet. Key theories, quantitative measurements, experimentation, and critical analysis will be emphasized through a discussion of primary scientific literature.

Pre: BIOL 281 or permission of instructor.

BIOL 457 Vegetation of the Hawaiian Isl (3) This course explores the major types of vegetation in Hawai'i with respect to physical environments and important species. Basic concepts in plant taxonomy and identification are emphasized. Coursework includes field excursions at various sites around the island of Hawai'i to develop methods in surveying and monitoring vegetation. This course also examines major human impacts and conservation challenges.

Pre: BIOL 156 or BIOL 281. (Same as ENSC 457).

BIOL 460 Plant Diversity & Evolution (3) The evolution of land plants from mosses to flowering plants in the context of broad-scale environmental changes since the Silurian Period. Origins and diversification of the major lineages of extant and fossil land plants, including transitions in morphology, physiology, and life-cycles associated with adaptive radiations. Hawaii's spectacular plant radiations, and molecular and phylogenetic methods used in reconstructing the evolutionary history of land plants emphasized.

Pre: BIOL 357 or permission of instructor.

BIOL 466 Genetics (3) Classical, molecular, and population genetics. *Pre:* BIOL 270.

BIOL 466L Genetics Lab (2) (lab) Classical genetics usually including crosses with flies, worms and yeast. Molecular genetics usually including DNA gel analysis, construction of recombinant DNA molecules and their expression in transgenic organisms, and Polymerase Chain Reaction amplification of DNA. Optional laboratory for genetics.

Pre: concurrent enrollment in BIOL 466 and completion of BIOL 270L or consent of the instructor.

BIOL 467 Ecological Genetics (3) The class focuses on the genetics of whole populations and species. We will examine barriers to gene flow that influence the population structure and distribution of species. The goal of the class is to investigate how genetics informs understanding of the evolution of ecosystems and the dynamics of genetic interactions.

BIOL 477 Avian Biology (3) The biology of birds, including evolution, diversity, systematics, morphology, behavior, and ecology. This course has a global perspective, but uses examples from Hawai'i wherever appropriate.

Pre: BIOL 281 or instructor's consent.

BIOL 481 Advanced Ecology and Evolution (3) The major subdisciplines of ecology and evolutionary biology, with emphasis on the models and methodologies of areas of active research. Taught using examples of published research.

Pre: BIOL 280, 281-281L and BIOL 357-357L.

BIOL 481L Ecology & Evolutn Resrch Methd (2) (lab) Intensive field-laboratory supporting BIOL 481. Research topics selected from current fields of active research within ecology and evolution. Develop research hypotheses, gather data from field sites, analyze and interpret data and write reports in the style of scientific papers.

Pre: concurrent enrollment in BIOL 481 required.

BIOL 482H Honors Appl Of Ecol & Evol (3) Practical experience in performing research projects in Ecology, Evolution and Conservation Biology. Students will submit project proposals for evaluation and approval, do a thorough literature review, develop an experimental design, and collect and analyze data. Students will also prepare a final written report and give a 15-minute seminar presentation on their projects.

Pre: BIOL 443L, BIOL 481 and 481L; 3.5 GPA or instructor's consent with departmental approval.

BIOL 484 Biology Of Fishes (3) The biology of marine and freshwater fishes. Topics covered include: general anatomy, locomotion, respiration, osmoregulation, sensory systems, reproduction, electrosensitive and electrogenic fishes, coloration and bioluminescence in fishes, genetic interrelationships.

Pre: C- or better in BIOL/MARE 171 or BIOL 176 or their equivalent; C- or better in MARE 265 or equivalent; or instructor's consent. (Same as MARE 484)

BIOL 484L Biology Of Fishes Laboratory (1) (lab) Anatomy of jawless, cartilaginous and bony fishes. Review of common local reef fishes. Optional laboratory and field trips for Biology of Fishes. (Same as MARE 484L).

BIOL 495A Biology Seminar (1) Lectures, discussions and research reports of topics in biology presented by faculty, students, and visiting scholars. Students attend seminars and receive CR/NC grade for the course.

BIOL 495B Biology Seminar (1) Lectures, discussions, and research reports of topics in biology presented by faculty, students and visiting scholars. Each student must attend seminars and present a talk to receive a CR/NC grade for the course.

BIOL 496 Tchg Asstance & Tutorg in Biol (1-3) (lab) Practice in individual tutoring, and in the preparation and presentation of selected topics in Biology lecture or laboratory courses, under direct instructional supervision. This course may be repeated for a maximum of 6 credits and may not be used to replace any specific course requirements of the Biology major other than elective units. Statements of planned teaching assistance and tutoring activities required. *Pre:* consent of the supervising instructor and the department chair.

BIOL x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

BIOL x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

Business (BUS)

College of Business and Economics

BUS 100 Intro To Business (3) A study of business functions, methods of business operation, types of business ownership, and the role of business organizations in contemporary society.

BUS 240 Business Law (3) The law of contracts, agency and employment, and the elements of property and government regulation. Law of business organizations, with emphasis on partnerships and corporations and law of sales and commercial paper.

BUS 290 Critical Thinking (3) This course guides students in thinking more clearly, insightfully and effectively. Concrete examples from students' experience and contemporary issues drawn from forums like YouTube, TV, popular magazines, court cases, the internet, political speeches, etc. help students develop the abilities to solve problems, analyze issues, and make informed decisions in their academic, career, and personal lives. Attention is given to the identification and management of the perception process, use of evidence, use of assumptions, emotional influences, and language in various forms of business and social communication. Pre: sophomore standing

BUS 400 Internship (3) Supervised on-the-job experience in the business community. Comprehensive report by students, meeting with faculty advisor, and performance evaluation from employer required. (Same as ACC 400).
Pre: Minimum cumulative GPA of 3.00; compatibility with career interests; pre-approved job placement and internship contract and instructor's consent.

BUS x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

BUS x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.
Pre: instructor's consent.

Chemistry (CHEM)

College of Arts and Sciences

CHEM 100 Chemistry and Society (3) Introductory lecture on chemistry for non-science majors. A basic principles course designed for students in the humanities and social sciences. Current issues and the factors affecting them are presented from a simplified chemical viewpoint. Not repeatable for credit.
Previously offered as CHEM 111.

CHEM 100L Chemistry and Society Lab (1) (lab) Laboratory principles and techniques presented from the non-science major viewpoint. When possible, experiments will involve everyday phenomena. Not repeatable for credit.
Previously offered as CHEM 111L

CHEM 114 Intro Chemistry (3) Introduction to basic chemical principles.
Pre: competence in high school algebra as demonstrated by (a) the math placement test or (b) the first 20 questions of the ACS chemistry placement exam. (Both exams are offered at UH Hilo).

CHEM 114L Intro Chem Lab (1) (lab) Introduction to basic chemical laboratory principles and techniques.
Pre: concurrent registration in CHEM 114 required.

CHEM 124 General Chemistry I (3) A mathematically rigorous introduction to chemistry designed for majors in the natural sciences. Topics covered include measurement and problem solving, structure of atoms, molecules, and compounds; chemical equations, chemical quantities and aqueous reactions; behavior of gases; thermochemistry; quantum-mechanical model of the atom; periodic property of the elements; chemical bonding.
Pre: Passing score on the chemistry placement exam.

CHEM 124L Gen Chemistry I Lab (1) (lab) Experiments illustrating the fundamental principles and techniques of chemistry.
Pre: concurrent enrollment in CHEM 124 or prior credit for CHEM 124.

CHEM 125 General Chemistry II (3) A mathematically rigorous continuation of CHEM 124. Topics covered include liquids, solids and intermolecular forces; properties of solutions; chemical kinetics and equilibrium; acids and bases; aqueous ionic equilibrium; free energy and thermodynamics; electrochemistry.
Pre: a grade of "C" (not "C-") or better in CHEM 124.

CHEM 125L Gen Chemistry II Lab (1) (lab) Experiments illustrating the fundamental principles and techniques of chemistry.
Pre: concurrent enrollment in CHEM 125 or prior credit in CHEM 125.

CHEM 141 Surv Organ Chem & Biochem (3) Brief introduction to organic chemistry and selected topics in biochemistry.

CHEM 241 Organic Chem I (3) The study of carbon compounds. Topics include molecular structure, stereochemistry, molecular spectroscopy, reactions and methods of preparation of principal classes of organic compounds. Reaction mechanisms.
Pre: CHEM 125 and 125L or instructor's consent.

CHEM 241L Organic Chem I Lab (1) (lab) Techniques of organic chemistry, including synthesis and qualitative analysis. Applications include spectroscopy and chromatography.
Pre: concurrent registration in CHEM 241 required.

CHEM 242 Organic Chem II (3) The study of carbon compounds. Topics include molecular structure, stereochemistry, molecular spectroscopy, reactions and methods of preparation of principal classes of organic compounds. Reaction mechanisms.
Pre: CHEM 241 and 241L or instructor's consent.

CHEM 242L Organic Chem II Lab (1) (lab) Techniques of organic chemistry, including synthesis and qualitative analysis. Applications include spectroscopy and chromatography.
Pre: concurrent registration in CHEM 242.

CHEM 320 Descriptive Inorganic Chem (3) The classification of inorganic compounds, their properties and fundamental theories. This course is followed by CHEM 421.
Pre: CHEM 124 and 125.

CHEM 333 Quantitative Analysis with Lab (5) (lec., lab) Expanding upon general chemistry principles for application in quantitative analysis. Extensive training in laboratory techniques and report writing.
Pre: C or better in CHEM 125 and 125L.

CHEM 341 Qualitative Org Analysis (2) Identification and characterization of organic compounds and mixtures by chemical and spectroscopic techniques.
Pre: CHEM 242 and 242L or instructor's consent.

CHEM 341L Qualitative Org Ana Lab (2) (lab) Identification and characterization of organic compounds and mixtures by chemical and spectroscopic techniques.
Pre: CHEM 242 and 242L or instructor's consent.

CHEM 350 Phys Chem for Life Sci (3) Principles and theories of Physical Chemistry as applied to the life sciences. For chemistry majors and other natural science majors.
Pre: CHEM 242, MATH 205 or instructor's consent.

CHEM 350L Phys Chem for Life Sci Lab (2) (lab) Laboratory techniques in Physical Chemistry with emphasis in the life sciences.
Pre: CHEM 125L and CHEM 350 which may be taken concurrently.

CHEM 351 Physical Chemistry I (3) Principles and theories of physical chemistry at the macroscopic level such as thermodynamics, equilibria, states of matter and kinetic and molecular theory. For chemistry majors and other physical science majors. May be taken before or after CHEM 352.
Pre: CHEM 242, MATH 231, PHYS 170.

CHEM 351L Physical Chem I Lab (1) (lab) Laboratory techniques in physical chemistry at macroscopic level.
Pre: CHEM 351, which may be taken concurrently.

CHEM 352 Physical Chemistry II (3) Principles and theories of physical chemistry at the microscopic level such as kinetics and quantum mechanics; intended primarily for chemistry majors. May be taken before or after CHEM 351.
Pre: CHEM 242, PHYS 171, MATH 231.

CHEM 352L Physical Chem II Lab (1) (lab) Laboratory techniques in physical chemistry at the microscopic level.
Pre: CHEM 352, which may be taken concurrently.

CHEM 360 Environmental Chemistry (3) Will include the use of chemical concepts and principles to explore and understand the environment. Natural and anthropogenic aspects of environmental chemistry will be addressed including chemical cycles and systems, pollution, 'green chemistry', and how chemical events can affect local and global processes.
Pre: CHEM 125 with C or better grade. Offered Fall semester only.

CHEM 415 Chemistry of Biotechnology (3) This course will focus on the fundamentals of biotechnology beginning with the history and foundation of the field followed by detailed chemical and biochemical basis of well established applications of biotechnology in agriculture and the manufacture of pharmaceuticals.
Pre: BIOL 410.

CHEM 415L Biotechnology Laboratory (2) (lab) Students will systematically develop skills and understanding of the basic laboratory methods used by biotechnologists. Students will gain experience in biological separation methods, enzyme and protein assays, recombinant DNA techniques, and growth of bacteria and mammalian cells.
Pre or coreq: CHEM 415.

CHEM 421 Inter Inorganic Chem (3) The classification of inorganic compounds, description and fundamental theories. Course includes molecular orbital consideration.
Pre: CHEM 352, which may be taken concurrently. Recommended: MATH 206.

CHEM 431 Instrumental Analysis (2) Introductory instrumental analysis for chemistry majors but recommended for other natural science majors.
Pre: CHEM 333 with C or better grade, or instructor's consent.

CHEM 431L Instrumental Analysis Lab (2) (lab) Introductory instrumental analysis for chemistry majors but recommended for other natural science majors.
Pre: CHEM 333 with C or better grade or instructor's consent.

CHEM 441 Inter Organic Chem (3) The study of more advanced topics in organic chemistry, such as physical organic chemistry, natural products, advanced synthesis, macromolecules, and molecular spectroscopy.
Pre: CHEM 242.

CHEM 451 Inter Physical Chem (3) Advanced topics in Physical Chemistry such as chemical kinetics, molecular spectroscopy, electrochemistry, thermodynamics and statistical thermodynamics, surface chemistry, and crystallography.

Pre: CHEM 352 or instructor's consent.

CHEM 487 Environmental Toxicology (3) Biochemical basis for toxicity. Chemical distribution and fate in the body; molecular mechanisms and effects of toxic action. Emphasis on environmental toxicants.

Pre: upper-division courses in biochemistry and physiology or instructor's consent.

CHEM 495A Seminar (1) Seminar presentations of topics in the physical sciences by faculty, enrolled students and invited speakers. Must be taken CR/NC.

Pre: senior standing or instructor's consent. (Same as ASTR 495B, PHYS 495B, GEOL 495B, and MATH 495B)

CHEM 495B Seminar (1) Seminar presentations of topics in the physical sciences by faculty, enrolled students and invited speakers. Students are required to take course for a letter grade.

Pre: senior standing or instructor's consent. (Same as ASTR 495B, PHYS 495B, GEOL 495B, and MATH 495B)

CHEM x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

CHEM x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

Chinese (CHNS)

College of Arts and Sciences, Languages

CHNS 101 Elementary Chinese I (4) Development of listening, speaking, reading and writing Mandarin Chinese. Structural points introduced inductively. Laboratory drill. (GenEd/IntReq: H/A/P)

CHNS 102 Elementary Chinese II (4) Development of listening, speaking, reading and writing Mandarin Chinese. Structural points introduced inductively. Laboratory drill. *Pre:* CHNS 101 or equivalent. (GenEd/IntReq: H/A/P)

CHNS 107 Accelerated Elementary Chinese (8) Contents of CHNS 101-102 covered in one semester. Meets two hours daily, Monday through Friday. Language laboratory required. Development of four skills - speaking, listening, reading and writing - and an adequate knowledge at the beginning level of Chinese language. A variety of classroom activities: dialogues, role plays, individual and group presentations, grammar exercises, individualized laboratory work and A/V-aided activities, and reading and writing practice in the basic scripts ("pinyin" and "hanzi" characters). (GenEd/IntReq: H/A/P)

CHNS 200 Conversational CHNS Business (3) This course is intended for students who have gained some basic knowledge of Chinese language but would like to improve their fluency, especially for business situations. Over this course, students practice conversational skill through a variety of topics, such as greetings and self-introduction, formal meetings, business negotiations, trade or financial transactions, and in any other situations that may be appropriate for an international business situation. *Pre:* CHNS 102 or 107.

CHNS 201 Intermediate Chinese I (4) Second-level training in listening, speaking, reading and writing skills.

Pre: CHNS 102 or equivalent. (GenEd/IntReq: H/A/P)

CHNS 202 Intermediate Chinese II (4) Second-level training in listening, speaking, reading and writing skills. *Pre:* CHNS 201 or equivalent. (GenEd/IntReq: H/A/P)

CHNS 250 Chinese Folklore and Symbolism (3) This course introduces ancient Chinese folktales and symbolism that are significantly connected with Chinese cultural tradition, social life and customs, as well as distinctive aesthetics. Interesting and important stories are selected from mythology, legends and fables, covering various themes such as the creation of the universe, the ideal of life and happiness, the enlightenment of virtues, and the praises for loyal love. Moreover, most representative auspicious symbols in Chinese life are discussed in historical and cultural context. The discussions are focused on the origins and cultural connotations of such symbols as well as their impact on Chinese society, customs, literature and art traditions. (GenEd/IntReq: H/PP)

CHNS 260 Chns Hist Culture through Film (3) This course is an introduction to Chinese history and culture through a selection of films produced in mainland China, Hong Kong, Taiwan and in the West. Students will gain fundamental knowledge of the history, peoples, society, customs and civilization of China as reflected from the films. The films serve as an overview of Chinese history from ancient to modern times, and a reflection of many aspects of Chinese culture. Each film is introduced in class, but only the most important portions of it are shown (with English subtitles for those produced in Chinese), to be followed by an open discussion. Students are asked to write a short comment on each film to be discussed. Knowledge of Chinese is not needed. (GenEd/IntReq: H/PP)

CHNS 364 Chns Lit in Eng-Modern (3) Survey of major Chinese writings from 1919 to the present. Knowledge of Chinese is not required. (Same as ENG 364)

CHNS 381 Chns Cult thru Arch & Garden (3) This course introduces Chinese architecture and gardens as an important part of traditional Chinese culture. It starts with a brief introduction to Chinese history, philosophy, religions and literature, laying a foundation for understanding Chinese social structure, ideology, and religious and literary traditions. (GenEd/IntReq: H/PP)

CHNS 410 History of Chinese Characters (3) This course introduces Chinese civilization and history through an investigation of the evolution of Chinese script and the socio-cultural factors related to it. Archaeological and historical materials are used in introducing its various forms in history: from tortoise shell script to seal and clerical scripts as well as regular script. Historical and cultural setting of creating and using the specific script are examined. The transformation of Chinese script into Japanese "kanji" and cultural exchange between Asian countries are also discussed.

Pre: one of the following: CHNS 101, CHNS 107, JPNS 101, JPNS 101S, or JPNS 107. (Same as LANG/JPST 410). (GenEd/IntReq: H/A/P)

CHNS x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

CHNS x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

Civil Engineering (CE)

College of Arts and Sciences, Pre-Engineering Program

CE 270 Applied Mechanics I (3) Equilibrium of particles, rigid bodies, frames and machines; vectors, centroids, friction, and moments of inertia.

Pre: PHYS 170 and MATH 206.

CE 271 Applied Mechanics II (3) Dynamics of particles and rigid bodies: force-acceleration; impulse-momentum; work-energy.

Pre: CS 270 and Math 231.

CE x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

CE x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

Communication (COM)

College of Arts and Sciences

COM 100 Human Comm in Diverse Society (3) The role of human communication in meeting the task and social needs of a multicultural society. Emphasis on communication concepts, principles, and cultural issues in interpersonal, small group, organizational, public, mediated, and global contexts.

COM 200 Interpersonal Comm (3) The fundamental concepts of interpersonal communication: verbal and nonverbal communication in face-to-face encounters.

COM 240 Professional Communication (3) An overview of the various approaches to organizations, communication, public relations, leadership, and interviewing. Professional presentation, writing, small group problem solving and consulting skills are developed. Also addressed are diversity, technology, and globalization issues.

COM 241 Health, Culture and Diversity (3) This course is an overview of the study of health communication. It is aimed to provide exposure to concepts and principles in the field, focusing on advocacy and individual awareness in current events. Topics will include the dynamics shared between health care providers and patients, the role of mass media, promotion of public health campaigns and culturally diverse approaches to health care.

COM 251 Public Speaking (3) Analysis, preparation and delivery of speeches. Emphasis on content, organization and style.

COM 260 Media and Culture (3) Historical and contemporary overview of television, radio, film, and the press in American culture.

COM 270 Intro to Theories of Human Com (3) Examination of the theoretical foundations of the human communication discipline. Coverage of traditional and contemporary theories in such areas as interpersonal, small group, organizational, intercultural, public and mass communication.

COM 273 Radio Drama (3) A survey and production course in Radio Drama with emphasis on the actual production of radio drama(s) for public broadcast.

Pre: DRAM 170, COM260 or instructor's consent. (Same as DRAM 273)

COM 285 Intro to News Writing & Report (3) Prepares students to write for newspapers, the internet, and other journalistic outlets. Includes coverage of news conferences, county council meetings, trials, sports, and writing feature stories. (Same as ENG 285)

COM 287 Media Writing Practicum (3) (lec., lab) Students will build their portfolios by developing articles and submitting them for publication as well as for class credit. *Pre:* ENG 100, 100T, ESL 100, 100T, COM 285 or instructor's consent.

COM 340 Interviewing (3) This course focuses on the interview process as a collaborative dialogue. Emphasis is placed on framing the interview, listening ethics, cultural diversity, and the development of interviewing skills. *Pre:* COM 200 or instructor's consent.

COM 344 Sustainability, Com & Culture (3) Diverse theories and perspectives related to sustainability, communication and culture are examined. Sustainability is related to global and local cultures, the development of healthy individuals, relationships, organizations, communities. The ways that rhetoric, media, and new technologies may be used to promote sustainability are examined. (GenEd/IntReq: GCC)

COM 350 Intro Human Commun Research (3) An introduction to basic communication research approaches, reviewing the literature, and reporting research.

COM 351 Com in Multicultural Workplace (3) This course provides intercultural insights into organizational communication and addresses leadership and membership, decision-making and conflict resolution in the multicultural workplace.

COM 352 Comm in Small Groups (3) Discussion processes in small groups. Effects of variables such as group organization, leadership, membership, goals on how a group attempts to achieve its purpose.

COM 354 Comm in Innovation (3) The role of communication as a change agent in society. Communication strategies in diffusion of information.

COM 358 International Communication (3) This course surveys major topics in international communication, international and national policies on media, comparative media systems, and issues of development.

COM 359 Intercultural Communication (3) Linguistics and nonverbal variables that influence the effectiveness of cross-cultural communication. (GenEd/IntReq: H/A/P)

COM 360 Impact Of Mass Media (3) Analysis of some of the major effects of the mass media on the individual and society.

COM 361 Media Ethics and Law (3) Media Ethics and Law is an introduction to the ethical and legal issues related to communication and speech. It also gives students a better understanding of the U.S. Constitution and its role in our legal system. Students are provided tangible guidelines within which to communicate. They will understand how and why speech is protected and when that speech crosses the line into becoming unprotected speech.

COM 362 Broadcast Comm Practicum (3) Field experience in basic principles of broadcast production and communication requiring a minimum of ten hours each week in an assigned broadcast communication setting. *Pre:* instructor's consent required. May be repeated once for credit.

COM 365 Modern American Cinema (3) The study of American film since WWII, drawing from such film genres as the detective-hero, the musical, the western, comedy, social realism, and melodrama.

COM 368 Communication & Social Change (3) This course introduces students to theories and practices of social change from a communication perspective and explores the historic and contemporary role of communication in local, national, and international social movements.

COM 370 Persuasion (3) Inquiry into the nature of persuasion or attitude change with focus on the message as a major determinant of the effects of persuasion on receivers.

COM 375 Nonverbal Communication (3) The nonverbal dimensions of human communication.

COM 385 Advanced Media Writing (3) (lec., lab) A hands-on class that prepares students for the communication field. An advanced media writing course that includes a final in-depth, investigative news article. Students will build their portfolios by developing articles and submitting them for publication as well as for class credit. *Pre:* ENG 100/100T, ESL 100/100T, COM 285, or instructor's consent.

COM 387 Performance Education (3) In this course, students are guided through the process of researching, writing, rehearsing and performing a series of educational and entertaining presentations that deal with science and Hawaiian culture. Presentations will be shared with the general public in a museum theater setting at Imiloa Astronomy Center of Hawai'i. Course may be repeated once for credit. *Pre:* COM 251 or DRAM 171 or DRAM 221 or instructor's consent. (Same as DRAM 387)

COM 391 General Semantics (3) Understanding language, verbal meaning and implication, roles of perception and assumption (inference and judgment) in human relationships.

COM 400 Seminar in Human Dialogue (3) An exploration of the writings of those who contemplate "dialogue," generally considered to be the highest quality form of human communication. *Pre:* COM 200 and 251 or instructor's consent.

COM 420 Family Communication (3) Foundational concepts and theories are introduced. Communication dynamics within families are explored. Narrative, functional, interpretive, and systems approaches to family communication are included. Cultural influences are examined. Conditions necessary for optimal family functioning are addressed. (Same as WS 420)

COM 440 Organizational Communication (3) Organizational communication is an intensive consideration of the role of human communication in organizational effectiveness. The course emphasizes both theory and practice and focuses on historical and contemporary trends affecting organizations. *Pre:* COM 200 and 251 or instructor's consent.

COM 441 Leadership & Communication (3) Relationships between communication and leadership including a consideration of relevant theories, concepts, tools, and skills. Leadership and communication are examined in relation to organizational culture, change, diversity, technology, and decision making. *Pre:* COM 200 and 251 or instructor's consent.

COM 442 Communication & Conflict (3) Relationship between human communication and conflict. The relationship among personal history, culture, gender, power, communication, and conflict is considered. Students gain experience in assessing and intervening in conflict situations in both professional and personal contexts. Western, Eastern, and Hawaiian approaches to conflict management are included. *Pre:* COM 251 or instructor's consent.

COM 444 Public Relations (3) An overview of the practice of public relations in business, educational institutions, non-profit organizations, and government. Students will learn how to interact with public relations professionals, the media, write press releases, and design and evaluate campaigns. *Pre:* COM 251 or instructor's consent.

COM 450 Human Communication Theory (3) Examination of traditional and contemporary theories in the study of human communication.

COM 451 Communication and Ethnography (3) Study of ethnography as a qualitative research method. Opportunities to collect data in the field by participating and observing (writing field notes, videotaping, and/or audio taping), interviewing (videotaping or audio taping), and investigating texts (documents, diaries, photographs, films, etc.) are provided. New ethnographic form such as autoethnography, co-constructive narrative, interactive interviewing, creative non-fiction, poetry, fiction and performance are introduced.

COM 455 Com & Culture Asian Americans (3) Examination of communication patterns of the major Asian American ethnic groups. Particular emphasis will be placed on the influence of ethnic-cultural identities, cultural variability, immigration patterns, and other relevant issues on the communication behavior of Asian Americans.

COM 456 Asian Perspectives on Commun (3) This course surveys indigenous concepts and theories of Asian cultures and communication and compares Eastern and Western perspectives on humans communicating. (GenEd/IntReq: H/A/P)

COM 457 Japanese Culture & Commun (3) This course explores aspects of Japanese communication from cross-cultural perspectives and examines problems in intercultural interactions between Japanese and non-Japanese. (Same as JPST 457). (GenEd/IntReq: H/A/P)

COM 460 Mass Media Analysis (3) Advanced study in mass communication theory, analysis, and criticism, with emphasis upon the electronic mass media. *Pre:* Com 260 or 360 recommended.

COM 461 Race and Gender in Media (3) This course explores the dynamic interactions between race, gender and the mass media. Specifically, it examines media representations of race and gender and their cultural, sociological, and psychological effects in the society. *Pre:* COM 260, 360 or instructor's consent. (Same as WS 461).

COM 475 Seminar in Listening (3) Exploration of effective and ineffective listening behaviors in everyday life is the primary course topic. Research and scholarship on the topic of listening will be surveyed. An effort will also be made to refine students' actual listening skills. *Pre:* COM 200.

COM x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

COM x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

Computer Science (CS)

College of Arts and Sciences

CS 100 Prin Of Computer Sci (3) General survey of the entire field of computer science. Principles of machine architecture, human/machine interface, data organization, and their interrelationship.

CS 101 Digital Tools for Info World (3) Hands-on computer class with emphasis on producing professional-level documents, spreadsheets, presentations, databases and web pages for problem-solving. Includes concepts, terminology and a contemporary operating system. Meets requirements for the College of Business at UH Mānoa and UH Mānoa's Biology program and Botany department. Prepares students for College of Business Computer Competency certification test at UH Hilo.

CS 102 MS Office Tools for Math & Sci (3) Use of symbols, equations, images in scientific documents. Computations using spreadsheets with sums, averages, and scientific functions. Data analysis: curve fitting, interpolation, statistics. Data presentation: visualization, charts, and graphs. Symbolic computation. Database processing: forms, queries, reports, VBA. Additional topics chosen from: real-time data acquisition, more advanced statistical methods, system simulation. Intended for science majors. (Same as MATH 111) (Satisfies a Quantitative Reasoning General Education requirement as a Mathematics course)

CS 130 Beg Graphics, Game Program (3) Introduction to two-dimensional graphics and game programming: graphic elements, layers and simple animation; principles of game design and implementation; emphasis on Flash and Action Script programming; game physics; simple AI techniques. Previous programming experience helpful but not required.

CS 135 Animation Programming (3) A gentle introduction to programming with user-friendly software (Alice). Students use storyboarding design strategies and create Disney/Pixar-like animations with objects in three-dimensional virtual worlds. These animations promote an understanding of basic programming constructs including, control structures and object-oriented programming. Projects based on Hawaiian and Pacific themes will be emphasized. Open to all students; especially intended for those with no programming experience. Computer science majors may take this course to prepare for CS 150. (GenEd/IntReq: HPP)

CS 137 Digital Media with Flash (3) Use digital images, sounds, and video to create slide shows, animation, podcasts, tutorials, demonstrations, e-portfolios, etc. Save to DVD and web pages. Learn Flash and other software. Students may use existing content such as research project photos.

Pre: any prior CS course or instructor's consent.

CS 138 Intro to Computing with Robots (3) A gentle introduction to computer programming using robot kits and a high level programming language. Students will learn how to control and communicate with robots and at the same time gain an understanding of basic programming constructs, including control structures and object-oriented programming. Student projects will include use of robots to simulate space exploration as well as other tasks suited to robots. Computer science majors may take this course to prepare for CS 150.

CS 140 Multimedia Programming (3) An introduction to computer programming in the context of multimedia. Introduces students to some of the principles of computer science. Students will learn how to write computer programs (in Python) for creating and manipulating three types of media: pictures, sounds, and movies. Computer science majors may take this course to prepare for CS 150.

CS 141 Discrete Math for Comp Sci I (3) Includes logic, sets, functions, matrices, algorithmic concepts, mathematical reasoning, recursion, counting techniques, probability theory. Not open to students with credit in Math 310.

Pre: MATH 104 or MATH 104F and MATH 104G.

CS 150 Intro To Computer Science I (3) Intended for Computer Science majors and all others interested in the first course in programming. An overview of the fundamentals of computer science emphasizing problem solving, algorithm development, implementation, and debugging/testing using an object-oriented programming language.

Co-req: MATH 104 or MATH 205.

CS 151 Intro to Computer Sci II (3) Reinforces and strengthens problem solving skills using more advanced features of programming languages and algorithms such as recursion, pointers, and memory management. Emphasizes the use of data structures such as arrays, lists, stacks, and queues.

Pre: CS 150.

CS 200 Web Technology I (3) Introductory web page authoring. Creation of client-side web pages using web authoring language and style sheets. Consideration of graphical design elements, validation, browser compatibility, and accessibility. Use of scripting language to add dynamic elements to web pages.

CS 201 Web Technology II (3) Intermediate web page authoring. Creation of web pages that present data from XML sources and use XSLT transformations. Development of an e-commerce web site that uses a standard browser to accept user input, processes the user input with business logic, and connects to a back-end SQL database. Publication of web site to a web server.

Pre: CS 200 or instructor's consent.

CS 205 PC Hardware (3) An introduction to the hardware components and assembly of personal computers and their connectivity to networks. Includes laboratory and hands-on assembly.

CS 241 Discrete Math for Comp Sci II (3) Includes functions, matrices, graph theory, trees and their applications, Boolean algebra, introduction to formal languages and automata theory.

Pre: CS 141 and MATH 205. Offered in Fall Semester only.

CS 266 Comp Org & Assembly Lang (3) Organization of computers; assembly language; instruction sets: CPU; memory; input/output; interrupts; DMA.

Pre: CS 150.

CS 282 Computer Competency Business (3) Create business spreadsheets emphasizing equations, references, mathematical functions, and charts. Use MS Excel to show trends, solve what-if scenarios, filter information, and summarize information. Design and create MS Access tables, relationships, forms, queries, and reports to analyze business data. Format work professionally.

CS 300 Web Site Management (3) Advanced topics in web site administration. Issues covered include: site management (operating system, web server and database installation and administration); security (cryptography, authentication, digital certificates); and content (site design, ethical and business considerations).

Pre: CS 200 or instructor's consent.

CS 321 Data Structures (3) Basic concepts of space/time efficiencies Algorithms and data structures for searching (binary search trees, AVL trees, hash tables) and sorting. Graph algorithms. Data compression using Huffman codes.

Pre: CS 151 and 241, or instructor's consent.

CS 340 Graphical User Interfaces (3) Study of the graphical user interface as applied to computer software. Examination of history, human factors, design, technology and implementation of graphical user interfaces.

Co-requisite: CS 321.

CS 350 Systems Programming (3) Introduction to systems programming in the UNIX environment. Topics include the UNIX command shells and scripting, the C programming language, UNIX programming tools and system calls, processes and process management, file and console I/O, and other selected topics. Designed for students interested in scientific, engineering or systems programming, systems administration or graduate education in computer science.

Pre: CS 151.

CS 407 Intro To Numerical Analysis I (3) Solutions of equations in one variable, direct and iterative methods for systems of linear equations, the algebraic eigenvalue problem, interpolation and polynomial approximation, error analysis and convergence for specific methods. Offered spring semester. (Same as MATH 407).

Pre: C in MATH 206 and MATH 311 and programming experience.

CS 410 Elemts Computer Architec (3) (lec., lab) Basic Machine Architecture, Cache Memory, Computer Arithmetic, RISC, Instructional-level Parallelism, Superscalar Processors, Microprogrammed Control, Parallel Processing, Performance Evaluation.

Pre: CS 266 and 321.

CS 420 Database Internals (3) Concepts and methods for managing persistent data. Study of stream, sequential, relative and indexed organizations. Implementation techniques and performance. Introduction to SQL. XML as a data transport and storage mechanism.

Pre: CS 321.

CS 421 Database Systems Design (3) Data models: hierarchical, network, relational, object oriented. Relational database management systems. Database design. Client/server systems. Web access to databases. Database administration and security. Transaction management. Database programming.

Pre: CS 420.

CS 422 Database Analytics (3) Further study of database design. Administrative and user capabilities of a modern database management system. Database security. Transaction management. Database programming: client and server. Two and three-tier client server systems. Web services and mobile applications. Data transformation. XML as a data transport, and storage mechanism.

Pre: CS 421.

CS 430 Operating Systems (3) Covers the concepts, issues and design of modern operating systems. Topics include processes and state, concurrency, resource management algorithms for memory, processors and I/O devices, protection and security. Case studies of popular workstation, server and mainframe operating systems. Laboratory projects teach concurrent programming and OS implementation techniques.

Pre: CS 266, CS 321.

CS 431 Networks & Data Commun (3) Thorough survey course covering major networking concepts such as Link-level Flow, Error Control, Congestive Control and QOS. Modern network protocols such as TCP/IP, ATM, Frame Relay, Ethernet, Fiber Channel and Wireless LANs will be compared and contrasted.

Pre: CS 321.

CS 435 Information Assurance (3) An overview of the field of information assurance and computer security. Covers confidentiality, integrity, and availability that arise in different areas of computer technology, as well as legal, ethical, and managerial aspects of security.

Pre: CS 321.

CS 440 Artificial Intelligence (3) Fundamental concepts of artificial intelligence including problem solving, heuristic search and knowledge representation. Discussion of applications such as game playing, theorem proving, and knowledge based expert system.

Pre: CS 321.

CS 450 Org Of Programming Lang (3) Advanced introduction to the concepts and issues in the design of computer programming languages. Topics include classification of languages, types, semantics, special forms parameter passing, closures, object-orientation, continuations, concurrency, exceptions, interpreters and garbage collection. Laboratory projects highlight design decisions and teach interpreter implementation techniques.

Pre: CS 321.

CS 451 Compiler Theory (3) Study of LL, LR, LALR grammars and compiler techniques suitable for programming languages for use in constructing scanners, parsers, code generators, code optimizers for a compiler. Use of compiler construction tools such as lex and yacc to develop a compiler for a block structured programming language.

Pre: CS 321.

CS 460 Software Engineering I (3) Emphasizes planning, analysis, and design phases of the Software Development Life Cycle with one model of the SDLC covered. Goal is to learn tools and techniques for sound requirement assessment and, working as a team, produce a verified design of a real software product.

Pre: CS 321, ENG 287. (GenEd/IntReq: GCC)

CS 461 Software Engineering II (3) Emphasizes implementation, installation and maintenance phases of the SDLC covered in CS 460. Goals are to learn specific techniques and tools for product development testing, measurement and documentation. Team will complete product.

Pre: C or better in CS 460.

CS 470 Theory Of Computing (3) Study of various models of computation and their relation to formal languages: finite automata, push-down automata, Turing machines, regular, context-free, and recursively enumerable languages. Unsolvability, NP completeness.

Pre: CS 321.

CS 485 Social Network Analysis (3) Covers the six degrees of separation, models of the small world, page rank, network effects, P2P networks, network evolution, spectral graph theory, virus/news propagation, core-periphery, link prediction, power-laws, scale free networks, network communities, hubs and authorities, bipartite cores, information cascades, influence maximization.

Pre: CS 151.

CS 495 CS Professional Seminar (1) Computer science and software engineering are careers demanding technological and ethical application of computer hardware, software, and human resources. Course emphasis is on entry into and growth in these careers showing the balancing of needs amongst technology, employee, employer, and society.

Co-req: CS 461.

CS x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

CS x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.

Pre: instructor's consent.

Dance (DNCE)

College of Arts and Sciences, Performing Arts Department

DNCE 110 Pilates Beginning Matwork (1) Body conditioning program in Pilates method. Emphasis on fundamentals and beginning mat exercises.

DNCE 151 Dance Techniques (2) Study of the basic vocabulary of dance and the collaborative contributions of choreographers, dancers and musicians. Experiential work in the development of basic stage movement, including understanding of period demands. May be taken concurrently with music and drama technique courses. Required for all Performing Arts majors.

DNCE 160 Ballet I (3) Introduction to classical ballet. Movements, techniques and appreciation of ballet. Previous experience not required. May be repeated once for credit.

DNCE 180 Jazz Dance I (3) Introductory course in jazz dance style and techniques. May be repeated once for credit.

DNCE 190 Modern Dance I (3) Basic techniques of Modern Dance as an art form. May be repeated once for credit.

DNCE 210 Pilates Intermediate Matwork (1) Continuation of DNCE 110. Emphasis on additional strength and stamina skills.

Pre: DNCE 110 or instructor's consent.

DNCE 251 Intro To Dance (3) History, scope, and theory of human movement. Study of the correlation of dance, music, and visual expression. Not a performance course.

DNCE 260 Ballet II (3) Continuation of Ballet I. Movements, techniques, and appreciation of ballet. Emphasis on developing strength, flexibility, and control in classical balletic style. May be repeated once for credit.

Pre: DNCE 160 or instructor's consent.

DNCE 280 Jazz Dance II (3) A continuation of Jazz Dance I. May be repeated once for credit.

Pre: DNCE 180 or instructor's consent.

DNCE 290 Modern Dance II (3) Second level Modern Dance. Designed to develop physical flexibility, body control, and a more acute rhythmic sense. May be repeated once for credit.

Pre: DNCE 190 or instructor's consent.

DNCE 360 Ballet III (3) This course will emphasize intermediate ballet techniques for the dancer with previous training. It will begin the study of pointe work for qualified females and jumps and turns specifically for males. May be repeated once for credit.

Pre: DNCE 160, DNCE 260, or instructor's consent.

DNCE 371 Choreography (3) An introduction to the basic techniques of creating dance. Public performance required. May be repeated once for credit.

Pre: DNCE 180 or DNCE 190, or instructor's consent.

DNCE 401 Dance Ensemble (3) Preparation and performance of techniques and repertoire at the advanced level. Public performance required. May be repeated for credit.

Pre: audition.

DNCE 419 Dance In Education (3) Dance activities for young people. Appropriate for teachers, group workers, recreation majors, and others working with children. Supervised field activities.

Pre: Performing Arts core courses, upper division standing, or instructor's consent. (GenEd/IntReq: GCC)

DNCE 450 History of Dance (3) Development of Western theatrical dance from Ancient Greece through 19th century ballet to the present, including modern dance, contemporary ballet, and dance forms of musical theater and film.

Pre: Performing Arts Core, upper division standing or instructor's consent.

DNCE 460 Ballet IV (3) Intermediate/advanced ballet technique with the continuation of pointe work for qualified females. Introduction to classical partnering work. May be repeated once for credit.

Pre: DNCE 360 and audition.

DNCE x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

DNCE x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.

Pre: instructor's consent.

Drama (DRAM)

College of Arts and Sciences, Performing Arts Department

DRAM 171 Stage Techniques (2) Required for all Performing Arts majors. Study of the basic vocabulary of the stage and the collaborative contributions of directors, actors, technicians, and house personnel. Experiential work in the development of stage presence and etiquette. May be taken concurrently with music and dance technique courses.

DRAM 221 Beginning Acting I (3) Individual exercises and group activities that emphasize voice, movement, and relaxation through in-class improvisation and performance of monologues and two-person scenes. Beginning play analysis.

DRAM 222 Beginning Acting II (3) Continuation of DRAM 221, with emphasis on building the ensemble, basic character work, refining vocal production, and expanding movement vocabulary. Performance of group scenes from modern and contemporary plays. Play analysis based on method acting theory.

Pre: DRAM 221.

DRAM 271 Introduction to Theatre (3) Theatre history and play analysis from the standpoint of production. Lab work in three aspects of play production: acting, directing, design.

DRAM 280 Basic Stagecraft (3) Introduction to beginning concepts of design and construction of scenery for the stage. Overview of the development of scenography from Greek theatre to the modern proscenium stage. Study will include two- and three-dimensional scenery, properties, and finishing techniques.

Pre: concurrent registration with DRAM 280L.

DRAM 280L Basic Stagecraft Laboratory (1) (lab) Supervised work in stagecraft, lighting and sound.

Pre: concurrent registration with DRAM 280.

DRAM 318 Playwriting (3) Basic course in writing for the stage. Development of theme, action, and characterization for the one-act play form.

Pre: instructor's consent. (Same as Eng 318)

DRAM 321 Styles Of Acting (3) Advanced study for actors who have completed Beginning Acting. Concentrated scene work, script analysis, character development, and style study. Comparative exercises in acting for the stage and camera. Performance of workshop material.

Pre: DRAM 221, 222, and instructor's consent.

DRAM 322 Acting Shakespeare (3) In-depth study of Shakespearean texts from the standpoint of production and acting style. Historical study of Renaissance production techniques. Performance of scenes resulting from work on vocal production, period movement, and text analysis.

Pre: DRAM 221, 222, and instructor's consent.

DRAM 330 Stage Management (3) Study of the responsibilities of a production stage manager, from rehearsals through mounting a show, as coordinator of a production team. Development of the prompt book and forms needed to organize the technical elements of a production.

Pre: DRAM 271, 280 and 364.

DRAM 340 Stage Makeup (3) Studio work in design and application of stage make-up. Study and development of character, corrective, and three-dimensional makeup. Required work on major production.

Pre: DRAM 170 or 221, or previous stage makeup experience, and instructor's consent.

DRAM 350 Stage Costume (3) Study of costume design, theory, and practice. Survey of historical and modern costume. Practical experience in design and construction including required work on major production.

Pre: DRAM 170 or 221, or instructor's consent.

DRAM 350L Stage Costume Laboratory (1) (lab) Basic instruction in the use of sewing machines, patterns and hand-sewing techniques for costume building. Includes understanding of fabrics and specific skills related to garment construction. Required for students in DRAM 350 who do not have previous sewing experience.

Pre: Concurrent enrollment in DRAM 350 and permission of the instructor.

DRAM 364 Advanced Theatre Practicum (1-4) Supervised work and/or performance for the advanced student in one or more of the following areas: acting, stagecraft/construction, lighting, costuming, sound, makeup, publicity, arts administration, box office techniques. May be repeated for a total of 8 semester hours.

Pre: DRAM 264 or 340 or 350 and consent of the instructor.

Hrs/wk: Lectures-2 Lab-Variable* *Lab hours reflect variable credit(s): 1 credit = 32 lab hrs./semester; 2 credits = 64 lab hrs./semester; 3 credits = 96 lab hrs./semester; 4 credits = 128 lab hrs./semester

DRAM 380 Theatre Design (3) Study of elements of scenic and lighting design for the stage. Production of renderings, models, elevations, and plots. Work on mainstage and/or studio production.

Pre: DRAM 264, and art & physics courses required for PARTS degree in Technical Theatre.

DRAM 383 Japanese Theatre & Performance (3) This course introduces the performance traditions in Japan, ranging from rituals to dance and theatre-traditional art forms such as kagura, noh, kyogen, kabuki, bunraku, to modern theatre after Japan's Westernization. Through readings and visual materials, students will observe the historical development of Japanese theatre and other performing art forms, from the ancient period to contemporary. At the same time, students are required to examine the Japanese art forms from the anthropological and sociological perspectives. The unique aspects of Japanese art forms-fusion of daily behavior, cultural appropriation, and intercultural elements-will be considered. Students also look at the role of performing arts and its preservation (like transmission of skills from generation to generation).

Pre: ENG 100, 100T, 100H, ESL 100, or 100T. (Same as JPNS/JPST 383).

(GenEd/IntReq: H/A/P, HPP)

DRAM 387 Performance Education (3) In this course, the students are guided through the process researching, writing, rehearsing and performing a series of educational and entertaining presentations that deal with science and Hawaiian culture. Presentations will be shared with the general public in a museum theater setting at Imiloa Astronomy Center of Hawai'i. Course may be repeated once for credit.

Pre: COM 251 or DRAM 171 or DRAM 221 or instructor's consent. (Same as COM 387)

DRAM 390 Survey Of Drama Literature (3) Analysis and discussion of plays from the canon of Western dramatic literature, focusing on dramatic action, character relationships, play structure, staging, and thematic considerations.

DRAM 419 Drama in Education (3) Study of the theory and application of creative dramatics, developmental theatre, and curriculum-centered drama activities in educational settings serving children and youth. Opportunities for field work will be incorporated into class activities.

Pre: Performing Arts core or instructor's consent. (GenEd/IntReq: GCC)

DRAM 421 Acting Troupe (3) Rehearsal and performance of works from Western literature and ethnic non-Western sources, including period drama, avant-garde theatre, and the contemporary drama of Hawai'i and the Pacific. Emphasis on ensemble performance. Refinement of individual skill and group interactions acquired in DRAM 321, 322. Public performance required. May be repeated for a total of 6 semester hours.

Pre: DRAM 221, 222, 321, 322, audition, or instructor's consent.

DRAM 430 Directing (3) Basic practical course in how to direct a play. Students direct one-act plays or scenes from full length plays.

Pre: DRAM 170, 221, 260, or 264, and 321, and instructor's consent.

DRAM 445 Lighting Design (3) A seminar in theatrical lighting design and presentation. Development of the lighting plot and paperwork used in implementing designs. Study of lighting technology.

Pre: DRAM 280, 380, or instructor's consent.

DRAM 490 Lyric Theatre (3) Extensive study of history, theory, and techniques that shaped the American Musical Theatre genre, with emphasis on major composers, choreographers, and performers. Lab work in singing, dancing, costuming, makeup, and technical requirements, leading to a final performance project.

Pre: DRAM 170, 221, 321 and consent of the instructor.

DRAM 490L Lyric Theatre Lab (1) (lab) Experiential study of notable choreographers, directors, and actors through complete scenes, songs and dances that are representative of the major periods and styles within musical comedy from the 1920s to the present. Emphasizes in-class performance derived from training in voice, dance and acting.

DRAM x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

DRAM x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

Economics (ECON)

College of Business and Economics

ECON 100 Intro To Economics (3) Economic principles for non-majors. Emphasis on the applications of theory to problem solving. (Not more than 3 credits may be granted for completion of both ECON 100 and ECON 150 at Hawaii Community College.)

ECON 130 Intro To Microeconomics (3) (Formerly 201) How individual prices are determined. Efficient consumer-producer decision making.

Pre: MATH 104F or MATH 115, MATH 205 or higher; or instructor's consent.

ECON 131 Intro To Macroeconomics (3) (Formerly 200) The functioning of economic systems with emphasis on the forces determining levels of, and changes in, national income, employment and the price level.

Pre: ECON 130 (formerly ECON 201).

ECON 300 Inter Macroecon Theory (3) Determination of income, employment, price levels; fiscal and monetary policies.

Pre: ECON 131.

ECON 301 Inter Microecon Theory (3) Price determination under monopoly, oligopoly, and competition. Analysis of demand and cost.

Pre: ECON 130, MATH 115 or MATH 205.

ECON 302 Managerial Economics (3) Application of economic and statistical concepts for business decisions. Subjects cover projection of demand and production, case analysis, problems of forecasting, multifactors and multiproducts, technological change: capital budgeting, input-output analysis, and programming techniques.

Pre: QBA 361 and ECON 130.

ECON 305 Hist Of Econ Thought (3) The ideas and theories of major contributors to economic thought since the mid-18th century. The development of economic thought and the interrelationships between the several branches of economic theory.

Pre: ECON 130, 131.

ECON 310 Economic Development (3) Analysis of growth, structural change, development patterns, foreign investment, foreign trade, and development policies and strategies; emphasis on Far East and South Pacific Islands.

Pre: ECON 130, 131. (GenEd/IntReq: H/A/P)

ECON 330 Hawaiian Economy (3) Analysis of the local and state economy in terms of structure, problems and issues as they relate to the U.S. mainland and international arena.

Pre: ECON 130, 131. (GenEd/IntReq: H/A/P, HPP)

ECON 340 Money & Banking (3) Relation of monetary system to price level, employment and income; nature and functions of money and banking; role of money in international trade and inflation.

Pre: ECON 131.

ECON 350 Urban-Regional Economic Analy (3) Locational analysis of economic activity. Metropolitan and regional growth and development.

Pre: ECON 130, 131.

ECON 360 International Trade & Welfare (3) Theoretical analysis of international trade, current international economic problems, and trade impact on international welfare.

Pre: ECON 130, 131 or instructor's consent.

ECON 361 International Finance (3) Balance of payments, foreign exchange rate policies, and their impact on domestic employment, inflation, internal and external balances, and other related topics.

Pre: ECON 130, 131.

ECON 370 Government Finance (3) An explicit introduction to the behavior and objectives of government in the economic system. Analysis focuses on the rationale of nonmarket institutions and on the two groups of agents that operate government, the politicians and the bureaucrats, as these agents allocate expenditures for government activities.

ECON 380 Natural Resource Env Eco (3) An analytical framework for examining the relationships among environmental quality, natural resource use, and economic and political systems; analysis of circumstances that give rise to environmental problems, resource use conflicts, and possible policy solutions to these problems and conflicts. The course will emphasize issues pertaining to Hawai'i.

Pre: ECON 130.

ECON 390 Econometrics (3) Use of mathematical and statistical techniques to model and test the reality of economic theory, tests of hypotheses and forecasting.

Pre: MATH 121 or QBA 260.

ECON 414 Economics & Politics in Games (3) Game theory is a mathematical tool used in a variety of fields such as economics, political science, law, sociology, biology, and computer science. The purpose of this course is to provide an introduction to game theory and to explore its applications to Economics and Politics. Theoretical components studied in the course are basic equilibrium notions (Nash equilibrium, subgame perfect equilibrium) in normal-form and extensive-form games, including signaling and repeated games.

Pre: ECON 130 and MATH 115 or MATH 205.

ECON 415 SE Asia-China Econ Relations (3) Analysis of Southeast Asia-China economic relations. China's role in economic development of Southeast Asian nations, the bilateral economic relations between each of the Southeast Asian countries and China, the ASEAN-China multilateral relations and the importance of the ASEAN-China Free Trade Agreement to the future of the region and the world. (GenEd/IntReq: H/A/P)

ECON 416 Asia-Pacific Econ Integration (3) Analysis of Asia-Pacific economic cooperation. Trade agenda of the Asia-Pacific as a whole and the free trade perspectives of each sub-region and each country. The importance of the Asia-Pacific free trade area and prospects for linking the region with the rest of the world. Opportunity and strategies for the US' trade with the region.

Pre: ECON 130 and ECON 131, or instructor's consent. (GenEd/IntReq: HPP)

ECON 430 Quantitative Forecasting (3) Introductory level of forecasting for business and economics with an emphasis on Hilo and Hawai'i economies and businesses. Topics include time series techniques, linear regression forecasts, several miscellaneous forecasting models, and forecasting evaluation.

Pre: QBA 260 or MATH 121 or instructor's consent.

ECON x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

ECON x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

Education (ED)

College of Arts and Sciences

ED 210 Introduction to Teaching (3) This course is an introduction to education with an emphasis on the following topics: the teaching profession, the analysis of reasons for entering teaching and factors that influence these reasons; the characteristics of the present teaching force; complexities of teaching; the current trends and issues in education; and the role of the school within the community. Student will be provided an opportunity for voluntary field experience totaling 10 hours. (GenEd/IntReq: GCC)

ED 243 Intro to Math for Elem Tch (3) Introduction to Mathematics for Elementary Teachers is a hands-on, problem based course designed to help the elementary teacher develop a basic understanding of content area skills as well as process and thinking that related to mathematical problem-solving, sets, numbers and operations, number theory, statistics and probability. This course lays a solid foundation for ED 343.

ED 310 Foundations of Education (3) Introduction to the practice of thinking and the development of intelligence within the complexities of a diverse and transforming society. Historic aspects of education are explored along with philosophical and political movements so students understand education's potential. Critical thinking skills are developed to help students think seriously about education as a potential career and to prepare them for admission into the Teacher Education Program cohort. Required for admission into the Teacher Education Program cohort. Must be taken for grade.

Pre: GPA of 2.5 and junior standing, or instructor's consent.

ED 314 Educational Technology (3) Introduction to the theory and application of multimedia educational technology principles in 21st century learning environments. Course is contextualized in project-based and place-based learning. Special emphasis on Hawaiian and Pan Pacific history and culture. Required for admission into the Teacher Education or DL STEPS program. Must be taken for a grade.

Pre: CS 101 or equivalent, junior standing or instructor's consent. (GenEd/IntReq: H/A/P)

ED 341 Literacy Dev in Elem School (4) This course is designed to provide participants with basic knowledge and skills which can be used to teach and assess reading and writing to foster literacy development in the elementary school. The content of this course emphasizes foundational knowledge of reading and writing processes (K-6). Field experience: Practical application of literacy theories, methods and strategies in local schools. Supervised observation and teaching with emphasis on reading and writing instruction.

Pre: GPA of 2.5 and junior standing, or instructor's consent.

ED 342 Science for Elem Schl Teachers (3) Science for Elementary teachers is a hands-on inquiry course designed to help the elementary teacher develop a basic understanding of the process and thinking that relate to scientific inquiry, habits of mind, safety and science and technology in society. In a supportive classroom environment, using place-based education as a model, teacher candidates will build scientific foundation through exploration of science concepts and processes related to the five strands in the Hawaii Content and Performance Standards III (HCPS III). Offered Spring Semester only. Required for admission into the Teacher Education Program. Must be taken for a grade.

Pre: CS 100, GPA of 2.5 and junior standing or instructor's consent.

ED 343 Math for Elem School Teachers (3) Math for Elementary teachers is a hands-on, problem based course designed to help the Elementary teacher develop a basic understanding of the ten NCTM (National Council for Teachers of Mathematics) standards, including content area skills as well as process and thinking that relate to mathematic problem-solving, reasoning, connections, communication and representation. Content topics include fractions, algebraic reasoning, and geometry. It is assumed that students have a solid understanding of sets, numbers and operations, and number theory. Required for admission into the Teacher Education Program. Must be taken for letter grade.

Pre: CS 100, GPA of 2.5 and junior standing or instructor's consent.

ED 344 Soc Studies for Elem Teachers (3) An inquiry based course designed to help the Elementary teacher develop a basic understanding of the ten Social Studies themes identified by the National Council of Teachers of Social Studies. This course will include the content area skills related to the five disciplines, history geography, economics, political science/civics, cultural anthropology which create the Social Studies Hawai'i Content and Performance Standards (HCPS III). Required for admission into the Teacher Education Program Cohort. Must be taken for a letter grade.

Pre: CS 100, GPA of 2.5 and junior standing or instructor's consent.

ED 346 Teaching Children's Literature (3) This course focuses on children's literature and its impact on social, emotional and intellectual development for elementary school children. Aesthetic appreciation and creative development will be explored by examining theory and practice about the use of literature with children. Must be taken for a grade.

Pre: GPA of 2.5 and junior standing or instructor's consent.

ED 347 Intgr Sci/Soc Stud Elem School (3) (lec., lab) This course is designed to strengthen prospective elementary teacher content knowledge in science and social studies. Students will gain content knowledge by practicing various methods of teaching integrated science/social studies and develop authentic applications in real world situations. The fundamental science content topics covered will include: the inquiry process, physical, life, earth/space, and technology. The fundamental social studies content topics covered will include: geography, world history, UH history, political science, economics, anthropology, sociology and psychology. Teaching and learning of these content areas will center on place based education with the local environment as the integrating context. Required for admission into the TEP Program. Must be taken for grade.

Pre: GPA of 2.5 and junior standing or instructor's consent.

ED 350 Developmntl Concppts Of Learnng (3) Theories of development focusing on the integration of physical, social, emotional and cognitive development during the school-aged years, children (grades K-6) and adolescents (grades 7-12). Systematic observation and analysis of behavior of school-aged children at home, in the community and at school. 20 field hours in schools required. Must be taken for grade.

Pre: GPA of 2.5 and junior standing or instructor's consent.

ED 469 Prin of Instructional Planning (1) Inquiry, decision-making processes, strategies of integrated planning in learning environments, and evaluating student learning processes. Overview of national and state standards, materials, content and meta-curricular methodologies. Teacher candidates will collaboratively design unit blueprints as outlined in the Field Experience Handbook using content standards, representing one subject area to design the unit blueprint.

ED 470 Diverse Learners in Classroom (3) An examination of individual differences related to intelligence, achievement, and school success. Legal, ethical, and professional responsibilities and strategies for meeting the needs of diverse students under the Individuals with Disabilities Education Act (IDEA) and Section 504 of the Rehabilitation Act of 1973. Focus on elementary age children or adolescents.

Pre: TEP Cohort acceptance.

ED 471 Art of Classroom Management (3) Theoretical framework and practical strategies of planning and managing elementary or secondary learning environments. Exploration of instructional principles and theories of classroom management. Application of two- and three-dimensional media to represent self exploration and demonstrate professional reflection.

Pre: TEP Cohort acceptance.

ED 472 Elem Integrated Math/Sci Mthds (4) Exploration of mathematical and scientific concepts through national/local standards using problem solving and inquiry to develop integrated, multi-disciplinary units. Strategies of teaching math and science in grades K-6, including classroom organization, set-up and safety.

Pre: TEP Cohort acceptance.

ED 473 Elem Literacy/Lang Arts/Soc St (4) Overview of sociopsycholinguistic reading and writing processes. Emphasis on meaning-based strategies, literature-based literacy development and reading-writing connections. Exploration of the social studies strands and language, as a K-6 integrated and inter-disciplinary approach to thematic planning to enhance the study of culture while reinforcing concepts and skills in each discipline.

Pre: TEP Cohort acceptance.

ED 474 Secondary Teaching Methods (4) Methods of teaching at the secondary level (grades 7-12). Instructional design and strategies which support development of planning, designing, and assessing meaningful learning experiences within respective subject areas.

Pre: TEP Acceptance.

ED 475 Secondary Math/Science Mthds (4) Exploration of mathematical and scientific concepts through national/local standards using problem solving and inquiry to develop integrated, multi-disciplinary units which include technology. Strategies of teaching math, science at secondary level (grades 7-12) including classroom organization, set-up and safety.

Pre: TEP Cohort acceptance.

ED 476 Literacy in Secondary School (2) Content area literacy, sociocultural theories and strategies to enhance students' text comprehension and study. Writing in the content areas, use of reference material, young adult literature, and non-print media in the teaching of content area concepts within and across content areas in multicultural classrooms.

Pre: TEP Cohort acceptance.

ED 478 Issues Assessmt & Eval Sec Sch (2) Theory and techniques of measurement and evaluation in secondary education, including supervised experience in authentic/performance based assessment, traditional instrument development and analysis, grading and reporting results.

Pre: TEP Cohort acceptance.

ED 479 Field Experience I (2) Practical application of theories and teaching methods and strategies in local schools. Supervised observation and teaching with emphasis on lesson and unit planning and instruction. Offered on a CR/NC basis.

Pre: TEP Cohort acceptance.

ED 481 Field Experience I (1) (lab) Practical application of theories and teaching methods and strategies in schools. Supervised observation and teaching with emphasis on lesson and unit planning and instruction. Offered on a CR/NC basis.

Pre: TEP DL STEPS acceptance.

ED 482 Field Experience II (1) (lab) Practical application of theories and teaching methods and strategies in schools. Supervised observation and teaching with emphasis on lessons and unit planning and instruction. Offered on a CR/NC basis.

Pre: TEP DL STEPS acceptance.

ED 483 Seminar in Teaching I (1) Professional development through discussion of educational issues and applications of theories and teaching methods through field experiences in local schools. Offered on CR/NC basis, repeatable one time.

Pre: TEP or DL STEPS acceptance.

ED 484 Effective Teaching Portfolio (1) The integration of art, media, and technology in the preparation of an effective teaching portfolio. Offered on CR/NC basis.

Pre: TEP Cohort acceptance.

ED 485 Seminar in Teaching II (3) Analysis and discussion of common management and instructional concerns of beginning teachers by student teachers and their supervisors. Individual identification and analysis of teaching problems. Offered on CR/NC basis.

Pre: TEP Cohort acceptance.

ED 486 Field Experience II (10) Supervised student teaching and professional development experiences in local schools. Supervised observation and teaching with an emphasis on advanced lesson and unit planning. Offered on CR/NC basis.

Pre: TEP Cohort acceptance.

ED x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

ED x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.

Pre: instructor's consent.

Electrical Engineering (EE)

College of Arts and Sciences, Pre-Engineering Program

EE 211 Basic Circuit Analysis (3) (lec., lab) Linear circuits, time-domain analysis, transient and steady-state responses, phasors, impedance and admittance; network or system functions, frequency response and filtering, resonance.

Pre: MATH 206.

EE x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

EE x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.

Pre: instructor's consent.

Engineering (ENGR)

College of Arts and Sciences, Pre-Engineering Program

ENGR 102 Engineering the Future I (1) Overview of the engineering discipline, art and profession, impact on society and the environment, and strategies for studying engineering. CR/NC only.

ENGR 103 Engineering the Future II (1) Continuation of the overview of the engineering discipline, art and profession, impact on society and the environment, and strategies for studying engineering. CR/NC only.

ENGR x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

ENGR x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.

Pre: instructor's consent.

English (ENG)

College of Arts and Sciences

ENG 100 Composition I (3) Instruction and practice in writing clear, effective university-level essays and research paper. Attention to all stages of the process: generating ideas, drafting, revising, and editing.

Pre: ENG 100 on Writing Placement Examination.

ENG 100H Honors Expository Writing (3) Honors instruction and practice in writing clear, effective university-level essays and research paper. Attention to all stages of the process: generating ideas, drafting, revising, and editing.

Pre: recommendation on Writing Placement Exam, Chancellor's Scholar designation, and instructor's consent.

ENG 100T Composition with Tutorial (3) Instruction and practice in writing clear, effective university-level essays and research paper. Attention to all stages of the process: generating ideas, drafting, revising, and editing. Attending regular sessions is required. Equivalent to ENG 100 or ESL 100.

Pre: ENG 100T on Writing Placement Examination.

ENG 200 Intro to Literary Genres (3) An introduction to major genres in literature. The course will be offered at various times with different focuses: (A) Short Story and Novel; (B) Drama; (C) Poetry; (D) Popular Fiction; (E) Mythology and Folklore; (F) Autobiography; (G) Introduction to Graphic Novels and Comics.

Pre: C or better in ENG 100, ENG 100T, ESL 100, or ESL 100T. (GenEd/IntReq: GH)

ENG 201 Global Cinema (3) A course that offers students a critical examination of worldwide cinema. The course will cover film theory and film making techniques from countries such as Germany, Mexico, China, Senegal, Iran, and India. Students will undertake a critical study of various schools of film as they pertain to these national cinemas as well as explore the cultural and socio-political controversies surrounding cinematography.

Pre: C or better in ENG 100, ENG 100T, ESL 100 or ESL 100T. (Same as WS 201)

ENG 202 Literature of Human Rights (3) This course will explore narratives from a human rights perspective, beginning in the era shortly before the adoption of the Universal Declaration of Human Rights in 1948 and extending into the 21st century. Students will focus on geopolitical conditions that contribute to the suppression of human rights in areas around the globe, including, but not limited to, Chile, India, Nigeria, Iran, the Palestinian Territories, and the United States.

Pre: C or better in ENG 100, ENG 100T, ESL 100 or ESL 100T. (Same as WS 202)

ENG 204 Intr Race/Gender Film Studies (3) This course will focus on how race and gender historically shape individual and cultural experiences in America, as expressed in film. Key works that offer portrayals by and about various groups (i.e. gays/lesbian, immigrants, indigenous communities, mixed-race populations, etc.) will be critically compared and examined. Students will also discuss and address evolving audience responses to these works.

Pre: C or better in ENG 100, ENG 100T, ESL 100 or ESL 100T. (Same as WS 204)

ENG 205 Hawai'i on Screen (3) A critical look at the development of film in and on Hawai'i. The course will cover a number of silent era films as well as the development of the musical and the war story as popular genres in the Islands. The class will also focus on the problems of cultural, racial and gendered representation in mainstream cinematic depictions of Hawai'i as well as the contemporary emergence of local and indigenous filmmaking.

Pre: C or better in ENG 100, ENG 100T, ESL 100 or ESL 100T. (GenEd/IntReq: H/A/P, HPP)

ENG 206 Intro to Popular Culture (3) This course offers an introductory study of mainstream manifestations of culture. Students will critically assess the production, distribution, and consumption of various popular cultural genres, such as advertising, talk shows, sports programs, music videos and gossip magazines and websites, among many others.

Pre: C or better in ENG 100, ENG 100T, ESL 100 or ESL 100T. (Same as WS 206)

- ENG 209 Writing for Business (3)** Working from logical and rhetorical principles, this course prepares students to write in the informative, analytical, and persuasive modes required for their major field and in their careers. Intended for students majoring in Business and related fields. Includes a formal research project and report.
Pre: C or better in ENG 100, ENG 100T, ESL 100, or ESL 100T.
- ENG 215 Writing for Hum & Soc Sci (3)** Develops research skills and further prepares students to do types of source-based writing commonly expected in the humanities and social sciences. Emphasis on writing from logical and rhetorical principles, especially assertion, analysis, and evaluation.
Pre: C or better in ENG 100, 100T, ESL 100, or ESL 100T.
- ENG 225 Writing for Sci & Technology (3)** Working from logical and rhetorical principles, this course prepares students to write about science and technology in their academic disciplines and careers. Assignments include synthesis, process analysis, and argumentation. Intended for students majoring in the applied and natural sciences. Includes a formal research project and report.
Pre: C or better in ENG 100, ENG 100T, ESL 100 or ESL 100T.
- ENG 240 British Lit's Greatest Hits (3)** Designed for non-English majors and students who are considering majoring in English, this course offers an introduction to British literature from the 16th century to the present. Students will see an overview of British intellectual history and will develop the tools necessary to understand and appreciate great literature as an intellectual and a performance art form.
Pre: ENG 100/100T or ESL 100/100T.
- ENG 253 World Lit: Class-17th Century (3)** World Literature. Major works in translation. Classical to 17th century.
Pre: C or better in ENG 100, ENG 100T, ESL 100 or ESL 100T or instructor's consent.
- ENG 254 World Lit: 17th Cent-Present (3)** Major works in translation. 254: 17th century to the present.
Pre: C or better in ENG 100, ENG 100T, ESL 100, or ESL 100T or instructor's consent.
- ENG 257 Multicultural Literature (3)** This is a course designed for students who want to engage literature from various ethnic groups in the U.S. The course includes historical context regarding the production of these literatures, providing an overview of how these groups have developed their own literary techniques, genres, and canons.
Pre: C or better in ENG 100, ENG 100T, ESL 100 or ESL 100T. (Same as WS 257)
- ENG 275 Literature of the Earth (3)** Study of how people from a variety of eras and cultures have shaped their responses in poetry, fiction, drama and essays to changes in the natural world. This class will examine issues of globalization and environmental sustainability, with opportunities for research on connections between local and global environmental problems.
Pre: ENG 100, ENG 100T, ESL 100, or ESL 100T. (GenEd/IntReq: GCC)
- ENG 285 Intro to News Writing & Report (3)** Prepares students to write for newspapers, the internet, and other journalistic outlets. Includes coverage of news conferences, county council meetings, trials, sports, and writing feature stories.
Pre: ENG 100, ENG 100T, ESL 100, or ESL 100T. (Same as COM 285).
- ENG 286 Intro to Creative Writing (3)** Introduction to the theoretical, practical and artistic concerns of writing vivid and compelling prose fiction, poetry, and creative non-fiction. Students will be exposed to a range of critical and primary creative writing texts as they produce their own works in each genre.
Pre: C or better in ENG 100, ENG 100T, ESL 100 or ESL 100T.
- ENG 286A Intro to Fiction Writing (3)** An introduction to the theoretical, practical and artistic concerns of writing vivid and compelling prose fiction. Students will be exposed to a range of critical and primary creative writing texts as they produce their own works.
Pre: C or better in ENG 100, ENG 100T, ESL 100 or ESL 100T. (GenEd/IntReq: HPP)
- ENG 286B Intro to Poetry Writing (3)** An introduction to composing poetic verse. The course will introduce students to basic metrical patterns, rhyme schemes, and forms (including the sonnet, the cinquain, and the villanelle). Students will also undertake a study of key debates in the history of poetry, from both a western and non-western perspective.
Pre: C or better in ENG 100, ENG 100T, ESL 100 or ESL 100T.
- ENG 287 Introduction to Rhetoric (3)** Survey of rhetorical history, studies and practices from classical to contemporary. Discussion of social, political, legal and ethical aspects of rhetoric and rhetorical theory.
Pre: C or better in ENG 100, ENG 100T, ESL 100, or ESL 100T.
- ENG 289 The Rhetoric of Food (3)** A course designed for students interested in learning how and why food plays a central role in cultures around the world. Attention will be paid to how food affects political, religious, economic, social and cultural activities and decision-making in various countries/regions.
Pre: C or better in ENG 100, ENG 100T, ESL 100 or ESL 100T.
- ENG 290 Literature and Medicine (3)** English 290 provides students with the opportunity to study writers, poets, and artists confronting timeless issues dealing with the human body. The class will look at how and why novels, short stories, poems, plays and film cover the wide range of biological human conditions, from disease to sexuality to mortality.
Pre: C or better in ENG 100, ENG 100T, ESL 100 or ESL 100T.
- ENG 300 Intro to Literary Studies (3)** Introduces majors to the methods of research, analysis, close reading and argumentation that are essential to the successful reading of and writing about literature. Included is a comprehensive survey of literary terms, key concepts, literary forms and genres.
Pre: C or better in ENG 100, ENG 100T, ESL 100, or ESL 100T, and ENG 200 (A-F) and one additional 200-level writing or literature class (with exception of ENG 209 and ENG 225) or instructor's consent.
- ENG 302 Studies in Myth and Folklore (3)** A critical, comparative study of myth and folklore, which provides students with knowledge and analytical perspectives on the way various oral traditions inform English literature, past and present. *Pre:* C or better in ENG 300 or instructor's consent.
- ENG 304 Survey of British Lit I (3)** Survey of British Literature, Middle Ages to Enlightenment.
Pre: C or better in ENG 300.
- ENG 305 Survey of British Lit II (3)** Survey of British Literature, Romanticism to the Present.
Pre: C or better in ENG 300.
- ENG 314 Journalism (3)** Principles of journalism with emphasis on newspaper reporting. Methods of news gathering, writing and editing, research, interviewing, rewriting news releases, and covering campus events and beats.
Pre: ENG 100, 100T, ESL 100 or 100T, or instructor's consent.
- ENG 315 Advanced Composition (3)** Writing of essays with an emphasis on rhetorical and stylistic methods, structure, and voice.
Pre: ENG 100, 100T, ESL 100 or 100T and one of the following: ENG 209, 215, 225 or 287.
- ENG 318 Playwriting (3)** Writing one-act plays for the stage and for radio. Examining and applying the requirements and uniqueness of writing for the stage-play and for the radio-drama.
Pre: C or better in ENG 100, ENG 100T, ESL 100 or ESL 100T. (Same as DRAM 318)
- ENG 321 Morphology And Syntax (3)** Introduction to grammatical analysis and theory; practical experience in solving problems in morphology and syntax, using data drawn from a wide variety of languages.
Pre: LING 102 or instructor's consent. (Same as ANTH 321, LING 321).
- ENG 323 The Literature of Hawai'i (3)** A critical analysis of the history of literature in the Hawaiian Islands. Study will touch upon the politicization of the Hawaiian language, the insider/outsider debate, the emergence of local literature, and ethnic/racial divides in contemporary discussions of literary craft and study. Class will include oral narratives (chants, hula), expatriate literature (Bingham, London, Michener), and a wide range of local texts.
Pre: C or better in ENG 300 or instructor's consent. (GenEd/IntReq: H/A/P, GCC, HPP)
- ENG 324 Modern English Grammar & Usage (3)** The fundamentals of English morphology and syntax, conventions of written and spoken English, and sociolinguistic aspects of major English registers and dialects.
Pre: C or better in ENG 100, ENG 100T, ESL 100, ESL 100T, and LING 102 or LING 121, or instructor's consent. (Same as LING 324).
- ENG 345 Children & Literature (3)** Literature in English for and by children, with special emphasis on the ways in which literature promotes social, emotional, and intellectual development.
Pre: C or better in ENG 100, ENG 100T, ESL 100, ESL 100T or instructor's consent.
- ENG 347 Pidgins And Creoles (3)** A study of the world's pidgins and creoles with special reference to the Pacific region; the origin and nature of pidgins and creoles; the relationship between Hawai'i Creole English to other Creoles in the world. The link between the development of a Creole and language acquisition.
Recommended: LING 102 or 121. (Same as ANTH/LING 347). (GenEd/IntReq: H/A/P)
- ENG 350 Second Lang Acquisition Theory (3)** Current research and theories of learning a second or additional language from social, psychological and linguistic perspectives. Topics include the attainment of communicative competence, the critical period hypothesis, focus on form, individual learning styles, and learner autonomy. The emphasis is on how the knowledge of second language acquisition theory helps improve the quality of classroom language teaching.
Pre: C or better in ENG 100, ENG 100T or ESL 100, ESL 100T and LING 102 or instructor's consent. (Same as LING 350)
- ENG 351 Amer Lit: to the Civil War (3)** American literature to the Civil War.
Pre: C or better in ENG 300 or instructor's consent.
- ENG 352 Amer Lit: Civil War-Pres (3)** American literature from the Civil War to the present.
Pre: C or better in ENG 300 or instructor's consent.
- ENG 355 Women in Modern Lit & Film (3)** Literature and film by and about women from 1900 to the present. Feminist literary theory. (Same as WS 355).
Pre: C or better in ENG 100, ENG 100T, ESL 100, or ESL 100T, and a 200-level literature course or college-level Women's Studies course, or instructor's consent.
- ENG 356 Language and Gender (3)** Students engage in the analysis of gender as it relates to language and society. Provides students with analytic resources for thinking critically about the relationship between language and social practice. Students gather and analyze data based on current theories.
Pre: C or better in ENG 100, ENG 100T, ESL 100, or ESL 100T and LING 102, or instructor's consent. (Same as LING/WS 356)

ENG 364 Chnse Lit in Eng-Modern (3) Survey of major Chinese writings from 1919 to the present. Knowledge of Chinese is not required.

Pre: ENG 100, 100T, ESL 100, or 100T or instructor's consent. (Same as CHNS 364).

ENG 365 Japanese Lit in English (3) Survey of major works from earliest times to the present. Knowledge of Japanese is not required. (Same as JPST 365).
(GenEd/IntReq: H/A/P, HPP)

ENG 366 Utopia in Literature (3) A study of the "Utopian" theme in literature, from Plato's Republic to the modern science fiction novel.

Pre: ENG 100, 100T, ESL 100, or 100T and a 200-level literature course, or instructor's consent.

ENG 370 Advanced Film Studies (3) Students undertake a study of film/editing techniques, genres, and critical theories that influence the production and analyses of film and film-making. This course builds upon 200-level film classes in English.

Pre: C or better in ENG 300 or instructor's consent. Recommended: ENG 201, 204, 205, or 206.

ENG 371 Topics in Contemporary Lit (3) The development of contemporary fiction, poetry and drama concentrating upon representative works from 1945 to the present. This course may be taken twice provided that different topics are studied. The letter suffix indicates the topic.

Pre: C or better in ENG 300 or instructor's consent.

ENG 387 Lit of the Environment (3) A study of modern nature writing and environmental issues in several genres. Students will explore how humans negotiate their place in a variety of physical environments.

Pre: C or better in ENG 100, ENG 100T or ESL 100, ESL 100T and ENG 251, 252, 253 or 254 or instructor's consent.

ENG 400 Topics in Classical Literature (3) Studies in Greek and Roman literature from various perspectives (historical, cultural, social). May be offered by genre or theme. May be repeated for credit provided a different topic is studied.

Pre: C or better in ENG 300 or instructor's consent.

ENG 418 American Women Writers (3) This course will acquaint students with a variety of writings by women in the Americas. In addition to literary analysis, texts will be viewed in cultural, historical and theoretical contexts.

Pre: C or better in ENG 300 or instructor's consent.

ENG 419 Adv Topics in American Lit (3) A course which involves critical analysis of key periods and/or themes in American Literature, ranging from the Transcendentalists to the Beats. The course may also explore major ethnic canons, such as Native American, Chicano/a, Asian American, and African American. The course may be repeated, provided that different topics are studied.

Pre: C or better in ENG 300 or instructor's consent.

ENG 422 ESL Teaching Practicum (3) A course requiring students to engage in supervised teaching in an authentic classroom setting with actual learners of ESL. Provides the student with opportunities to observe, describe, interpret and understand the classroom environment and to reflect on the personal and professional attributes required for success in teaching. Students design and implement their own lesson plans and analyze and reflect on the classroom environment in relation to current research.

Pre: LING 102, 121 or 331, ENG/LING 324, 350, ENG 484.

ENG 423 Post-Colonial Literature (3) A critical analysis of the development of contemporary world literature in the wake of the fall of European empires. This class is designed to address the importance of writing in an age of changing national identities, shifting alliances, and volatile conflicts. Texts from Africa, Latin America, the Middle East, the Caribbean, and Hawai'i will be featured.

Pre: C or better in ENG 300 or instructor's consent. (Same as WS 423).

ENG 431 Fiction Writing (3) Advanced study and writing seminar in fiction. Students may repeat for credit (maximum 6 credits).

Pre: C or better in ENG 300 or instructor's consent. Offered Spring semester only.

ENG 432 Non-Fiction Writing (3) Advanced study and writing seminar in non-fiction. Students may repeat for credit (maximum 6 credits).

Pre: C or better in ENG 300 or instructor's consent. Offered Fall semester only.

ENG 433 Poetry Writing (3) Advanced study and writing seminar in poetry. Student may repeat for credit (maximum 6 credits).

Pre: C or better in ENG 300 or instructor's consent.

ENG 442 Romantic Literature (3) Poetry and prose from 1780 to 1832.

Pre: C or better in ENG 300 or instructor's consent. (Same as WS 422).

ENG 445 Victorian Literature (3) Poetry and prose from 1832 to 1900.

Pre: C or better in ENG 300 or instructor's consent.

ENG 448 Graphic Novels and Comics (3) Advanced study of major developments, schools and styles in contemporary graphic novels and comics. Emphasis on literary theory and analysis.

Pre: C or better in ENG 300 or instructor's consent.

ENG 461 Shakespeare (3) Selected histories, comedies, and tragedies not studied in ENG 462.

Pre: C or better in ENG 100, ENG 100T, ESL 100 or ESL 100T and a 200-level literature course, or instructor's consent.

ENG 462 Shakespeare II (3) The study of selected histories, comedies, and tragedies, with emphasis on performance choices as they determine, and are determined by, varying interpretations. Most plays studied in ENG 462 will differ from those studied in ENG 461. When the approach is different in the two courses, a play may be studied in both.

Pre: C or better in ENG 100, ENG 100T, ESL 100 or ESL 100T, and any college-level literature or drama class, or instructor's consent.

ENG 464 Modern Literature (3) British and American literature from 1900 to WWII with emphasis on the development of Literary Modernism.

Pre: C or better in ENG 300 or instructor's consent.

ENG 465 Post-Modern Literature (3) A study of literature (including theoretical essays, plays, film, and poetry) following WWII. The course will address contemporary responses to and against the Modernist Period and may cover movements such as Literature/Theatre of the Absurd, Magical Realism, the San Francisco Renaissance, the Black Mountain Poets, and the Angry Young Men's Movement.

Pre: C or better in ENG 300 or instructor's consent.

ENG 466 The Contemporary Fairy Tale (3) A study of a representative range of contemporary fairy tales in English, which incorporates current theories and analytical approaches to literary fairy tales and the politics of interpretation.

Pre: C or better in ENG 300 or instructor's consent.

ENG 469 Advanced Topics in Film (3) A course that analyzes advanced theoretical approaches to film and/or stage. The course may explore themes, such as film noir or 3rd Cinema. The course may be repeated, provided that different topics are studied.

Pre: C or better in ENG 300 or instructor's consent.

ENG 475 Topics in Literary Criticism (3) Advanced analyses of literature via specific schools of theoretical criticism, such as Psychoanalysis, Deconstruction, Marxism and New Criticism. The course may be repeated for credit, provided that a different topic is chosen.

Pre: C or better in ENG 300 or instructor's consent.

ENG 480 Women and Rhetoric (3) Survey of key female figures that have figured (or not figured) into the rhetorical canon. Analysis of women's use of rhetoric in everyday life and at historic moments and consideration of methodological and theoretical issues intersecting women, rhetoric and historical research.

Pre: C or better in ENG 300 or instructor's consent. (Same as WS 480).

ENG 482 Teaching Composition (3) Overview of current theory and research informing contemporary English composition instruction at elementary, secondary, and college levels with methods for application to teaching or writing at any level or within any discipline.

Pre: C or better in ENG 300 or instructor's consent.

ENG 483 Modern/Contemporary Drama (3) A study of works which have established or refined major traditions in modern theater, with some reading in critical theory.

Pre: C or better in ENG 100, ENG 100T or ESL 100, ESL 100T and 200-level coursework in literature. (Same as DRAM 483).

ENG 484 ESL Materials & Methods (3) Overview of current theory and practice in the teaching of English as a Second Language. In addition to studying and evaluating various theoretical approaches to ESL teaching and second-language learning, students will gain experience developing and using their own teaching materials.

Pre: C or better in ENG 100, ENG 100T, ESL 100 or ESL 100T and ENG/LING 350, or instructor's consent.

ENG 485 World Wide Web Writing: Praxis (3) Introduction and practice in concepts of writing for the World Wide Web, including document design, web publishing, designing, and evaluating web documents. Hands-on HTML, XHTML, and how to build, launch, and maintain a web page for non-computer science students.

Pre: C or better in ENG 300 or instructor's consent.

ENG 486 Applied Professional Writing (3) Preparation and practice in professional writing in real work settings. Includes planning, executing, and analyzing a writing project in the community.

Pre: C or better in ENG 300 or instructor's consent.

ENG 488A Single Author Pre-1700 (3) A semester long consideration of the literary output of a single author selected by the instructor. May be repeated for credit provided that a different topic is studied. Credit may be earned in each different period A) Pre-1700; B) Post-1700.

Pre: C or better in ENG 300 or instructor's consent.

ENG 488B Single Author Post-1700 (3) A semester-long consideration of the literary output of a single author selected by the instructor. May be repeated for credit provided that a different topic is studied. Credit may be earned in each different period: (A) Pre-1700; (B) Post-1700.

Pre: C or better in ENG 300 or instructor's consent.

ENG 489 Major Literary Movements (3) Advanced senior-level studies of schools and movements not covered by the Department's current British Literature offerings or by ENG 419. Possible topics include Realism and Naturalism, the Bengali Renaissance, Avant-Garde and the Era of the Decadents, the Celtic Revival, and Magic Realism. The course may be repeated, provided that different topics are studied.

Pre: C or better in ENG 300 or instructor's consent.

ENG 490 WWW Theory & Rhetoric (3) Considers composition and rhetoric in relation with technology and the Internet. Discussion of social, political, legal, and ethical aspects of writing for the World Wide Web. Focus on theory and rhetoric.

Pre: C or better in ENG 300 or instructor's consent.

ENG 492 Teaching Literature (3) A course that covers the praxis of teaching literature as well as the theory surrounding literary studies. Students will learn to create creative and analytical exercises and critically evaluate and utilize a wide range of resources for the teaching of poetry and prose at the secondary and post-secondary level.

Pre: C or better in ENG 300 or instructor's consent.

ENG x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

ENG x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

English as a Second Language (ESL)

*English Language Institute (ELI),
College of Continuing Education and Community Service*

ELI courses, while carrying administrative credit, do not count toward graduation from UH Hilo. All courses listed below are ELI courses, except ESL 100 and ESL 100T. For tuition and immigration purposes, the courses count as three semester credit hours each.

ESL 061 Listening & Speaking in Engl (3) Practice in listening comprehension, conversational skills, discussion skills, and understanding cultural differences. Includes language lab. This course does not count towards graduation from UH Hilo.

Entry requirement: ESL 061 placement English Proficiency Test.

ESL 062 Essentials Of English Grammar (3) Intensive drill in and contextual practice of the rules of noun and verb forms and usage in English, and in connectives and other function forms. This course does not count towards graduation from UH Hilo.

Entry requirement: ESL 062 placement in English Proficiency Test.

ESL 063 Basics Of Reading in English (3) Preparation for college-level reading with work in vocabulary, understanding complex sentence structures, reading strategies, and relation of writing to reading. Includes self-paced reading lab. This course does not count towards graduation from UH Hilo.

Entry requirement: ESL 063 placement in the English Proficiency Test.

ESL 064 Prep for English Composition (3) Preparation for college-level writing with work in vocabulary, sentence structure, and the development and reinforcement of paragraph skills. This course does not count towards graduation from UH Hilo.

Entry requirement: ESL 064 placement in English Proficiency Test and Writing Placement Exam.

ESL 071 Basic Communication Skills (3) Designed for non-native speakers to improve listening, thinking, and communicating ideas in English. Native-speaker lectures and speech practice accelerate the learning skills needed for college work. Includes language lab. This course does not count towards graduation from UH Hilo.

Entry requirement: ESL 071 placement in the English Proficiency Test or successful completion of ESL 061.

ESL 072 Basics Of English Grammar (3) Introduction and the practice of English grammar. Emphasis on accurate use of basic structures in both speaking and writing. This course does not count towards graduation from UH Hilo.

Entry requirement: ESL 072 placement in English Proficiency Test or successful completion of ESL 062.

ESL 073 English Reading Skills (3) Designed for non-native English speakers to build and acquire academic reading skills. Focus is on increasing reading speed, building vocabulary, previewing and predicting, skimming and scanning, and finding main ideas and details. The course also includes work in a self-paced reading lab. This course does not count towards graduation from UH Hilo.

Entry requirement: ESL 073 placement in the English Proficiency Test or successful completion of ESL 063.

ESL 074 Introduction To Composition (3) Introduction and practice in writing coherent, well-organized paragraphs as well as multi-paragraph essays in a variety of rhetorical styles. This course does not count towards graduation from UH Hilo.

Entry requirement: ESL 074 placement in English Proficiency Test and Writing Placement Exam or successful completion of ESL 064.

ESL 081 Academic Communication Skills (3) Designed for non-native English speakers to practice listening, thinking, and communicating ideas in English requisite for college study. Authentic lectures and formal speech practice expose students to the language used and required in academic coursework. Includes language lab. This course does not count towards graduation from UH Hilo.

Entry Requirement: ESL 081 placement in English Proficiency Test or successful completion of ESL 071.

ESL 082 Intermediate English Grammar (3) (lec., lab) An overview of advanced grammatical structures that are used in college-level speaking and writing. One-third of the class is a writing lab. The lab will be focused on identifying grammar problems and developing editing skills for academic writing.

Entry requirements: ESL 082 placement in English Proficiency test or successful completion of ESL 072. This course does NOT count towards graduation from UH Hilo.

ESL 083 Intro Academic Reading (3) A course for non-native speakers of English using authentic texts and selected fiction which is designed to develop reading skills necessary for college-level work. Emphasis on vocabulary development, finding main ideas and specific details, and drawing inferences. Training and practice in developing increased reading rates. Includes work in a self-paced reading lab. This course does not count towards graduation from UH Hilo.

Entry requirement: ESL 083 placement in English Proficiency Test or successful completion of ESL 073.

ESL 084 Intermediate Composition (3) Introduction and practice in writing expository essays. Attention to various stages of the writing process: generating ideas, drafting, peer review, and revision. Special emphasis on identification and editing of grammatical errors. This course does not count towards graduation from UH Hilo.

Entry requirement: ESL 084 placement in English Proficiency Test and Writing Placement Exam or successful completion of ESL 074.

ESL 085 American English Pronunciation (2) Designed for non-native speakers to improve their Standard American English (SAE) pronunciation. Emphasis is on making speech intelligible. Students will focus on vowel and consonant sounds, word-phrase, and sentence-stress, intonation, and rhythm. During class, students will practice differentiating speech sounds in both listening and production. Outside of class, student will use technology to practice. This course does not count towards graduation from UH Hilo.

ESL 100 Composition/Nonnative Speakers (3) Instruction in writing clear, effective university-level essays and research paper. Attention to all stages of the process: generating ideas, drafting, revising, and editing. *Entry requirements:* ESL 100 recommendation on the Writing Placement Examination and completion, exit by test, or concurrent enrollment in ESL 083. Once enrolled concurrently in ESL 100, a student may not drop the required ESL 083 class without dropping ESL 100 as well.

ESL 100T Composition/Non-Native Tutorial (3) Instruction and practice in writing clear, effective university-level essays and research paper. Fulfills expository writing (ENG 100) requirement for non-native speakers of English only. *Entry requirements:* ESL 100T recommendation on Writing Placement Exam and completion, exit by test, or concurrent enrollment in ESL 083. Once enrolled concurrently in ESL 100T, a student may not drop the required ESL 083 class without dropping ESL 100T as well.

ESL x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

ESL x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

Entomology (ENTO)

College of Agriculture, Forestry, and Natural Resource Management

ENTO 262 Intro Beekeeping (3) (lec., lab) Biology, behavior, and management of honeybees for honey production. Limited enrollment. *Pre:* instructor's consent.

ENTO 304 General Entomology (3) (lec., lab) Structure, classification and identification of insects. *Pre:* BIOL 175 or 176 or instructor's consent. (Same as BIOL 205)

ENTO 350 Advanced Beekeeping (3) (lec., lab) Advanced beekeeping practices designed to improve hive quality such as queen rearing, artificial insemination, and requeening, as well as the utilization of products from the hive. Limited enrollment. Repeatable once for a maximum of 6 credits. *Pre:* ENTO 262 or instructor's consent.

ENTO 374 Insect Pest Control (3) (lec., lab) Destructive and beneficial insects; principles of cultural, mechanical, legislative, biological, and chemical control. *Pre:* ENTO 304 or instructor's consent.

ENTO x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

ENTO x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

Environmental Studies/Science (ENSC)

College of Arts and Sciences

ENSC 100 Intro to Environmental Science (3) Introductory course linking the human and physical/ chemical/biological world. Emphasis on current global and local issues related to pollution, biodiversity, ecosystem services, climate change, resource consumption and sustainability. Focus on critical thinking and the integration of both natural and social science perspectives in understanding and addressing environmental issues.

Concepts and processes of global warming and climate change: electromagnetic radiation and energy balance, greenhouse effects, past climates, and local and global impacts and mitigation strategies. We will read and analyze classic and current journal articles and gain experience working with simple climate models.

Pre: ENSC 100 or GEOG 101. (Same as GEOG 301)

ENSC 385 Fld Meth in Geog & Environ Sci (3) Geographic field methods for assessment and monitoring the physical/biological/anthropogenic environment. Instrumentation, data collection, and analysis; planning and land management applications. *Pre:* Junior or senior status and instructor's consent. (Same as GEOG 385). (GenEd/IntReq: H/A/P)

ENSC 436 Environ Politics in Pacific (3) This course will examine the ways that government policies, economic development and globalization affect the environment in the Pacific region as well as the ways that environmental problems affect political debates and actions. Utilizing the research approach of political ecology this course for advanced students will explore contemporary viewpoints on climate change, environmental preservation, population growth, land degradation, marine and terrestrial resource management, environmental contamination, and other environmental issues across Polynesia, Melanesia and Micronesia.

Pre: Junior or Senior standing and completion of one of the following: ENSC 100, GEOG 335, other upper-level Pacific Islands Studies course, or instructor's (Same as GEOG 436). (GenEd/IntReq: H/A/P)

ENSC 441 Environmental Impact Assessment (3) Introduction to the theory and methods of environmental impact assessment (EIA). Emphasis on the biophysical, cultural, social, economic and legal foundations of the federal and state EIA process as well as strategies to mitigate the negative environmental impacts of development. Students engage in critical evaluation and preparation of an EIA.

Pre: junior or senior standing or instructor's consent. (Same as GEOG 441).

ENSC 457 Vegetation of the Hawaiian Isl (3) This course explores the major types of vegetation in Hawai'i with respect to physical environments and important species. Basic concepts in taxonomy and identification are emphasized. Coursework includes field excursions at various sites around the island of Hawai'i to develop methods in surveying and monitoring vegetation. This course also examines major human impacts and conservation challenges.

Pre: BIOL 156 or BIOL 281. (Same as BIOL 457)

ENSC 495 Senior Seminar Environ Science (3) Capstone course for Environmental Studies/Science majors integrating previous coursework into disciplinary framework. Seminar focus on research, writing and discussion of themes in contemporary environmental problems. (Same as GEOG 495).

Pre: Senior standing ENSC or ENVV or GEOG major or instructor's consent.

ENSC x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

ENSC x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

Filipino (FIL)

College of Arts and Sciences

FIL 101 Elementary Filipino I (4) (lec., lab) This course involves an introduction to the Filipino language as a tool for communication in simple social situations. Emphases are on developing the four language skills: Speaking, Listening, Reading and Writing. However, the course will focus on Speaking and Listening skills as foundation in the beginner's program. The course will pay close attention to the sounds of the Filipino language, including intonation and stress, as well as vocabulary and simple grammatical structures. The course will present different social situations, which involves the turntaking skills, courtesies, and initiating and ending a communication exchange. (GenEd/IntReq: H/A/P)

FIL 102 Elementary Filipino II (4) This is a continuation of FIL 101. Emphases are on developing the four language skills: Speaking, Listening, Reading, and Writing. The course will focus on speaking and listening as foundational skills. The course will pay close attention to the sounds of the Filipino (Tagalog) language, including intonation and stress, as well as vocabulary and grammatical structures of the elementary level. The course will present different social situations, which involve turntaking skills, courtesies, and initiating and ending a communication exchange.

Pre: FIL 101. (GenEd/IntReq: H/A/P, HPP)

FIL 200 Inter Conversational Filipino (3) Students will be given an introduction to Tagalog, one of the most widely used and understood languages in the Philippines and overseas Filipino communities. Attention will be given to developing language skills in four areas: Speaking, Listening, Reading and Writing. However, this course will focus on speaking and listening skills to establish a foundation at an intermediate level. Students will learn how to apply the skills learned in common social situations through various hands-on activities. Reading material and other sources will be utilized to supplement course learning.

Pre or Coreq: FIL 102 or instructor's consent. (GenEd/IntReq: HPP)

FIL 330 Filipino Films (3) This is a survey course on Philippine cinema presented in in Filipino with English subtitles. In this course students will be taught how to watch and listen to films; then identify and analyze various issues within Philippine socio-political contexts. Through lectures, discussions, and various classroom activities, students will develop critical thinking skills necessary for investigating ethical issues in Philippine films. (GenEd/IntReq: H/A/P, GCC, HPP)

FIL 354 Filipino Culture (3) This course is an introduction to peoples and cultures of the Philippines. Topics include cultural origins, linguistic and cultural diversity, values, social structure and overseas Filipino adaptation. This course is cross-listed with ANTH 354. (GenEd/IntReq: GCC, HPP)

FIL x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

FIL x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

Finance (FIN)

College of Business and Economics

FIN 220 Personal Finance (3) A managerial concept is applied to personal financial affairs; traditional life-cycle approach is structured in terms of a personal balance sheet model; begins with various tools and techniques of planning and ends with the ultimate disposition of the estate; brief case problems are used for illustration. *Pre:* sophomore standing.

FIN 320 Prin Bus Finance (3) Introduction to concepts and techniques of business finance. Topics include organizational forms, agency relationships, financial analysis and planning, the capital formation process and capital markets, risk and return, time value of money, stock and bond valuation, and capital budgeting.

Pre: Admission to Professional Business Program, C or better in ACC 201, C or better in MATH 104F, 115, 205 or higher.

FIN 321 Invest & Secur Analysis (3) Fundamentals of the securities market; development of skills needed to analyze current portfolios and potential investments. Topics include risk reduction, investment analysis, security valuation, portfolio management and option/futures speculation.

Pre: Admission to Professional Business Program, FIN 320 and junior standing.

FIN 322 Corporate Finance (3) Development of tools to help managers analyze and solve financial problems. Topics include capital budgeting, capital structure, dividend policy, lease financing, short and long term asset and liability management, options and futures contracts, merger/take-over analysis and bankruptcy analysis.

Pre: Admission to Professional Business Program, FIN 320, ACC 251

FIN 325 Small Bus Finance (3) Application of financial principles to small business firms. Topics include planning, valuation, investment decision making (fixed and working capital investments) and procurement of funds.

Pre: Admission to Professional Business Program, FIN 320 and junior standing.

FIN 370 Prin Real Estate (3) Real estate principles including legal, physical, and economic elements, as well as concepts of valuation, market analysis, and finance. Examined are public and private externalities affecting the allocation and utilization of real estate resources.

Pre: Admission to Professional Business Program, FIN 320 and junior standing.

FIN 412 Options & Other Derivatives (3) Detailed coverage of derivative securities including options, swaps, forwards and futures. Pricing, arbitrage relationships, use and trading strategies of derivatives are discussed. Contemporary issues in financial engineering. Special emphasis is placed on the use of derivatives by smaller businesses. *Pre:* Admission to Professional Business Program and FIN 320.

FIN x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

FIN x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

Food Science and Technology (FDSC)

College of Agriculture, Forestry, and Natural Resource Management

FDSC 201 Man's Food (3) (lec., lab) History and current food supply; man's role in production, preservation, processing, and consumption of food.

Pre: one semester general chemistry or instructor's consent.

FDSC x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

FDSC x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

Forestry (FOR)

College of Agriculture, Forestry, and Natural Resource Management

FOR 202 Forestry & Natural Resources (3) (lec., lab) Development of forestry and agroforestry, forest biology, soils, ecology, conservation, management, and products. Field trips to various forestry operations.

FOR 340 Remote Sensing GIS in Forestry (3) Application of remote sensing and GIS in forestry. Spatial data structures, map projection, global positioning system. How to create spatial data sets through GPS survey. Utilization of GIS software and performance of basic spatial analyses.

FOR 350 Tropical Silviculture (3) (lec., lab) Sustainable methods and techniques for manipulation of tropical forest ecosystems to meet management objective; artificial and natural regeneration; site preparation and harvest methods; soil and water resources management; silviculture and the gene pool; intermediate stand tending and maintenance of forest health.

FOR 360 Urban Forestry (3) Conservation, management and restoration of trees, forests and related natural resources are core topics including the evolution of today's public and private urban forestry programs. Primary focus is urban forestry from ecological, economic, socio-cultural and economic perspectives. Changing demographics of urban areas, urban development and sprawl, resultant impacts and the political landscape are also topics. Sustaining urban forest systems through understanding or organization, structure, function and processes in a stressed environment are emphasized.

FOR 440 Forest Ecosyst Restoration/Mgt (3) (lec., lab) The course gives the students an introduction to basic knowledge on the interdependent disciplines, restoration ecology and ecological restoration, with specific emphasis on forests. Planning and restoration strategies for natural systems in the tropical regions; assessing the condition and threats to native and planted forests and developing plans for their management; introducing tools used by restoration ecologists to solve practical problems; discussing scope and success of actual restoration projects.

FOR x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

FOR x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. Pre: instructor's consent.

French (FR)

College of Arts and Sciences, Languages

FR 101 Elementary French I (4) Conversation, laboratory drill, grammar, reading, using film strips, interactive software, slides and tapes.

FR 102 Elementary French II (4) Conversation, laboratory drill, grammar, reading, using film strips, interactive software, slides and tapes. Pre: FR 101 or equivalent.

FR 201 Intermediate French I (4) Reading, conversation, laboratory drill, composition, using film strips, interactive software, slides and tapes. Pre: FR 102 or equivalent.

FR 202 Intermediate French II (4) Reading, conversation, laboratory drill, composition, using film strips, interactive software, slides and tapes. Pre: FR 201 or equivalent.

FR 312 Adv Conver & Composition (3) Major emphasis on strengthening oral and written language skills through reading and discussion of current French-language periodicals, writing informal essays, grammar review, and laboratory drills. Video tapes, movies, interactive software, and film strips also will be used. Pre: FR 311 or equivalent.

FR x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

FR x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. Pre: instructor's consent.

Geography (GEOG)

College of Arts and Sciences

Field trips are sometimes conducted outside of class hours.

GEOG 101 Geog & Nat Environ (3) Survey of the earth's physical environment, including distribution and associations between energy, climate, vegetation, and landforms. Human interrelationships with the physical landscape.

GEOG 102 World Regional Geography (3) Geographic survey of the world's major cultural regions. Processes of spatial integration and differentiation of economic, geo-political, and cultural landscapes. Natural resource distribution and the contrasts and linkages between the developed and under-developed world.

GEOG 103 Geog And Contemp Soc (3) Examines aspects of culture such as population, agriculture, industry, and religion. Focus on the relationships between people and their environment and resulting regional contrasts.

GEOG 105 Geography Of United States (3) Major features of the United States. Emphasis on what gives character or distinctiveness to various places.

GEOG 107 Hawaii in the Pacific (3) Introduction to the geographies of Hawai'i and the Pacific Islands region, emphasizing indigenous world views. Through lecture, discussion, and web based learning, the course focuses on the historical and contemporary links between Hawai'i and Oceania and provides a context for understanding the people, cultures, and environments of the region. (GenEd/IntReq: H/A/P, HPP)

GEOG 120 Weather & Climate Hawaii (3) For non-science majors and prospective science teachers. Basic meteorology, sun-earth-ocean-atmosphere interrelationships, weather types, seasonal changes, trade winds, clouds, rainfall, with examples drawn from the local weather and climate. (Same as PHYS 120). (GenEd/IntReq: H/A/P, GCC, HPP)

GEOG 201 Interp Geog Data (3) Introduction to methods of analysis and display of a variety of geographical data. Introduction to geographical methods, basic computer programs, concepts of computer cartography, map interpretation and design, and more advanced techniques including GIS, GPS, and remote sensing.

GEOG 280 Introduction to Geostatistics (3) Application of statistical and mathematical models in a geographic context. The use of multivariate techniques in assessing spatial relationships. This course will cover basic theory, methods, and techniques for the statistical analysis of spatial data. Students will learn an employ elementary techniques for describing, modeling, and analyzing spatial data using Excel, ArcGIS, and/or MATLAB.

Pre: GEOG 102 or GEOG 103 or GEOG 101 or ENSC 100.

GEOG 295 Pacific: Brown Bag Seminar Ser (1) Weekly one hour seminars will cover a broad range of topics, current research and topical issues that are of relevance to contemporary ways of life in the Pacific. Seminars will also explore the application of Pacific Studies to the workforce. Credit is gained by weekly attendance and the submission of short summaries of the weekly seminars. (Same as ANTH 295).

GEOG 300 Climatology (3) Elements and controls of climate. Dynamic processes of atmospheric circulation: the distribution patterns of solar radiation, temperature, precipitation, and evaporation. Energy and water balance concepts, climate classification. Pre: GEOG 101 or instructor's consent.

GEOG 309 Biogeography (3) Basic evolutionary and ecological principles underlying the dynamics of plant and animal population. Mechanisms of isolation, speciation, dispersal, migration, and competition as they affect past and present world distribution patterns. Island biogeography. (Same as BIOL 309). (GenEd/IntReq: H/A/P) Pre: GEOG 101; BIOL 101 or 175 or 176; or instructor's consent.

GEOG 312 Food and Societies (3) Different types of food production and consumption systems, and the cultural and environmental constraints operating to produce the resultant patterns. Globalization of agricultural production and consumption. Pre: one introductory geography course. (Same as AG 312) (GenEd/IntReq: GCC)

GEOG 319 Nat Hazards/Disasters (3) Survey of origins, processes, distributions, and effects of hazardous physical forces: hurricanes, tornadoes, drought, floods, earthquakes, volcanism, landslides, erosion, and beach degradation. Hazard perception and adjustment by humans also considered. Pre: GEOG 101 or instructor's consent.

GEOG 320 Earth Surface Processes (3) Processes of landform development at large and small scales. Theoretical and applied aspects, including human environment considerations. Field excursions may be required. Pre: GEOG 101 or GEOL 111 or equivalent. (Same as GEOL 342)

GEOG 321 Geog Of Economic Activity (3) Factors influencing the distribution of economic activities at different spatial scales: world, national, local. Consideration of general theories of decision making for urban and industrial locations. Pre: GEOG 103.

GEOG 325 Legal Geography (3) In this course, we will explore and examine a variety of places that upon first consideration, do not seem either legal or political. We will investigate a variety of types of places and spaces that carry legal and political weight in our everyday lives. Themes of consumption, expression, access, accommodation, culture, sex, race, living, national identity, community, discipline, and property will guide our inquiry into the relationship between law, politics, and spatial habitation. (Same as POLS 325). (GenEd/IntReq: GCC)

GEOG 326 Natural Resources (3) Philosophy and history of the conservation movement in the United States. Ecological considerations in the management of renewable and nonrenewable resources. Current conservation issues in Hawai'i. Pre: GEOG 101 or instructor's consent. (GenEd/IntReq: H/A/P)

GEOG 328 Cultural Geography (3) Key concepts in cultural geography and introduction to qualitative research methods in geography. Topics include: histories of cultural geography; landscapes; nature-society relations; critical cultural geographies. Pre: one introductory geography course.

GEOG 329 Development Geographies (3) Major theoretical approaches to economic development will be examined. The environmental and cultural sustainability of these approaches along with emerging alternative development (green) perspectives will be highlighted through specific case studies. Pre: any introductory course in geography, anthropology, economics, biology, or agriculture.

GEOG 331 Tourism Geographies (3) Survey of tourism geographies, addressing a wide-range of topics: tourism representations, tourism development strategies, indigenous tourism development, planning for “sustainable” tourism, and tourism’s environmental impacts.

Pre: junior or senior standing or instructor’s consent.

GEOG 332 Geog Of Hawaiian Islands (3) Introduction to the physical and human geography of Hawai‘i. Development of island ecosystems. Polynesian pre-history, post-contact resource exploitation and environmental transformation. History of land tenure and management. Spatial aspects of agriculture, urbanization, and tourism.

Pre: GEOG 101 or 103, or instructor’s consent. (GenEd/IntReq: H/A/P)

GEOG 335 Geog Of Oceania (3) Physical and human geography of the Pacific Islands region including Australia and New Zealand (excluding Hawai‘i). Topics include: regional marine and terrestrial resources; human settlement and landscape transformation; population political geography; economic development, and resource management and environmental issues. (GenEd/IntReq: H/A/P, HPP)

GEOG 340 Intro to Land Use Planning (3) Land use planning and relationship of geographic concepts to urban, regional, and environmental planning. Emphasis on examples from Hawai‘i.

Pre: Junior or senior standing.

GEOG 382 Qualitative Research (3) Introduction to the ethics, methodologies, and practice of research in human geography, particularly standpoint epistemologies and associated methodologies. Combines lectures, workshops, and assignments. Students will conduct and report upon their own research.

Pre: GEOG 103 or 102 or WS 151 or instructor’s consent. (Same as WS 382)

GEOG 385 Fld Meth in Geog & Environ Sci (3) Geographic field methods for assessment and monitoring of the physical/biological/anthropogenic environment. Instrumentation, data collection, and analysis; planning and land management applications.

Pre: GEOG 201 or instructor’s consent. (Same as ENSC 385). (GenEd/IntReq: H/A/P)

GEOG 387 Lit Of The Environment (3) A study of modern nature writing and environmental issues in several genres. Students will explore how humans negotiate their place in variety of physical environments.

Pre: ENG 100 and one of the following: ENG 200, 251, 252, 253, or 254 or instructor’s consent. (Same as ENG 387)

GEOG 409 Principles of Landscape Ecology (3) Introduction to landscape ecology as a framework for landscape research, analysis and management. Emphasis on spatial patterning - the causes, development, importance of ecological processes, and the spatial interactions of dynamic processes. Focus on concepts, methods and applications of landscape ecology through reading classic and contemporary literature.

Pre: GEOG 101 or GEOG 201 or GEOG 309 or BIOL 281 or instructor’s consent. Some familiarity with geographic information systems (GIS) and statistics desirable.

GEOG 430 Gender, Place and Environment (3) Survey of trends in geography of gender related to place, space and the environment. Addresses spatial interactions of gendered bodies of different ages, class and ethnicities. (Same as WS 430).

Pre: junior or senior standing or instructor’s consent. (GenEd/IntReq: GCC)

GEOG 435 Senior Seminar Pacific Studies (3) A reading and research seminar under the supervision of the Pacific Islands Studies faculty aimed at demonstrating competence in research and writing on issues related to Pacific Islands environments, culture, society and economy. (Same as ANTH 435 and HIST 415).

Pre: Instructor’s consent for students near completion of Pacific Islands Studies Certificate coursework. (GenEd/IntReq: H/A/P)

GEOG 436 Environ Politics in Pacific (3) This course will examine the ways that government policies, economic development and globalization affect the environment in the Pacific region as well as the ways that environmental problems affect political debates and actions. Utilizing the research approach or political ecology this course for advanced students will explore contemporary viewpoints on terrestrial resource management, preservation, population growth, land degradation, marine and terrestrial resource management, environmental contamination, and other environmental issues across Polynesia, Melanesia and Micronesia.

Pre: Junior or Senior standing and completion of one of the following: ENSC 100, GEOG 335, other upper-level Pacific Island Studies course, or instructor’s consent. (Same as ENSC 436). (GenEd/IntReq: H/A/P)

GEOG 440 Community Planning (3) An introduction to comprehensive planning in Hawai‘i with emphasis on the environmental, infrastructure, social, economic and other issues underlying good land use plans. Examples from General Plans and Community Development Plans.

Pre: GEOG 340 or instructor’s consent.

GEOG 441 Environmental Impact Assessment (3) Introduction to the theory and methods of environmental impact assessment (EIA). Emphasis on the physical environmental, cultural, social and legal foundations of the federal and state EIA process as well as how to minimize negative impacts on economic development. Students engage in critical evaluation and preparation of EIS.

Pre: junior or senior standing or instructor’s consent. (Same as ENSC 441).

GEOG 470 Remote Sensing/Air Photo (3) Analysis of film and digital images of the Earth’s surface collected from cameras and sensors aboard aircraft and satellites. Applications to resource planning, forestry, hydrology and geology.

Pre: GEOG 201 or instructor’s consent.

GEOG 480 Geog Info Sys & Visualization (3) (lec., lab) Introduction to basic concepts and skills for using Geographic Information Systems (GIS) to analyze and visualize geospatial data. Topics covered include: computer representation of geographic information, construction of GIS databases, geospatial analysis and applications. Additional focus on visualization skills including cartographic principles and techniques.

Pre: GEOG 201 or instructor’s consent.

GEOG 481 Advance Geo-Spatial Techniques (3) GEOG 481 is an advanced course in spatial analysis and modeling specific to Geospatial Information Science. This course will emphasize the application of Geospatial software tools along with the underlying theories and practices to analyze, model and visualize data. A focus on concepts and techniques utilized in GIS provides numerous opportunities for applied learning in terrain modeling, suitability modeling, predictive ecosystem mapping and data visualization. Further knowledge and skills will be developed by customization of GIS applications through interface. This course is dual listed with CBES 681.

GEOG 488 Advanced Geostatistics (3) This class is about understanding the uncertainty inherent in predictions made from spatial data. Probability theory, spatial analysis, variogram analysis, kriging, and stochastic simulations (conditional and unconditional). Our focus will be on the theory and application of geostatistical interpolation techniques to address real geographic and environmental problems using real data.

Pre: GEOG 280, GEOG 480

GEOG 490 Senior Thesis (3) Independent research on a significant topic related to the student’s area of interest under the supervision of one or more faculty members in Geography and Environmental Science/Studies.

Pre: Instructor’s consent.

GEOG 495 Senior Seminar in Geography (3) Capstone course for Geography, Environmental Studies and Environmental Science majors, integrating previous coursework into disciplinary framework. Seminar focuses on research, writing and discussion of themes in contemporary geography and environmental studies and science. Each student will choose a sub-field of interest and prepare two seminar papers: (1) survey of historical development of sub-field including theoretical and cutting edge issues; (2) identify and investigate an original research problem in the chosen sub-field.

Pre: Major in Geography, Environmental Studies or Environmental Science, junior or senior standing. Offered Spring semester only. (Same as ENSC 495).

GEOG 496 Planning Internship (3) Juniors and seniors majoring in geography may undertake in-service training in government or private agencies.

Pre: junior standing and instructor’s consent. (GenEd/IntReq: H/A/P)

GEOG x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

GEOG x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor’s consent.

Geology (GEOL)

College of Arts and Sciences

Field trips are sometimes conducted outside of class hours.

GEOL 100 Environmental Earth Science (3) Introduction to geology for non-science majors with an emphasis on the interaction between the Earth and its human population. The focus is on the solid Earth, natural hazards, natural resources, and pollution. Note: Geology students with an interest in environmental geology are encouraged to take GEOL 300. (GenEd/IntReq: GCC)

GEOL 100L Environmental Earth Sci Lab (1) (lab) Application of basic geological principles toward the understanding of man’s relationship with the environment. Laboratory experiences in hazards mapping and assessment, environmental pollution, global change, and management of our geological resources. Develops skills in interpreting maps and remote sensing images.

Pre: GEOL 100 or GEOL 300, which may be taken concurrently.

GEOL 111 Understanding the Earth (3) The study of the Earth, with emphasis placed on the materials, surface features, structures, various erosional and depositional processes, and the role of plate tectonics. Prepares students for further studies in geology.

GEOL 111L Understanding the Earth Lab (1) (lab) Investigation of geological processes using observational techniques. Covers plate tectonics, identification and classification of earth materials, analysis of geological hazards, evaluation of natural resources, and development of map interpretation skills. Field trips highlighting Hawaiian geology.

Pre: Concurrent or previous enrollment in either GEOL 100 or GEOL 111, or instructor’s consent.

GEOL 112 Hist of the Earth & Its Life (3) The evolution of the earth from the origin of the solar system to the present. Emphasis on plate tectonics, the history of life, and techniques used to reconstruct past events from geologic evidence.

Pre: GEOL 111 or consent.

GEOL 112L History of the Earth Lab (1) (lab) Includes topics on fossils and fossilization, measurement of geologic time, stratigraphy, biostratigraphy, geotectonics, paleoecology, sedimentology, and the interpretation of geologic maps. Recommended: GEOL 111L.

Pre: GEOL 112, which may be taken concurrently.

GEOL 170 Volcanoes and Earthquakes (3) Systematic study of volcanic eruptions and damaging earthquakes. Applications of the scientific method to understanding their underlying causes. Case studies illustrate how catastrophic eruptions and earthquakes impact climate, the environment and society.

GEOL 195 Introductory Field Experience (1) Pre- or post-semester field trip (1-2 weeks) to exceptional geologic localities. During the semester students will become familiar with the geologic formations, structure, and history of the area to be visited. *Pre:* prior course in geology. CR/NC grade. Repeatable for credit. Offered in Spring semester only, alternate years.

GEOL 205 Geology Of Hawaiian Islands (3) A survey of the geological phenomena particular to the Hawaiian Islands, including volcanism, rock and mineral occurrences, landform development, and water resources. (GenEd/IntReq: H/A/P, HPP)

GEOL 212 Earth Materials I: Minerals (4) (lec., lab) A systematic study of the common minerals involving crystallography, optical properties, crystal chemistry, and occurrence. Laboratory work stresses identification of minerals in hand specimen and using the petrographic microscope.

Pre: GEOL 111 and either CHEM 114 or 124, or instructor's consent.

GEOL 300 Adv Environmental Earth Sci (3) In-depth study of the interactions between the human population and our planet. Natural resources, pollution and natural hazards, current issues such as the food supply and the energy crisis. Community concerns such as waste, natural hazards and environmental legislation.

Pre: upper division standing and GEOL 100 or GEOL 111 or GEOL 170 or GEOG 101 or ENSC 100 or MARE 201. (GenEd/IntReq: GCC)

GEOL 320 Erth Mat II: Igneous/Meta Rock (4) (lec., lab) An introduction to the study of rocks, including their origin, occurrence, composition and classification. Laboratory work involves the identification of rocks in hand specimen and thin section by means of composition and texture. Emphasis on igneous and metamorphic rocks.

Pre: GEOL 212 or instructor's consent.

GEOL 330 Deformation of the Earth (4) (lec., lab) Effects and mechanics of deformation of the earth's crust, involving the description, classification, and origin of geologic structures. Aspects of geotectonics are considered.

Pre: GEOL 112 and prerequisites listed for MATH 205, or instructor's consent.

GEOL 340 Sedimentary Processes (4) (lec., lab) Emphasis on sedimentary processes, properties of sediments and sedimentary rocks, environmental interpretation, and stratigraphic principles and nomenclature. Required field trips.

Pre: GEOL 112

GEOL 342 Earth Surface Processes (3) Processes of landform development at large and small scales. Theoretical and applied aspects including human environment considerations.

Pre: GEOG 101 or GEOL 111 or equivalent. (Same as GEOG 320)

GEOL 344 Coastal Geology (3) Systematic study of coastal processes and the structure and morphology of the world's coastlines. Topics include tectonic, oceanographic, biologic and anthropogenic influences, hazards, and current issues. Required weekend field trips.

Pre: GEOL 111 or MARE 201 or GEOG 101 or instructor's consent.

GEOL 352 Comparative Planetology (3) Study of the geology and geophysics of Earth-like planets and satellites in the solar system, with emphasis on understanding terrestrial geology in a border, astronomical context. Study of the atmosphere of solar system planets and satellites, and also the formation and evolution of the solar system and extra solar planetary systems.

Pre: GEOL 111, ASTR 180. (Same as ASTR 352).

GEOL 360 Surface Water (3) Introduction to surface hydrology. Topics include streamflow hydraulics, flooding, soil moisture, evapotranspiration, and stream water quality. Introduction to measurement technique, quantitative descriptions of hydraulic phenomenon and practical applications.

Pre: GEOL 111 and competence in algebra or instructor's consent.

GEOL 370 Field Methods (3) (lec., lab) Familiarization with field instrumentation and techniques. The study of methods used to collect, graphically represent, and interpret geological field data. For the last third of the class, students choose between a post-semester geological mapping project in California, or a geologic mapping project in Hawai'i.

Pre: GEOL 330 or instructor's consent. (GenEd/IntReq: GCC)

GEOL 431 Geology Of North America (3) Survey of the structure, stratigraphy, and tectonic evolution of the North American continent from Precambrian to recent.

Pre: GEOL 112 or instructor's consent.

GEOL 432 Plate Tectonics (3) Theory and working principles of plate tectonics. Includes quantitative solutions of plate velocities and rotations on a sphere and reconstructions of past plate movements.

Pre: GEOL 111.

GEOL 445 GIS for Geology (3) (lec., lab) Introduction to the use of Geographical Information Systems for storing, displaying, and analyzing geospatial data. Theories, applications in earth and environmental sciences, databases, and data analysis.

Pre: GEOL 111 and upper division standing or instructor's consent. Basic computer skills are strongly recommended.

GEOL 450 Geological Remote Sensing (3) (lec., lab) Application of remote sensing to volcanic hazards, global change, and geologic mapping. Exploration of both satellite and airborne sensor imagery with laboratory exercises focused on modern remote sensing visualization tools and interpretation of optical, thermal and thematic data suites.

Pre: any lower division geology class.

GEOL 460 Groundwater (3) Introduction to groundwater hydrology. Topics include: aquifer properties, principles of groundwater flow, quantity and quality of groundwater resources, water chemistry, groundwater contamination and the role of groundwater in geologic processes. Quantitative focus.

Pre: GEOL 111, 111L, prior course in chemistry at the high school or college level, and MATH 115 or 205 or instructor's consent.

GEOL 470 Volcanology (3) (lec., lab) In-depth study of volcanic processes, products and phenomena, including the classification of volcanic eruptions, evaluation of volcanic hazards, and an introduction to eruption monitoring.

Pre: GEOL 320 or instructor's consent.

GEOL 471 Volcano Monitoring (3) Survey of deformation, seismological, geochemical, and field mapping methods of monitoring active volcanoes, and their use in forecasting eruptions. Emphasis on field applications.

Pre: Previous college credit in geology, mathematics, and other physical sciences, or consent of the instructor.

GEOL 472 Volcano Seismology & Geodesy (3) Investigation of seismotectonic processes of active volcanoes including sources of earthquakes, volcanic tremor, seismic tomography, and seismic methods for volcanic monitoring. Geodetic Investigations of volcanic processes including both earth and space-based methods, data analysis and modeling.

Pre: GEOL 111, 111L and MATH 115 or MATH 205 or instructor's consent. Field trips are sometimes conducted outside of class hours.

GEOL 485 Advanced Field Mapping (1) An elective course consisting of 10-14 days of intensive field mapping in selected regions of the United States. Students construct a finished geologic map, including a cross-section, explanation, and a summary of geologic history. Additional fees apply.

Pre: GEOL 330.

GEOL 495A Seminar (1) Seminar presentations of topics in the physical sciences by faculty, enrolled students and invited speakers. The first semester (495A) is taken CR/NC; in the second semester (495B), students are required to present a seminar for a letter grade.

Pre: senior standing or instructor's consent. (Same as ASTR 495A-495B, PHYS 495A-495B and MATH 495A-495B).

GEOL 495B Seminar (1) Seminar presentations of topics in the physical sciences by faculty, enrolled students and invited speakers. The first semester (495A) is taken CR/NC; in the second semester (495B), students are required to present a seminar for a letter grade.

Pre: senior standing or instructor's consent. (Same as ASTR 495A-495B, CHEM 495A-495B, PHYS 495A-495B and MATH 495A-495B).

GEOL x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

GEOL x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

Hawaiian Language (HAW)

Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language

HAW 100 Hawn Language in Action (1) A beginning immersion experience in Hawaiian focusing on the spoken use of the language. (A) usage referring to locations and relationships, (E) usage referring to processes and actors, (I) other. May be repeated for credit if subletters are different. Meets two times weekly. No prerequisites. (GenEd/IntReq: H/A/P)

HAW 101 Elementary Hawaiian I (4) Development of listening, speaking, reading and writing and analytical skills at the elementary level of auxiliary language. Taught within the context of the contemporary culture of the Hawaiian people. (GenEd/IntReq: H/A/P)

HAW 102 Elem Hawaiian II (4) Continuation of HAW 101.

Pre: HAW 101 or placement exam. (GenEd/IntReq: H/A/P)

HAW 201 Intermediate Hawaiian I (4) Continuation of HAW 102 or 105. A second year study of Hawaiian as an auxiliary language.

Pre: HAW 102 or HAW 105 or placement exam. (GenEd/IntReq: H/A/P)

HAW 202 Inter Hawaiian II (4) Continuation of HAW 201.

Pre: HAW 201 or equivalent. (GenEd/IntReq: H/A/P)

HAW 453 Hawn Phonetics & Phonol (3) Sound system of the Hawaiian language. Stylistic and regional variation. Interaction of the Hawaiian sound system with the sound system of other languages, especially that of English. Conducted in Hawaiian.

Pre: HAW 202 or equivalent, which, with permission, may be taken concurrently, or equivalent. Recommended: LING 102, LING 111, LING 311. (Same as LING 453).

(GenEd/IntReq: H/A/P, GCC, HPP)

HAW 454 HawN Morphology & Syntax (3) Grammatical system of the Hawaiian language. Conducted in Hawaiian.

Pre: HAW 202 or equivalent, which, with permission, may be taken concurrently or equivalent. Recommended: LING 102. (Same as LING 454). (GenEd/IntReq: H/A/P)

HAW 455 Hawaiian:Polynesian Lang (3) The similarities and differences among Polynesian languages and the reconstruction of their common ancestor language. The development of Hawaiian from that common ancestor. Conducted in Hawaiian.

Pre: HAW 303, or concurrent, HAW 453. Recommended: HAW 454, LING 371, LING 102. (Same as LING 455). (GenEd/IntReq: H/A/P)

HAW x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

HAW x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

History (HIST)

College of Arts and Sciences

HIST 151 World History: To 1500 (3) History of the world from prehistoric origins to HIST 151 World History: To 1500 (3) A global and historical survey focusing on human societies and cross-cultural interactions to 1500 C.E.

HIST 152 World History: From 1500 (3) A global and historical survey focusing on human societies and cross-cultural interactions since 1500 C.E.

HIST 284 History of Hawaii (3) A survey course in the history of the Hawaiian Islands from Polynesian origins to contemporary multi-cultural society. Traces the impact of major events and historical figures upon Hawaiian society and also considers the Hawaiian response to these changes.

HIST 301 Professional Practice (3) Examination of academic careers, internships, and professional opportunities for History majors and minors. Topics covered include: building a CV, professionalism, ethics, internships, job market/interview process, and graduate school.

Pre: sophomore standing or instructor's consent.

HIST 300 Historical Methods (3) Methods of conducting historical research, including library, Internet, and archival research, in addition to an introduction to issues of professional historiography. Students will complete a wide variety of exercises designed to prepare them for historical work of the major.

Pre: sophomore standing or instructor's consent.

HIST 309 History of Asian Religions (3) The historical development of Asian religious traditions from their origins to the present, with an emphasis on the major traditions of India, China, and Japan. (GenEd/IntReq: H/A/P)

HIST 310 Hist of Japan I: Early Japan (3) Japanese history and culture from prehistory to the mid-seventeenth century. Topics include: origins of Japanese people and culture; the Imperial state; contacts with China and Korea; aristocratic culture, particularly the role of women; the samurai class and the Shogunates; Buddhism and Shinto; late medieval disorder and development; unification and pacification.

Pre: sophomore standing or instructor's consent. (Same as JPST 310).

(GenEd/IntReq: H/A/P)

HIST 311 Hist Japan II: Tokugawa to Meiji (3) Japanese history and culture from the seventeenth through nineteenth centuries. Topics include: samurai and the class system, political change, economic growth and social tensions; urban and rural evolution; popular culture and literature; Japan's isolation and reopening; collapse of the Tokugawa system; the Meiji Restoration; dissolution of the samurai class; social reorganization and rapid modernization; the Meiji Constitution and new Imperial state.

Pre: sophomore standing or instructor's consent. (Same as JPST 311).

(GenEd/IntReq: H/A/P)

HIST 312 Hist of China I: Early China (3) Chinese history and culture from prehistory through the Ming dynasty. Topics include: Chinese philosophy, culture, religion and literature; the Imperial State; family institutions; China's relationship with border societies; dynastic cycles and creative disorder; technology and economic change; education and the state examination system; Mongol invasion and empire; China's role in world trade.

Pre: sophomore standing or instructor's consent. (GenEd/IntReq: H/A/P)

HIST 313 History Of China II: Qing (3) Chinese history and culture from the seventeenth century through the fall of the Qing in 1912. Topics include: fall of the Ming and establishment of the Qing Dynasty; Manchu-Han relations; economic growth and world trade; opium; international relations; reformers, reform movements and uprisings; adapting Western ideas and technology; collapse of the Qing.

Pre: sophomore standing or instructor's consent. (GenEd/IntReq: H/A/P)

HIST 314 Hist of Jpn III: 20th Cent-Pre (3) Japanese history and culture from 1890 to present. Topics include: Meiji and 1947 constitutions; democracy and leadership; militarism and pacifism; evolving Imperial institution; economic growth and social change; tradition and modernity in Japanese culture; Japan's place in world systems and world culture. (Same as JPST 314). (GenEd/IntReq: H/A/P, HPP)

HIST 316 Pacific History I: To 1900 (3) Melanesia, Micronesia and Polynesia from pre-contact to 1900: Euro-American exploration, culture contact and colonial annexation. *Pre:* sophomore standing or instructor's consent. (GenEd/IntReq: H/A/P, HPP)

HIST 317 Pacific History II: From 1900 (3) Continuation of HIST 316. Melanesia, Micronesia and Polynesia from 1900 to the present: colonial exploitation, decolonization, independence and the search for identity in the contemporary world. *Pre:* sophomore standing or instructor's consent. (GenEd/IntReq: H/A/P, HPP)

HIST 318 Hist China III: 20th Cent-Pres (3) Chinese history and culture from 1900 to present. Topics include: Fall of the Qing dynasty; Republic of China; warlordism; imperialism and Chinese resistance; Civil War, Communist reunification of the mainland; People's Republic under Mao Zedong; post-Mao Chinese economic reforms and leadership; Nationalist Taiwan's economic growth and slow democratization; international relations including overseas Chinese.

Pre: sophomore standing or instructor's consent. (GenEd/IntReq: H/A/P, HPP)

HIST 319 European Women's History (3) Study of European women from pre-history to the twentieth century with emphasis on women's social and cultural roles in western history. Current feminist theory is also studied. *Pre:* sophomore standing or instructor's consent. (Same as WS 319)

HIST 321 Hist of Australia & N Zealand (3) Both Australia and New Zealand are part of the broader Pacific region, had colonies in the Pacific and continue to have significant influence in the islands. This course examines the origin and nature of their indigenous populations, the evolving nature of their settler communities with Great Britain in the nineteenth century and their development as independent nations in the twentieth century. Offered in Spring Semester only.

Pre: sophomore standing or instructor's consent. (GenEd/IntReq: H/A/P)

HIST 322 The Bible and History (3) Selected books of the Old and New Testaments with reference to their historical and cultural background.

Pre: sophomore standing or instructor's consent.

HIST 323 Ancient Greece (3) Political, social, and cultural history of ancient Greece from the Minoan to Hellenistic periods.

HIST 324 Militarization in the Pacific (3) This course examines the role of militarization in the Pacific Islands and the Pacific Rim from the late 18th century to present day. Diligent attention will be paid to WWII in the Pacific, but the course will also consider social, political, and military history in Oceania as an extension of colonialism, as well as the subsequent reactions to that militarization.

Pre: sophomore standing or instructor's consent. (GenEd/IntReq: H/A/P)

HIST 327 Environmental History--Pacific (3) This course in Pacific Islands history analyzes how changes in the environment affected the daily lives of the people of/ in Oceania, and how the actions of the people of/in Oceania affected environmental changes, with an emphasis on 19th and 20th century history.

Pre: sophomore standing or instructor's consent.

HIST 332 Hawaiian Kingdom (3) History of Hawai'i from early migrations and settlement to the 1890's with emphasis on political and social history; formation of the Kingdom of Hawai'i, changes in land tenure, disease and depopulation issues, the 1893 overthrow of the monarchy, and annexation. (GenEd/IntReq: H/A/P)

HIST 333 Twentieth Century Hawaii (3) History of Hawai'i since the overthrow of the monarchy in 1893, covering the Republic of Hawai'i and the period under United States control - immigration, World War II, the labor movement and the red scare, Hawaiian renaissance and the sovereignty movement.

Pre: sophomore standing or instructor's consent. (GenEd/IntReq: H/A/P)

HIST 336 Disease & Medicine in Hawai'i (3) With a focus on the nineteenth century, this course considers the role of health, disease and medicine in Hawai'i from the pre-kingdom era to contemporary times by bringing together the approaches of history and medical anthropology, with the understanding of (bio)medicine. Perceptions of health, the body and medicine and the impact of epidemic diseases in Hawai'i's cultural, social and political history from both Native Hawaiian and Western perspectives are examined. (GenEd/IntReq: H/A/P)

HIST 340 History of Religion in America (3) A historical and thematic study of the growth of religion in America from the seventeenth century to the present.

Pre: sophomore standing or instructor's consent.

HIST 341 Ancient Rome (3) Political, cultural, and social history of ancient Rome from the Etruscans to 476 C. E.

Pre: sophomore standing or instructor's consent.

HIST 352 History of Britain to 1776 (3) Political, social and cultural history of Britain from its origins in prehistory and Roman Britannia to the year 1776.

HIST 353 English History & Shakespeare (3) This course explores the relationship between the events of fourteen, fifteenth, and sixteenth century English history and Shakespeare's history plays.

Pre: sophomore standing or instructor's consent.

HIST 354 Intro to Islamic History (3) A history of the growth and development of Islam from the time of Muhammad to the present. Special attention is given to the relationship of Islam to the history and religious traditions of Europe.

Pre: sophomore standing or instructor's consent.

HIST 356 Medieval Europe (3) A survey of the social, intellectual, cultural, and political development of Europe from the fall of the Roman Empire to the late seventeenth century. Topics covered include feudalism, religion, the crusades, trade, epidemic disease, warfare, the Renaissance, Reformation, and the Scientific Revolution.
Pre: sophomore standing or instructor's consent.

HIST 357 Renaissance & Reformation (3) Political, social, intellectual, religious, and artistic development of the Renaissance and the Protestant and Catholic Reformations.
Pre: sophomore standing or instructor's consent.

HIST 358 Women in Christianity (3) Examines issues relating to sex and gender throughout the history of Christianity. Emphasizing primary texts, the course will explore writings by Christian women and Christian writings about women.
Pre: sophomore standing or instructor's consent. (Same as WS 358)

HIST 359 Christianity & Western Traditn (3) An introduction to the history and spirituality of Christianity and its relationship to "The Western Tradition" from its origins to the present.
Pre: sophomore standing or instructor's consent.

HIST 360 American Women's History (3) Study of American women from the seventeenth to the twentieth centuries. Special emphasis will be on women's social and cultural roles. Current feminist theory is also studied.
Pre: sophomore standing or instructor's consent. (Same as WS 360)

HIST 365 War & Empire in 18th Cent Eur (3) A survey of the social, intellectual, cultural, and political development of Europe from the War of the Spanish Succession to the advent of the Napoleonic era. Topics covered include absolutism, Enlightenment, mercantilism, military conflict, and revolution.
Pre: Sophomore standing or instructor's consent.

HIST 375 Europe in The 19th Century (3) A survey of the social, intellectual, cultural, and political development of Europe from the Napoleonic era to the outbreak of the First World War. Topics covered include industrialization nationalism, socialism, liberalism, imperialism, warfare, and revolution.
Pre: sophomore standing or instructor's consent.

HIST 378 N. Amer Indig Cultr Survival (3) This course will cover a broad swath of Native American history from the past few hundred years in the context of cultural survival and resistance. The course will begin with a short background in Native American history, but will be more specifically focused on various examples of resistance and incorporation. (Same as WS 378).

HIST 380 United States: 1620-1789 (3) The political, social, and intellectual history of North America from the time of European contact until 1789. Topics include: Native American settlement and polity; European settlement; colonial America; causes and course of the American revolution; development of republican government; constitutional convention; ratification of the federal Constitution.
Pre: sophomore standing or instructor's consent.

HIST 381 United States: 1790-1865 (3) The political, social, and intellectual history of the United States from the Early National Period through the Civil War. Topics include: Marshall Court, market revolution and early industrialization, immigration, Jacksonian democracy, social reform movements, sectionalism, Mexican War, Civil War, emancipation.
Pre: sophomore standing or instructor's consent.

HIST 382 United States: 1866-1929 (3) The political, social and intellectual history of the United States from Reconstruction through the Stock Market Crash of 1929. Topics include: key Supreme Court issues, Reconstruction, industrialization, immigration, racial tension, US imperialism, Progressivism, World War I, economic change.
Pre: sophomore standing or instructor's consent.

HIST 383 United States: 1930 - 1980 (3) The political, social and intellectual history of the United States from the Great Depression through the Carter Presidency. Topics include: FDR's New Deal, World War II, Civil Rights Movement, Cold War, Kennedy's New Frontier, US involvement in Vietnam, the Watergate Crisis.
Pre: sophomore standing or instructor's consent.

HIST 385 Europe in Era Of World War I (3) A survey of the social, intellectual, cultural, and political development of Europe from the late nineteenth century to the interwar period. Topics covered include nationalism, imperialism, art, trade, culture and warfare. Special emphasis on World War I and its effect upon modern European development.
Pre: sophomore standing or instructor's consent.

HIST 386 Pre 20th Century US History (3) An examination of pre 20th Century US history focusing on primary sources and the public spaces that interpret the evolving ideals of American styled freedom.
Pre: Instructor's consent only.

HIST 390 Public History in Hawai'i (3) Within the context of the history of Hawai'i, this course examines the role of the historian in representing the historical narrative to the general public. Through exposure to the scholarship, issues, and debates surrounding public history we explore this new and developing field. Along with field-trips to various sites on our island, this course also includes a significant service-learning component.
Pre: HIST 274 or instructor's consent. (GenEd/IntReq: H/A/P)

HIST 391 Internship (3) The internship is intended to allow students the opportunity to apply their knowledge and skills in public history in a public, private, or government agency/setting. May be taken for a total of six credits.
Pre: HIST 390, instructor's consent, and pre-approved placement.

HIST 392 Japanese Women (3) History of women in Japan from the earliest historical eras, including the Heian aristocracy and evolving samurai culture, through the present. Topics include: property rights, family structures, the influence of religion and secular philosophies, effects of political and legal changes, women's role in the economy and its effect on their status and lives, and women's activism. *Pre:* sophomore standing or instructor's consent. (Same as JPST 392 and WS 392). (GenEd/IntReq: H/A/P)

HIST 393 Hist Preservation & Archives (3) Introduction to and survey of historic preservation and archives. Topics covered include: preservation movement, legality, properties, sustainability, and planning. Additionally topics of archival theory, organization, and management will be covered.
Pre: HIST 390 or instructor's consent.

HIST 395 Europe in Era Of World War II (3) A survey of the social, intellectual, cultural and political development of Europe from the interwar period through the cold War. Topics covered include: the Depression, Fascism, Totalitarianism, the Holocaust, the Cold War, and decolonization. Special emphasis on World War II and its effect upon modern European development.
Pre: sophomore standing or instructor's consent

HIST 401 Women in Hawaiian History (3) This course examines the lives and contributions of women in the history of Hawai'i. It considers how events such as the arrival of foreigners, dismantling of the kapu system, the mahele, epidemics, political changes, world wars, etc., affected the social and cultural lives of women, men, children, and families. Course materials seek to understand how those gendered as "feminine" negotiated, accommodated, and resisted these changes over the last two centuries. (Same as WS 401). (GenEd/IntReq: H/A/P)

HIST 411 Family & Gender in Oceania (3) With a focus on the 19th and 20th centuries, this course examines how historical changes affected the social and cultural lives of women, men, children, and families in Oceania. Throughout the course we will endeavor to explore gendered reconstructions of particular events in the history of the Pacific: historiography, exploration, disease & depopulation, missionization, education, imperialism, colonization and de-colonization in general.
(Same as WS 411). (GenEd/IntReq: H/A/P)

HIST 415 Senior Seminar Pacific Studies (3) A reading and research seminar under the supervision of the Pacific Island Studies faculty aimed at demonstrating competence in research and writing on issues related to Pacific Island environments, culture, society, and economy.
Pre: instructor's consent for students near completion of Pacific Islands Studies Certificate coursework. (Same as ANTH 435 and GEOG 435)

HIST 420 Mao (3) An in-depth investigation into the life, career and legacy of Mao Zedong, China's dominant twentieth century figure. Competing political and historical interpretations will be examined using biography, primary sources in translation and secondary scholarship.
Pre: junior standing and previous coursework on Asian history or instructor's consent. Fall semester only. (GenEd/IntReq: H/A/P)

HIST 425 History Of Russia To 1700 (3) Development of Russian thought, institutions, society, and culture. Warfare, dynastic consolidation, and territorial expansion to 1700. *Pre:* one 300-level European survey course, or instructor's consent.

HIST 435 Russia Since Peter The Great (3) The development of Russian thought, society, government and institutions from 1700 to the Second World War. Special emphasis on Russian westernization and reform as they were encouraged or abandoned during the reigns of Russian leaders from Peter the Great through Stalin.
Pre: one 300-level European survey course or instructor's consent.

HIST 445 European Imperialism (3) The origins and development of European imperialism and its political, social, and environmental impact on the world. Special emphasis on the period from 1850 to the First World War.
Pre: one 300-level European survey course or instructor's consent.

HIST 455 Euro Intellect Hist Snce 1789 (3) Intellectual and cultural development of Europe since 1789. Ideas in the arts, philosophy, science, literature, and politics as they have affected Europe. *Pre:* one 300-level European survey course or instructor's consent.

HIST 459 Germany Snce Frederick The Grt (3) Development of Germany since 1740 in political, social, and economic fields. Special emphasis on the growth of the Prussian state, German unification, the two World Wars and the rise of totalitarianism.
Pre: one 300-level European survey course or instructor's consent.

HIST 470 US in the World 1865-2003 (3) U. S. expansion, imperialism, diplomacy and foreign relations from 1865.
Pre: one 300-level U. S. survey course or instructor's consent.

HIST 471 US Constitutional History (3) U. S. Constitutional History including discussions of constitutional development, state sovereignty, civil liberties, freedom of contract, affirmative action, and the modern presidency.
Pre: one 300-level U. S. history survey course or instructor's consent.

HIST 481 Land & Sovereignty in Pacific (3) Land is fundamental to traditional Pacific Island societies. Colonial rule meant a loss of both political sovereignty and, in many cases, significant amounts of land through private alienation and government acquisition. Using case studies, this course will investigate the historical relationship between land and sovereignty as Pacific people have sought to regain and maintain their independence. (GenEd/IntReq: H/A/P)

HIST 485 Seminar in World History (3) Investigation and discussion of major issues and events in world history. May be applied to any track, depending on area of research. Pre: one 300-level history course or instructor's consent.

HIST 486 Women in Ancient European Civi (3) Study of European women up to the year 800, with primary focus on the Mediterranean Basin. Themes encompass religion, social customs and economic activities. (Same as WS 486)
Pre: one of the following courses: HIST 319, 323, 341, 356, 360, or instructor's consent.

HIST 490 Historiography & Resrch Mthds (3) Course focuses on historiography and research methods in history, resulting in a research paper in the student's area of emphasis for the Senior Thesis. Required of all history majors.
Pre: senior standing and HIST 300, or instructor's consent.

HIST 491 Senior Thesis (3) Course focuses on the writing of a thesis paper on a topic in the student's area of emphasis. Required of history majors selecting the Thesis option. Recommended for students planning to enter graduate programs.
Pre: HIST 490.

HIST x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

HIST x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.
Pre: instructor's consent.

Honors (HON)

College of Arts and Sciences

HON 100 Opening Colloquium (3) An intensive course in reading, writing, and thinking about major issues with emphasis placed upon interdisciplinary approaches. Students introduced to a representative group of faculty. The colloquium uses a seminar format and will encourage the development of a community of scholars. Pre: Honors student or instructor's consent.

HON 495 Honors Research Symposium (1) This course is a research seminar. With the instructions and guidance provided by the faculty advisor each STEM Honor student will prepare a formal research proposal, write a manuscript on their study and findings, and report them in a 20-minute presentation at the Honors Research Symposium. The research reported can be part of the faculty advisor's research program or of the student's own proposing. The research can be original work of the author(s) or original applications of previous research done by others.
Pre: Senior standing and admission to Honors program.

HON x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

HON x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.
Pre: instructor's consent.

Horticulture (HORT)

College of Agriculture, Forestry, and Natural Resource Management

HORT 101 Intro Horticulture in Hawaii (2) Introduction to the cultural practices used in horticulture today with emphasis on growing plants in the Hawaiian environment. This course is intended for persons in the community or plant industry who have not had formal training in basic horticulture. Agriculture majors should take HORT 262.

HORT 262 Princ Of Hort (3) (lec., lab) Introduction to the various divisions of horticulture and the relationship of plants to environment; Plant structure and function with opportunities for observation and practice of various horticultural technologies. Students are required to participate in a garden project. (GenEd/IntReq: GCC)

HORT 263 Hydroponics (3) (lec., lab) Introduction to circulating and non-circulating hydroponic methods. Students are required to participate in the construction and maintenance of a hydroponic system.
Pre: HORT 262.

HORT 264 Plant Propagation (3) (lec., lab) Seminal propagation; vegetative propagation by cuttings, grafting, budding, layering, division and separation. Propagating systems and plant tissue culture. Recommended: HORT 262

HORT 266 Nursery Management (4) Horticulture and management practices involved in the operation of wholesale nurseries in Hawai'i with emphasis on production of tropical foliage plants. Practical laboratories will include propagation, soil media, structures, irrigation, nutrition, environmental control, post-harvest handling, and marketing. Excursions to various nurseries.
Pre: HORT 262 or instructor's consent.

HORT 303 Intro Plant Tissue Culture (3) (lec., lab) Introduction to the basic concepts and principles of tissue culturing plants. Special emphasis will be placed on setting up a laboratory and other business concerns. Limited enrollment.

Pre: HORT 262 or instructor's consent. Recommended: HORT 264.

HORT 304 Plant Tissue Culture Acclimatiz (3) (lec., lab) Discussion and application of methods employed to acclimate locally tissue cultured plants. Limited enrollment.
Pre: HORT 262. Recommended: HORT 303.

HORT 350 Trop Landscape Horticulture (3) (lec., lab) Identification of landscape plants; design, construction, installation, care and maintenance of landscapes. Limited enrollment.
Pre: HORT 262 or BIOL 175.

HORT 351 Veg Crop Production (3) (lec., lab) Vegetable cultural methods, postharvest handling method and marketing. Special emphasis will be placed on rowing crops for market sales. Pre: HORT 262 or instructor's consent.

HORT 352 Trop Fruit Production (3) (lec., lab) History, botanical relationships, climatic relationships, culture, management, and marketing. Excursions to various fruit orchards.
Pre: HORT 262 or instructor's consent.

HORT 354 Floriculture (4) (lec., lab) Cultural and management practices in production of cut flowers and flowering pot plants. Major Hawaiian and mainland flower crops are considered. Visits to anthurium and other enterprises.
Pre: HORT 262 or instructor's consent.

HORT 360 Orchidology (4) (lec., lab) Systematics, anatomy, physiology, and breeding of orchids with emphasis on production of orchid plants and flowers. Practical laboratories will include culture from pollination to marketing and field trips to local orchid nurseries.

HORT 437 Structure Of Trop Plants (4) (lec., lab) Plant structure in relation to cultural practices, functions, genetic factors and development.
Pre: BIOL 175. (Same as BIOL 417)

HORT 450 Adv Plant Tissue Cult (3) (lec., lab) Provides the student with hands-on experience in plant tissue culture techniques. Evaluative and diagnostic skills will be emphasized. Students will design and test techniques most appropriate for tissue culturing plant(s) of interest. Limited enrollment. Repeatable for a maximum of six credit hours.
Pre: HORT 303.

HORT 451 Plant Improvement (3) (lec., lab) Application of plant breeding techniques and methods of improving crops with special emphasis on Hawaiian plants.

HORT 471 Post Harvest Handling (3) (lec., lab) Methods of handling, storing, and shipping of fresh horticultural commodities with emphasis on Hawaiian fruits, vegetables, and ornamental plants.
Pre: CHEM 114 or CHEM 124 or equivalent, and HORT 262.

HORT 481 Weed Science (3) (lec., lab) Classification, identification, and adaptation of weeds. Principles of weed control, including properties, use, and action of herbicides.
Pre: HORT 262 or BIOL 175 and one year of chemistry.

HORT x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

HORT x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.
Pre: instructor's consent.

Hawaiian Studies (HWST)

Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language

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 the larger Pacific with regards to origins, language, religion, land, art, history and modern issues.

HWST 111 Hawaiian 'Ohana (3) The culture of the Hawaiian people as expressed in the home and family. The position of the family as the basis of the larger Hawaiian society and culture. Both ancient and modern aspects covered; extensive use of Hawaiian terminology. (GenEd/IntReq: H/A/P, HPP)

HWST 175 Intro Music Of Polynesia (3) A general survey of the indigenous and acculturated music of eight major Polynesian island groups: Tonga, Samoa, New Zealand, Cook Islands, Society Islands, Marquesas Islands, Easter Island and Hawai'i. Music is viewed as both an organization of sound and as a product of culture and people. (Same as MUS 175). (GenEd/IntReq: H/A/P, HPP)

HWST 176 Hist & Dev Of Hawn Music (3) A general survey of the interrelationships of indigenous and acculturated Hawaiian music. Vocal music genres to be discussed include: chant; Christian hymn singing; secular choral singing; male and female falsetto singing; Chalangalang; Hapa Haole; and contemporary. Instrumental music genres include: Pre-European instrumental styles; slack key guitar; 'ukulele; and steel guitar. (Same as MUS 176). (GenEd/IntReq: H/A/P, HPP)

HWST 205 Hawaiian Music in Action (2) Learning Hawaiian songs as a means of strengthening knowledge of language, poetry and culture. A) mele 'aina, E) mele pili kanaka, I) other. May be repeated for credit if subletters are different.

Conducted in Hawaiian.

Pre: HAW 101 or 107. (GenEd/IntReq: H/A/P)

HWST 211 Hawaiian Ethnobotany (3) Hawaiian herbs and plants: their identification, their place in the heritage of the Hawaiian people, their medicinal properties, and other practical uses; extensive use of Hawaiian terminology. (GenEd/IntReq: H/A/P, HPP)

HWST 213 Hawaiian Ethnozoology (3) Hawaiian fishes, birds, and other creatures: their identification, their place in the heritage of the Hawaiian people, methods of capture, their practical uses; extensive use of Hawaiian terminology. (GenEd/IntReq: H/A/P, HPP)

HWST 461 Pana Hawai'i (3) Traditions and literature of Pana (names sites of cultural importance). Emphasis on islands of (A) Hawai'i, (E) Maui, (I) Moloka'i and Lana'i, (O) O'ahu, (U) Kaua'i and Ni'ihau, conducted in Hawaiian.

Pre: HWST 111, HAW 202, or equivalent, which, with permission, may be taken concurrently. May be repeated for credit if subletters are different. (GenEd/IntReq: H/A/P)

HWST 463 Intro Hawn Narrative Lit (3) Introduction to Hawaiian narrative literature both oral and written. Short traditional tales, excerpts from longer forms, comparison of narrative literature with poetry and conversation event recordings.

Pre: HAW 304, which, with permission, may be taken concurrently.

Recommended: HAW 452. (GenEd/IntReq: H/A/P)

HWST 464 Hawaiian Composition (3) Essays and articles in Hawaiian focusing on traditional Hawaiian aesthetics and well-formed presentation. Attention to cultural differences in presentation of material.

Pre: HAW 404, which, with permission may be taken concurrently; HAW 453 and ENG 315. (GenEd/IntReq: H/A/P)

HWST 471 Mele 'Auana (3) Hawaiian musical traditions initiated since 1778 (e.g., falsetto, slack key, himeni, etc.). Traditions concerning their sources and history. Some attention given to performance. Conducted in Hawaiian.

Pre: HAW 202 or equivalent, which, with permission, may be taken concurrently; HWST 361, HWST 462. (GenEd/IntReq: H/A/P)

HWST 472 Hula 'Auana (3) Hawaiian dance forms initiated since 1778. Traditions concerning their sources and history. Some attention given to performance. Conducted in Hawaiian.

Pre: HAW 202 or equivalent, which, with permission, may be taken concurrently. Recommended: HWST 361, 462, 471. (GenEd/IntReq: H/A/P)

HWST 473 Oli/Mele Kahiko (3) Hawaiian musical forms initiated previous to 1778 (e.g. chanted lamentations, chanted greetings, dance chants, etc.). Traditions concerning their sources and history. Some attention given to performance.

Pre: HAW 202 or equivalent, which, with permission, may be taken concurrently. Recommended: HWST 361, 462, 471. Conducted in Hawaiian. (GenEd/IntReq: H/A/P)

HWST 474 Hula Kahiko (3) Hawaiian dance forms within the traditional halau hula. Traditions concerning their sources and history. Some attention given to performance. Conducted in Hawaiian.

Pre: HAW 304 or equivalent, which, with permission, may be taken concurrently. Recommended: HWST 361, 462, 471, 473 recommended. (GenEd/IntReq: H/A/P, GCC, HPP)

HWST 496 Hawaiian Studies Seminar (3) Readings, research and field work on the traditional and contemporary Hawaiian community. Conducted in Hawaiian.

Pre: HAW 303 and senior standing, or instructor's consent. (GenEd/IntReq: H/A/P, GCC, HPP)

HWST x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

HWST x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. Pre: instructor's consent.

Interdisciplinary Studies (IS)

College of Arts and Sciences

IS 201 Pre-Pharmacy Orientation (2) This course is a requisite for the Pre-Pharmacy Program at UH Hilo. It will familiarize the student with the academic requirements of the Pre-Pharmacy Program and the Doctorate of Pharmacy degree. Individual lectures will cover the clinical, technical and ethical responsibilities of a Pharmacist in the 21st century, and allow students to become familiar with job opportunities for pharmacists. This course will provide interactions with local pharmacists and doctoral pharmacy students through mentor partnerships. Offered on a CR/NC basis only.

IS 393 Foreign Field Experience (1-15) Academic coursework, research, or internship in foreign locations which may transfer into specific disciplines after completion. (D) Denmark, (E) England, (F) France, (H) Hong Kong, (J) Japan, (K) Korea, (P) People's Republic of China, (R) Republic of China (Taiwan), (T) Thailand. Foreign field experiences are not limited to the countries listed. May be repeated for credit.

IS x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

IS x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. Pre: instructor's consent.

Japanese (JPNS)

College of Arts and Sciences, Languages

JPNS 101 Elementary Japanese I (4) (lec., lab) Development of listening, speaking, reading, writing. Structural points introduced inductively. Laboratory drill. (Same as JPST 101). (GenEd/IntReq: H/A/P)

JPNS 101S Elementary Japanese I, Special (3) Specially designed for students with some language background of Japanese. Same material as JPNS 101 more quickly covered. Development of four skills - speaking, listening, reading and writing - and an adequate entry-level knowledge of Japanese. A variety of classroom activities such as dialogue role-play, presentations, grammar exercises and individualized laboratory work. After reviewing Hiragana and Katakana, the course focuses on strengthening the skill of reading and writing Kanji characters at the beginning level.

Pre: Department Approval. (Same as JPST 101S). (GenEd/IntReq: H/A/P)

JPNS 102 Elementary Japanese II (4) (lec., lab) Development of listening, speaking, reading, writing. Structural points introduced inductively. Laboratory drill. (Same as JPST 102). (GenEd/IntReq: H/A/P)

JPNS 102S Elementary Japanese II Special (3) Japanese 102S, a continuation of 101S (for students with some language background of Japanese), covers the same material as JPNS 102 more quickly. 102S is one of the language core courses required for non-native speakers of Japanese majoring in Japanese Studies. The course is designed to provide students with instruction on elementary level spoken and written Japanese.

Pre: JPNS 101S or Instructor's approval. (Same as JPST 102S).

JPNS 107 Accelerated Element Japanese (8) Contents of JPNS 101-102 covered in one semester. Meets two hours daily, Monday through Friday. Language laboratory required. Development of four skills - speaking, listening, reading and writing - and an adequate knowledge at the beginning level of Japanese language. A variety of classroom activities, such as dialogue roleplay, individual and group presentations, grammar exercises, individualized laboratory work, and reading/writing practice in the basic scripts (Hiragana, Katakana and Kanji Characters). (Same as JPST 107). (GenEd/IntReq: H/A/P)

JPNS 201 Intermediate Japanese I (4) (lec., lab) Continuation of JPNS 102. More advanced colloquial structures and additional kanji.

Pre: JPNS 102 or equivalent. (Same as JPST 201). (GenEd/IntReq: H/A/P)

JPNS 202 Intermediate Japanese II (4) (lec., lab) Continuation of JPNS 201. More advanced colloquial structures and additional kanji.

Pre: JPNS 201 or equivalent. (Same as JPST 202). (GenEd/IntReq: H/A/P)

JPNS 301 Third-Year Japanese I (3) Study of modern spoken and written Japanese involving advanced structures, expressions, and kanji.

Pre: JPNS 202 or equivalent. (Same as JPST 301). (GenEd/IntReq: H/A/P)

JPNS 302 Third-Year Japanese II (3) Study of modern spoken and written Japanese involving advanced structures, expressions, and kanji.

Pre: JPNS 301 or equivalent. (Same as JPST 302). (GenEd/IntReq: H/A/P)

JPNS 345 Methods for Teaching Japanese (3) Japanese language teaching and learning from the perspectives of theory and practice. The application of modern applied linguistics and methodologies to specific problems confronting the Japanese language teacher and other foreign language teachers.

Pre: JPNS 202. (Same as JPST 345). (GenEd/IntReq: H/A/P)

JPNS 359 Japanese in Hawai'i (3) An examination of the process by which second generation Japanese people in Hawai'i become bilingual and bicultural. Historical and Linguistic contexts for becoming bilingual and bicultural are presented. Topics include Japanese culture and the role of first generation immigrants in Hawai'i. (Same as JPST 359). (GenEd/IntReq: H/A/P)

JPNS 365 Japanese Lit in English (3) Survey of major works from earliest times to the present. Knowledge of Japanese is not required. (Same as JPST 365, ENG 365). (GenEd/IntReq: H/A/P, HPP)

JPNS 370 Lang, Cul & Identity of Japan (3) Relationship of Japanese language to social structure, interpersonal relationships, and way of thinking. Application of general linguistics to social phenomena such as dialects, identity, bilingualism, acculturation.

Pre: JPNS 101 or instructor's consent. (Same as JPST 370)

JPNS 380 Japanese Mythology in Film (3) Interdisciplinary approaches to the study of Japanese myths and legends through contemporary films; mythological contexts related to Taoism, Buddhism, Shintoism as well as superstitions and legends are examined in relation with selected films from Japan. (Same as JPST 380). (GenEd/IntReq: H/A/P)

JPNS 382 Gender & Min Japanese Comics (3) Examination of gender and minority issues through a number of Japanese comic stories, or manga, translated into English. Analysis of the selected comic stories is based on a trove of scholarly writings about a protagonists' gender roles as well as Japan's subcultures representing marginalized groups of society. Discussion topics include the influences of manga on the creation of "ideal" men and women and its contribution to the awareness of minorities in Japan from 1960's to the present. Class work does not require the ability to read original Japanese texts. (Same as JPST 382). (GenEd/IntReq: H/A/P, HPP)

JPNS 383 Japanese Theatre & Performance (3) This course introduces the performance traditions in Japan, ranging from rituals to dance and theatre-traditional art forms such as kagura, noh, kyogen, kabuki, bunraku, to modern theatre after Japan's Westernization. Through readings and visual materials, students will observe the historical development of Japanese theatre and other performing art forms, from the ancient period to contemporary. At the same time, students are required to examine the Japanese art forms from the anthropological and sociological perspectives. The unique aspects of Japanese art forms-fusion of daily behavior, cultural appropriation, and intercultural elements-will be considered. Students also look at the role of performing arts and its preservation (like transmission of skills from generation to generation).
Pre: ENG 100, 100T, 100H, ESL 100 or 100T. (Same as JPST/DRAM 383).
(GenEd/IntReq: H/A/P, HPP)

JPNS 385 Postwar Jpn thru Film & Lit (3) This course introduces students to Japanese society and culture with emphasis on 1945 to the present, as reflected in film and literature. Students learn about essential issues of Japanese postwar society, including class, family, gender, work, education, and minorities, and examine the change and development of Japanese society after World War II, paying attention to the struggles between traditional cultural values and Americanization/Modernization of society. This semester students will view fourteen films by fourteen leading Japanese directors and read an essay and a novel written by Japanese authors and a variety of articles on film. (Same as JPST 385).
Pre: ENG 100, 100T, ESL 100 or ESL 100T. (GenEd/IntReq: H/A/P, HPP)

JPNS 401 Fourth-Yr Japanese I (3) Study of modern spoken and written Japanese involving advanced structures, expressions and additional kanji.
Pre: JPNS 302 or equivalent. (Same as JPST 401). (GenEd/IntReq: H/A/P)

JPNS 402 Fourth-Year Japanese II (3) This is an advanced course in conversation and composition covering cultural topics. It develops listening and speaking skills to communicate orally in authentic Japanese and expands spoken and written vocabulary knowledge. Students will practice presenting their ideas in speech and composition effectively.
Pre: JPNS 302 or instructor's consent. (Same as JPST 402). (GenEd/IntReq: H/A/P)

JPNS 425 Translation Workshop (3) Theory and practice of translation of Japanese materials into English. Emphasis on literary translation, but non-literary texts may also be considered. (Same as JPST 425). (GenEd/IntReq: H/A/P)
Pre: JPNS 302 or instructor's consent. May be repeated once for credit.

JPNS 451 Structure Of Japanese I (3) Phonology, morphology, syntax of modern colloquial grammar. (Same as LING 451, JPST 451).
Pre: LING 102 and JPNS 202, or instructor's consent. (GenEd/IntReq: H/A/P, HPP)

JPNS 452 Structure Of Japanese II (3) Phonology, morphology, syntax of modern colloquial grammar. (Same as LING 452, JPST 452). (GenEd/IntReq: H/A/P)
Pre: LING 102 and JPNS 202, or instructor's consent.

JPNS 481 Rdgs in Modern Japanese Lit I (3) Reading and discussion in Japanese of selected works of fiction, poetry, and drama. (Same as JPST 481). (GenEd/IntReq: H/A/P)
Pre: JPNS 302 or instructor's consent. May be repeated once for credit.

JPNS 495 Japanese Studies Seminar (3) The course examines Japanese experiments with the idea of the modern and postmodern, focusing on issues such as modernization/westernization, change in gender roles, urbanization, the power of the state, and nationalism and personal identity. In the course, mainly taught in Japanese students learn how to read and discuss in Japanese, and translate Japanese texts into English. The course introduces a variety of materials written between the end of Russo-Japanese War in 1905 and the current period.
Pre: JPNS 302 or instructor's consent. (Same as JPST 495). (GenEd/IntReq: H/A/P)

JPNS x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

JPNS x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.
Pre: instructor's consent.

Japanese Studies (JPST)

College of Arts and Sciences

JPST 101 Elementary Japanese I (4) (lec., lab) Development of listening, speaking, reading, writing. Structural points introduced inductively. Laboratory drill. (Same as JPNS 101). (GenEd/IntReq: H/A/P)

JPST 101S Elementary Japanese I, Special (3) Specially designed for students with some language background of Japanese. Same material as JPNS 101 more quickly covered. Development of four skills - speaking, listening, reading and writing - and an adequate entry-level knowledge of Japanese. A variety of classroom activities such as dialogue role-play, presentations, grammar exercises and individualized laboratory work. After reviewing Hiragana and Katakana, the course focuses on strengthening the skill of reading and writing Kanji characters at the beginning level.
Pre: Department Approval. (Same as JPNS 101S). (GenEd/IntReq: H/A/P)

JPST 102 Elementary Japanese II (4) (lec., lab) Development of listening, speaking, reading, writing. Structural points introduced inductively. Laboratory drill.
Pre: JPNS 101 or equivalent. (Same as JPNS 102). (GenEd/IntReq: H/A/P)

JPST 107 Accelerated Element Japanese (8) Contents of JPNS 101-102 covered in one semester. Meets two hours daily, Monday through Friday. Language laboratory required. Development of four skills - speaking, listening, reading and writing - and an adequate knowledge at the beginning level of Japanese language. A variety of classroom activities, such as dialogue roleplay, individual and group presentations, grammar exercises, individualized laboratory work, and reading/writing practice in the basic scripts (Hiragana, Katakana and Kanji characters). (Same as JPNS 107). (GenEd/IntReq: H/A/P)

JPST 200 Intro to Jpns & Chns Studies (3) This course studies the two regions of East Asia (Japan and China) with emphasis on philosophical, religious and cultural traditions, and patterns of social, economic and political change. Students will gain a general understanding of each region through a broad survey of important cultural movements and historical events that have made Japan and China what it is today. (Same as LANG 200). (GenEd/IntReq: H/A/P)

JPST 201 Intermediate Japanese I (4) (lec., lab) Continuation of JPNS 102. More advanced colloquial structures and kanji.
Pre: JPNS 102 or equivalent. (Same as JPNS 201). (GenEd/IntReq: H/A/P)

JPST 202 Intermediate Japanese II (4) (lec., lab) Continuation of JPST 201. More advanced colloquial structures and additional kanji.
Pre: JPNS 201 or equivalent. (Same as JPNS 202). (GenEd/IntReq: H/A/P)

JPST 301 Third-Year Japanese I (3) Study of modern spoken and written Japanese involving advanced structures, expressions, patterns, kanji.
Pre: JPNS 202 or equivalent. (Same as JPNS 301). (GenEd/IntReq: H/A/P)

JPST 302 Third-Year Japanese II (3) Study of modern spoken and written Japanese involving advanced structures, expressions, patterns, kanji.
Pre: JPNS 301 or equivalent. (Same as JPNS 302). (GenEd/IntReq: H/A/P)

JPST 310 Hist of Japan I: Early Japan (3) Japanese history and culture from prehistory to the mid-17th century. Topics include: origins of Japanese people and culture; the Imperial state; contacts with China and Korea; aristocratic culture, particularly the role of women; the samurai class and the Shogunates; Buddhism and Shinto; late medieval disorder and development; unification and pacification.
(Same as HIST 310). (GenEd/IntReq: H/A/P)

JPST 311 Hist Japan II: Tokugawa to Meiji (3) Japanese history and culture from the 17th through 19th centuries. Topics include: samurai and the class system; political change, economic growth and social tensions; urban and rural evolution; popular culture and literature; Japan's isolation and reopening; collapse of the Tokugawa system; the Meiji Restoration; dissolution of the samurai class; social reorganization and rapid modernization; the Meiji Constitution and new Imperial state. (Same as HIST 311). (GenEd/IntReq: H/A/P)

JPST 314 Hist of Jpn III: 20th Cent-Pre (3) Japanese history and culture from 1890 to present. Topics include: Meiji and 1947 constitutions; democracy and leadership; militarism and pacifism; evolving Imperial institution; economic growth and social change; tradition and modernity in Japanese culture; Japan's place in world systems and world culture. (Same as HIST 314). (GenEd/IntReq: H/A/P, HPP)

JPST 315 East Asian Religions (3) The development of Buddhism, Confucianism, Taoism, Shinto and folk religion in China, Korea and Japan.
Pre: junior standing or instructor's consent. (GenEd/IntReq: H/A/P)

JPST 345 Methods for Teaching Japanese (3) Japanese language teaching and learning from the perspectives of theory and practice. The application of modern applied linguistics and methodologies to specific problems confronting the Japanese language teacher and other foreign language teachers.
Pre: JPNS 202. (Same as JPNS 345). (GenEd/IntReq: H/A/P)

JPST 353 Politics Of Japan (3) Aspects of Japanese politics, emphasizing the post-1945 period. Topics include: political development and change, the political economy of Japan, major political institutions and organizations, policy-making processes, and controversial political issues. (Same as POLS 353). (GenEd/IntReq: H/A/P, HPP)

JPST 356 Japan (3) Culture origins and development with emphasis on contemporary Japanese culture. (Same as ANTH 356). (GenEd/IntReq: H/A/P)

JPST 358 Japanese Immigrants (3) Examination of social and cultural adaptations of Japanese immigrant populations, with foci on Hawai'i and Brazil. Topics include the role of the Japanese government and emigration companies, the factors of generation, kinship, ethnicity, and contemporary Japanese migrants. (Same as ANTH 358). (GenEd/IntReq: H/A/P)

JPST 359 Japanese in Hawai'i (3) An examination of the process by which second generation Japanese people in Hawai'i become bilingual and bicultural. Historical and Linguistic contexts for becoming bilingual and bicultural are presented. Topics include Japanese culture and the role of first generation immigrants in Hawai'i. (Same as JPNS 359). (GenEd/IntReq: H/A/P)

JPST 365 Japanese Lit in English (3) Survey of major works from earliest times to the present. Knowledge of Japanese is not required. (Same as JPNS 365, ENG 365). (GenEd/IntReq: H/A/P, HPP)

JPST 370 Lang, Cul & Identity of Japan (3) Relationship of Japanese language to social structure, interpersonal relationships, and way of thinking. Application of general linguistics to social phenomena such as dialects, identity, bilingualism, acculturation. Pre: JPNS 101 or instructor's consent. (Same as JPNS 370)

JPST 375 Japanese Music (3) Historical survey of traditional, contemporary, and Western-influenced music of Japan and study of major genres. No previous musical knowledge is required. Pre: junior standing or instructor's consent. (GenEd/IntReq: H/A/P)

JPST 380 Japanese Mythology in Film (3) Interdisciplinary approaches to the study of Japanese myths and legends through contemporary films; mythological contexts related to Taoism, Buddhism, Shintoism as well as superstitions and legends are examined in relation with selected films from Japan. (Same as JPNS 380). (GenEd/IntReq: H/A/P)

JPST 381 Art of Japan (3) The history of art in Japan with emphasis on Buddhist art, the relationships between Chinese and Japanese arts. (Same as ART 381). Pre: ART 280 or JPST course or instructor's consent. (GenEd/IntReq: H/A/P)

JPST 382 Gender & Min Japanese Comics (3) Examination of gender and minority issues through a number of Japanese comic stories, or manga, translated into English. Analysis of the selected comic stories is based on a trove of scholarly writings about protagonists' gender roles as well as Japan's subcultures representing marginalized groups of society. Discussion topics include the influences of manga on the creation of 'ideal' men and women and its contribution to the awareness of minorities in Japan from 1960's to the present. Class work does not require the ability to read original Japanese texts. (Same as JPNS 382). (GenEd/IntReq: H/A/P, HPP)

JPST 383 Japanese Theatre & Performance (3) This course introduces the performance traditions of Japan, ranging from rituals to dance and theatre-traditional art forms such as kagura, noh, kyogen, kabuki, bunraku, to modern theatre after Japan's Westernization. Through readings and visual materials, students will observe the historical development of Japanese theatre and other performing art forms, from the ancient period to contemporary. At the same time, students are required to examine the Japanese art forms from the anthropological and sociological perspectives. The unique aspects of Japanese art forms-fusion of daily behavior, cultural appropriation, and intercultural elements-will be considered. Students also look at the role of performing arts and its preservation (like transmission of skills from generation to generation). Pre: ENG 100, 100T, 100H, ESL 100 or 100T. (Same as JPNS/DRAM 383). (GenEd/IntReq: H/A/P, HPP)

JPST 385 Postwar Jpn thru Film & Lit (3) This course introduces students to Japanese society and culture with emphasis on 1945 to the present, as reflected in film and literature. Students learn about essential issues of Japanese postwar society, including class, family, gender, work, education, and minorities, and examine the change and development of Japanese society after World War II, paying attention to the struggles between traditional cultural values and Americanization/modernization of society. This semester students will view fourteen films by fourteen leading Japanese directors and read an essay and a novel written by Japanese authors and a variety of articles on film. Pre: ENG 100, 100T, ESL 100, or ESL 100T. (Same as JPNS 385). (GenEd/IntReq: H/A/P, HPP)

JPST 401 Fourth-Year Japanese I (3) Study of modern spoken and written Japanese involving advanced structures, expressions and additional kanji. Pre: JPNS 302 or equivalent. (Same as JPNS 401). (GenEd/IntReq: H/A/P)

JPST 402 Fourth-Year Japanese II (3) This is an advanced course in conversation and composition covering cultural topics. It develops listening and speaking skills to communicate orally in authentic Japanese and expands spoken and written vocabulary knowledge. Students will practice presenting their ideas in speech and composition effectively. Pre: JPNS 302 or instructor's consent. (Same as JPNS 402). (GenEd/IntReq: H/A/P)

JPST 410 History of Chinese Characters (3) This course introduces Chinese civilization and history through an investigation of the evolution of Chinesescript and the socio-cultural factors related to it. Archaeological and historical materials are used in introducing its various forms in history: from tortoiseshells to seal and clericalscripts as well as regularscript. Historical and cultural setting of creating and using the specificscript are examined. The transformation of Chinesescript into Japanese "kanji" and cultural exchange between Asian countries are also discussed. Pre: one of the following: CHNS 101, CHNS 107, JPNS 101, JPNS 101S, or JPNS 107. (Same as LANG/CHNS 410). (GenEd/IntReq: H/A/P)

JPST 425 Translation Workshop (3) Theory and practice of translation of Japanese materials into English. Emphasis on literary translation, but non-literary texts may also be considered. (Same as JPNS 425). (GenEd/IntReq: H/A/P) Pre: JPNS 302 or instructor's consent. May be repeated once for credit.

JPST 430 Philosophy of Zen (3) Chief philosophical teachings of Zen, its methods and cultural influences. Comparative study of Zen and Western thought. Pre: previous work in philosophy or religious studies, or instructor's consent. Recommended: PHIL 302. (Same as PHIL 430). (GenEd/IntReq: H/A/P, HPP)

JPST 450 Mahayana Buddhist Phil (3) Important tenets and major schools of Mahayana Buddhist philosophy in India, China, Japan, Tibet, and Hawaii. Comparative study of Mahayana and Western philosophy. Pre: previous work in philosophy, religious studies, or instructor's consent. Recommended: PHIL 302. (Same as PHIL 450). (GenEd/IntReq: H/A/P, HPP)

JPST 451 Structure Of Japanese I (3) Phonology, morphology, syntax of modern colloquial grammar. (Same as LING 451, JPNS 451).

Pre: LING 102 and JPNS 202, or instructor's consent. (GenEd/IntReq: H/A/P, HPP)

JPST 452 Structure Of Japanese II (3) Phonology, morphology, syntax of modern colloquial grammar. (Same as LING 452, JPNS 452).

Pre: LING 102 and JPNS 202, or instructor's consent. (GenEd/IntReq: H/A/P)

JPST 457 Japanese Culture & Commun (3) This course explores aspects of Japanese communication from cross-cultural perspectives and examines problems in intercultural interactions between Japanese and non-Japanese. (Same as COM 457). (GenEd/IntReq: H/A/P)

JPST 481 Rdgs in Modern Japanese Lit I (3) Reading and discussion in Japanese of selected works of fiction, poetry, and drama. (Same as JPNS 481). (GenEd/IntReq: H/A/P) Pre: JPNS 302 or instructor's consent. May be repeated once for credit.

JPST 495 Japanese Studies Seminar (3) The course examines Japanese experiments with the idea of the modern and postmodern, focusing on issues such as modernization/westernization, change in gender roles, urbanization, the power of the state, and nationalism and personal identity. In the course, mainly taught in Japanese students learn how to read and discuss in Japanese, and translate Japanese texts into English. The course introduces a variety of materials written between the end of Russo-Japanese War in 1905 and the current period. Pre: JPNS 302 or instructor's consent. (Same as JPNS 495). (GenEd/IntReq: H/A/P)

JPST x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

JPST x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. Pre: instructor's consent.

Ke'elikōlani Anthropology (KANT)

Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language

Built upon a core commitment to Hawaiian language and culture education, Ka Haka 'Ula O Ke'elikōlani provides courses that also address the broader world of indigenous peoples and the use of Hawaiian as an official medium of education for the State of Hawaii. Courses other than Hawaiian language (HAW) and Hawaiian Studies (HWST) are marked with an initial K (for Ke'elikōlani) followed by an appropriate alpha, e.g. IND (Indigenous Studies), ANT (Anthropology), ED (Education), etc.

KANT 486 Mo'omeheu Hawaii' Ku'una (3) Traditional Hawaiian culture in the eighteenth and early nineteenth centuries: fishing and farming, political-economic organization and religion. Based on reading Malo's Ka Mo'olelo Hawaii'. Pre: HAW 303 or equivalent. Conducted in Hawaiian. (GenEd/IntReq: H/A/P)

KANT x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

KANT x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. Pre: instructor's consent.

Ke'elikōlani Education (KED)

Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language

Built upon a core commitment to Hawaiian language and culture education, Ka Haka 'Ula O Ke'elikōlani provides courses that also address the broader world of indigenous peoples and the use of Hawaiian as an official medium of education for the State of Hawaii. Courses other than Hawaiian language (HAW) and Hawaiian Studies (HWST) are marked with an initial K (for Ke'elikōlani) followed by an appropriate alpha, e.g. IND (Indigenous Studies), ANT (Anthropology), ED (Education), etc.

KED 462 Enrichg Holistic Lrng Mauli Ola (1) Continuation of KED 461. Advanced level for increasing teacher effectiveness through culturally appropriate classroom practices and curriculum development. Course work focuses on improving culture-based instruction through evaluation and revision of a unit plan. Must be taken CR/NC. Conducted in Hawaiian. Pre: KED 361 and KED 461; minimum of 3 years college-level Hawaiian language course work, and permission from the College.

KED 463 Substitute Tcher Sem in Mauli (1) Preparation to teach in a Hawaiian medium environment as a substitute teacher. Content includes the completion of Hawaii' State requirements for substitute teacher certification, basic classroom management, lesson design and delivery, learning and implementation of policies and procedures to be employed as a substitute in Hawaii' DOE schools. Must be taken as CR/NC. Conducted in Hawaiian.

KED x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

KED x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.
Pre: instructor's consent.

Ke'elikōlani Hawaiian Language (KHAW)

Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language

Built upon a core commitment to Hawaiian language and culture education, Ka Haka 'Ula O Ke'elikōlani provides courses that also address the broader world of indigenous peoples and the use of Hawaiian as an official medium of education for the State of Hawai'i. Courses other than Hawaiian language (HAW) and Hawaiian Studies (HWST) are marked with an initial K (for Ke'elikōlani) followed by an appropriate alpha, e.g. IND (Indigenous Studies), ANT (Anthropology), ED (Education), etc.

KHAW 103 First Lvl Trans Hawn Immersion (4) Development of analytical skills to improve existing listening, speaking, reading and writing skills at the first level. Taught partially in Hawaiian from a Kumu Honua Maui Ola philosophical base. This course is designed primarily for students with previous high school/beginning college level Hawaiian. (GenEd/IntReq: HPP)

KHAW 104 First Lvl Partial Hawn Immers (4) Strengthens and increases analytical skills as well as listening, speaking, reading and writing skills from KHAW 103 or HAW 102 or 105. Taught primarily in Hawaiian from a Kumu Honua Maui Ola philosophical base.
Pre: KHAW 103, or HAW 102 or 105 or placement exam. (GenEd/IntReq: HPP)

KHAW 108 Accel First Lvl Hawn Immersion (8) Contents of KHAW 103-104 covered in one semester. Development and strengthening of analytical skills to improve existing listening, speaking, reading and writing skills at the first level. Taught partially in Hawaiian from a Kumu Honua Maui Ola philosophical base. This course is designed primarily for student with previous high school/beginning college level Hawaiian. Meets two hours daily, Monday through Friday. (GenEd/IntReq: HPP)

KHAW 133 First Lvl Hawn for Speakers (4) Focus on strengthening skills in language analysis, vocabulary development, and writing at a university level Hawaiian. This course is designed primarily for students educated through the medium of Hawaiian, first language speakers of Hawaiians and native speakers.
Pre: Placement exam. (GenEd/IntReq: HPP)

KHAW 203 Second Lvl Univ Hawn Immers I (4) Second year skills in Hawaiian developed from KHAW 104 base or higher. Focus on accurate personal communicative use and connections to oral Hawaiian of earlier generations.
Pre: C or better in KHAW 104, 108 or 133 or HAW 202 or 205 or placement exam or equivalent approved by dept chair. (GenEd/IntReq: HPP)

KHAW 204 Second Lvl Univ Hawn Immers II (4) Continuation and expansion of KHAW 203. (GenEd/IntReq: HPP)
Pre: C or better in KHAW 203 or equivalent as approved by Dept chair.

KHAW 206 Intensive Intern Hawaiian (8) Continuation of HAW 102 or 105. Content of HAW 201 and 202 covered in one semester. A second year study of Hawaiian as an auxiliary language. Meets two hours daily, Monday through Friday.
Pre: HAW 102 or HAW 105 or equivalent.

KHAW 208 Accel Sec Lvl Univ Hawn Immers (8) Contents of KHAW 203 and 204 covered in one semester. Second year skills in Hawaiian developed from KHAW 104 base or higher. Focus on accurate personal communicative use and connections to oral Hawaiian of earlier generations. Meets 2 hours daily, Monday through Friday.
Pre: C or higher in KHAW 104 or KHAW 107 or KHAW 133 or equivalent.
(GenEd/IntReq: HPP)

KHAW 233 Second Level Hawn for Speakers (4) Continuation of HAW 133.
Pre: B or better in HAW 133 or equivalent as approved by dept chair. (GenEd/IntReq: HPP)

KHAW 303 Third Level Hawaiian I (4) Continuation of KHAW 204 and KHAW 208 and KHAW 233. Focus on analysis as the key to strong community use as a modeled in 19th and 20th century native speaker produced writings and tapes.
Pre: C or better in KHAW 204 or KHAW 208 or KHAW 233 or equivalent as approved by dept chair.

KHAW 304 Third Level Hawaiian II (4) Continuation of KHAW 303. Leadership development of informal use of Hawaiian among students from HAW 104-303.
Pre: C or better in KHAW 303 or equivalent as approved by department chair.

KHAW 333 Applied Skills (3) Practice skills developed in KHAW 304.
Pre: Previous or simultaneous enrollment in KHAW 304.

KHAW 403 Fourth Level Hawaiian I (4) Continuation of KHAW 304. Advanced structures, expressions and patterns. Conducted in Hawaiian.
Pre: C or better in KHAW 304 or permission of the instructor.

KHAW 404 Fourth Level Hawaiian II (4) Continuation of KHAW 403. Advanced structures, expressions and patterns. Conducted in Hawaiian. Language laboratory required.
Pre: C or better in KHAW 403 or permission of the instructor.

KHAW 452 Translation into Hawaiian (3) This courses trains students to translate from English into Hawaiian. A wide range of materials is covered, from school texts to news items and legal materials.
Pre: KHAW/HAW 404, which, with permission, may be taken concurrently.

KHAW 490 Base-level Fluency Hawn Med Ed (1) A review and strengthening of Hawaiian language fluency skills with focus on the applicability to Hawaiian medium education. Must be taken CR/NC. Conducted in Hawaiian.
Pre: HAW 303 or simultaneous enrollment.

KHAW x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

KHAW x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.
Pre: instructor's consent.

Ke'elikōlani Hawaiian Studies (KHWS)

Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language

Built upon a core commitment to Hawaiian language and culture education, Ka Haka 'Ula O Ke'elikōlani provides courses that also address the broader world of indigenous peoples and the use of Hawaiian as an official medium of education for the State of Hawai'i. Courses other than Hawaiian language (HAW) and Hawaiian Studies (HWST) are marked with an initial K (for Ke'elikōlani) followed by an appropriate alpha, e.g. IND (Indigenous Studies), ANT (Anthropology), ED (Education), etc.

KHWS 405A Hana No'eau: Lau Hala (1) Traditional Hawaiian arts (lauhala) taught in Hawaiian. (May be repeated for credit if topics are different.)
Pre: KHAW 204 or equivalent, which, with permission may be taken concurrently.

KHWS 405E Hana No'eau: 'Upena/Koko (1) Traditional Hawaiian arts ('upena/koko) taught in Hawaiian. (May be repeated for credit if topics are different.)
Pre: KHAW 204 or equivalent, which, with permission, may be taken concurrently.

KHWS 405I Hana No'eau: Hulu Manu (1) Traditional Hawaiian arts (hula manu) taught in Hawaiian. (May be repeated for credit if topics are different.)
Pre: KHAW 204 or equivalent, which, with permission, can be taken concurrently.

KHWS 405O Hana No'eau: Other (1) Traditional Hawaiian arts taught in Hawaiian. (May be repeated for credit if topics are different.)
Pre: KHAW 204 or equivalent, which, with permission, may be taken concurrently.

KHWS 461A Pana Hawai'i: Hawai'i (3) Traditions and literature of Pana (names of cultural importance). Emphasis on island of Hawai'i, conducted in Hawaiian.
Pre: HWST 111, KHAW 204 or equivalent, which, with permission, may be taken concurrently. May be repeated for credit if subletters are different.

KHWS 461E Pana Hawai'i: Maui (3) Traditions and literature of Pana (names of cultural importance). Emphasis on island of Maui, conducted in Hawaiian.
Pre: HWST 111, KHAW 204 or equivalent, which, with permission, may be taken concurrently. May be repeated for credit if subletters are different.

KHWS 461I Pana Hawai'i: Moloka'i & Lana'i (3) Traditions and literature of Pana (names of cultural importance). Emphasis on islands of Moloka'i and Lana'i, conducted in Hawaiian.
Pre: HWST 111, KHAW 204 or equivalent, which, with permission, may be taken concurrently. May be repeated for credit if subletters are different.

KHWS 461O Pana Hawai'i: O'ahu (3) Traditions and literature of Pana (names sites of cultural importance). Emphasis on island of O'ahu, conducted in Hawaiian.
Pre: HWST 111, KHAW 204 or equivalent, which, with permission, may be taken concurrently. May be repeated for credit if subletters are different.

KHWS 461U Pana Hawai'i: Kaua'i & Ni'ihau (3) Traditions and literature of Pana (names sites of cultural importance). Emphasis on islands of Kaua'i and Ni'ihau, conducted in Hawaiian.
Pre: HWST 111, KHAW 204, or equivalent, which, with permission, may be taken concurrently. May be repeated for credit if subletters are different.

KHWS 462 Haku Mele (3) Hawaiian poetry as literature. Survey and analysis of traditional and modern forms, methods of composition, poetic language, imagery, and kaona (hidden meanings). Interpreting and composing poetry in Hawaiian. Conducted in Hawaiian.
Pre: KHAW 303, which may be taken concurrently, or instructor's consent.
Recommended: KHWS/ HWST 461.

KHWS 465 Ha'i'ōlelo Ku'una (3) This course will develop a foundational understanding and practice in classical Hawaiian speech making. Through the Kumu Honua Maui Ola Philosophy of Hawaiian Being, this course will focus on reading comprehension of classical Hawaiian literature, mainly to analyze ethno-literary devices and lexical items. (Same as HWST 465).
Pre: KHAW/HAW 403 or equivalent, may be taken concurrently with permission.

KHAW x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

KHAW x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.
Pre: instructor's consent.

Ke'elikōlani Indigenous Lanaguage (KLAN) Courses

Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language

Built upon a core commitment to Hawaiian language and culture education, Ka Haka 'Ula O Ke'elikōlani provides courses that also address the broader world of indigenous peoples and the use of Hawaiian as an official medium of education for the State of Hawai'i. Courses other than Hawaiian language (HAW) and Hawaiian Studies (HWST) are marked with an initial K (for Ke'elikōlani) followed by an appropriate alpha, e.g. IND (Indigenous Studies), ANT (Anthropology), ED (Education), etc.

KLAN 441 Advanced Structures I (2) First semester advanced level study of an indigenous or lesser studied language focusing on structure, e.g. Blackfeet, Rapanui. May be repeated if the topic is different. Alpha varies according to the language. Prerequisite or concurrent enrollment in KIND 441; consent of department and of instructor.

KLAN 442 Advanced Structures II (2) Second semester advanced level study of an indigenous or lesser studied language focusing on structure, e.g. Blackfeet, Rapanui. Alpha varies according to the language. May be repeated if the content is different. Pre: KIND 441, KLAN 441, concurrent enrollment in KIND 442; consent of department; instructor's consent.

KLAN x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

KLAN x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. Pre: instructor's consent.

Ke'elikōlani Indigenous Studies (KIND)

Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language

Built upon a core commitment to Hawaiian language and culture education, Ka Haka 'Ula O Ke'elikōlani provides courses that also address the broader world of indigenous peoples and the use of Hawaiian as an official medium of education for the State of Hawai'i. Courses other than Hawaiian language (HAW) and Hawaiian Studies (HWST) are marked with an initial K (for Ke'elikōlani) followed by an appropriate alpha, e.g. IND (Indigenous Studies), ANT (Anthropology), ED (Education), etc.

KIND 240 Culture Revitalization Movemnt (3) Efforts throughout the world to preserve the linguistic and cultural distinctiveness of indigenous and regional minorities. The interrelationship of such efforts with political, cultural, educational, and economic structures. Focus on comparison of other movements with that of Hawai'i. (When followed by H, taught through Hawaiian.)

KIND 441 Advanced Language in Culture I (2) First semester advanced level study of an indigenous language focusing on the use of the language in its cultural context. Alpha varies according to the language, e.g. Blackfeet, Rapanui. May be repeated if the content is different. Prerequisite or concurrent enrollment in KLAN 441; consent of department and of instructor.

KIND 442 Advancd Language in Culture II (2) Second semester advanced level study of an indigenous language focusing on the use of the language in its cultural context. Alpha varies according to the language, e.g. Blackfeet, Rapanui. May be repeated if the content is different. Pre: KIND 441 and KLAN 441, concurrent enrollment in KLAN 442; consent of department and of the instructor.

KIND x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

KIND x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. Pre: instructor's consent.

Kinesiology and Exercise Science (KES)

College of Arts and Sciences

KES 101 Physical Fitness (1) Conditioning exercises and activities to develop and maintain physical efficiency. Motor fitness tests administered to measure status and progress.

KES 103 Swimming: Beginning (1) Adjusting to water, immersing in water, floating, sculling, correct arm stroke, leg kick, breathing techniques and their coordination.

KES 104 Swimming: Intermediate (1) Perfecting and integrating basic strokes with added emphasis on swimming for distance and speed.

KES 107 Tennis: Beginning (1) Rules, etiquette, grip, forehand and backhand strokes, serving, volleying, singles and doubles play.

KES 108 Tennis: Advanced (1) Improving the serve, forehand and backhand strokes, volleying, chop strokes, competitive strategy, problems in rules.

KES 110 Golf: Beginning (1) Rules, etiquette, and skill (grip, stance, stroke) in using the irons, woods, and putter. Driving range and play on golf course require additional fees.

KES 117 Mountain Biking (1) Basic knowledge and skills of mountain biking. Emphasis will be placed on the safe operation and maintenance of the bike for recreational purposes. Uses such as commuting and racing will be discussed.

KES 120 Badminton (1) Rules, etiquette, grip, forehand and backhand strokes, serving, smash, drive, netplay, offensive and defensive strategy in singles and doubles play.

KES 121 Advanced Badminton (1) Competitive singles and doubles strategy, rules and etiquette. Perfecting fundamental strokes: smash, clear, drops, net, and drive shots.

KES 134 Volleyball: Beginning (1) Rules, fundamental skills of passing, setting, hitting, blocking, digging, and team strategies.

KES 136 Team Sports (1) Skills, knowledge, attitudes and appreciation. Combination of soccer and softball.

KES 138 Basketball: Beginning (1) Rules, etiquette, skills in footwork, body balance, passing, shooting, dribbling, rebounding, individual and team strategies, and plays.

KES 139 Basketball: Advanced (1) Improving fundamental skills, advanced strategies, ball control and shooting skills, offensive and defensive tactics, and officiating.

KES 143 Canoe Paddling (1) (lab) Explore and connect with the spiritual and traditional aspects of our Hawaiian culture through the physical application of the ancient and contemporary sport of canoe paddling.

KES 144 Ocean Safety (1) (lab) Gain an appreciation and awareness of the ocean habitat within the District of Hilo as well as develop general ocean safety skills.

KES 145 Surfing (1) (lab) Explore and connect with the spiritual and traditional aspects of our Hawaiian culture through the physical application of the ancient and contemporary sport of surfing.

KES 146 Adventure (1) Students will be exposed to a variety of experiential physical activities over the course of seven all day sessions. The experiential physical activities that students will be exposed to will be unique to the island of Hawai'i.

KES 152 Weight Training (1) Fundamental techniques of weight training which includes safety and precautions, diet and nutrition, basic weight training principles and individualized exercise programs for total physical fitness.

KES 201 School Health Problems (2) Responsibilities of the elementary school teacher in recognizing and meeting pupil's needs, teacher's role in health instruction, health services, healthful school living, and school health policies.

KES 202 Health Promotion (3) This course is designed for students to understand health in the broadest sense of the word—as an integrated process for discovering, using, and protecting all possible resources within the individual, 'ohana, community, and environment.

KES 203 Intro to Physical Education (2) Nature, scope, aim and objectives of physical education; basic principles of human movement; physical education as academic discipline and its relationship to fields such as recreation, health education, and athletics.

KES 204 Intro to Coaching Athletics (2) Nature, responsibilities, personal and professional requirements of a coach. Scientific principles applicable to coaching methodology and athletic competition.

KES 206 Basic Human Movement (3) Developing skills to understand the nature and function of human movement in everyday life, sport, dance, physical education, and adapted movement activities.

KES 207 Basic Human Nutrition (3) Fundamental principles of normal nutrition and the importance of nutrition in promoting growth and health.

KES 208 Elementary Tests & Measurement (3) Basic understanding and appreciation of the why and how of testing in health, physical education, and athletics. The development and evaluation of neuromuscular and organic abilities and the handling of test data by elementary statistical methods will be covered.

KES 209 Data and Stats in Kinesiology (3) This course focuses on the data management and the basic statistics in exercise sciences. Content includes research methods and designs, data collection, organization and management, descriptive and inferential statistics, central tendency, variability, correlation, regression, t-tests, analysis of variance and various nonparametric tests. Computerized statistical analyses are embedded throughout the course. Pre: KES 208 and two years high school algebra or the equivalent.

KES 224 Human Physiology & Spaceflight (3) This course explores the effects of microgravity and spaceflight on the physiology of passengers. Topics addressed in this course include space travel effects on: the skeletal system; the muscular system; the cardiovascular and cardiorespiratory systems; and the neurovestibular system. Effects of radiation exposure, psychosocial issues in spaceflight, and medical risks and preventions will be presented in this course.

KES 232 Safety & Accident Prevention (2) Understanding the fundamental principles and techniques of safety and accident prevention in school, home, work, motor vehicle, and recreational situations.

KES 233 Physical Education: Elementary (3) Content and methods for physical education in elementary school. Selection, planning, teaching, evaluation of movement skills, and activities. Pre: junior standing.

KES 234 Care & Prev Athletic Injuries (3) Fundamentals in athletic training and sports medicine designed to introduce principles and concepts in prevention and treatment of sports-related injuries. Additional fees required.

KES 260 Exercise Science Anat & Phys I (3) This course will cover basic human anatomy, physiology and chemistry of cells, organelles, cell division, metabolism, genetics, tissues, the integumentum, bone and muscle tissue. Each subject is presented with the emphasis on its response to activity and exercise.

KES 261 Exercise Science Anat & Phy II (3) This course is a continuation of Exercise Sciences Anatomy and Physiology I. The course will cover basic human anatomy and physiology of the endocrine, circulatory, lymphatic, respiratory, digestive, urinary and reproductive systems. Each subject is presented with the emphasis on its response to activity and exercise.

Pre: KES 260.

KES 263 Intramural Athletics (2) The organization, administration, and supervision of intramural sports programs in schools with emphasis on leadership, program content, facilities, scheduling, rules and regulations, promotion, financing, and evaluation.

KES 300 Psyc-Soc Aspects Of Sport (3) The functions and dysfunctions of the sporting system will be examined from sociological perspectives. In addition, specific psychological constructs are presented in order to examine the relationship between environmental sources of influence and the individual's capacity for self-management in the sporting world.

KES 302 Sport & Spirituality (3) The spiritual experience of sport is central both to our basic motivation to take part in sports, and to achieving success. This course explores human aspects of the sport experience through the perspectives of sport psychology, philosophy, ethics, theology and religious studies.

KES 306 Advanced Human Movement (3) The advanced skills necessary to understand the nature and function of human movement in every day life, sport, dance, and physical education and adapted movement activities. Pre: KES 206.

KES 308 Science Behind Trng Athletes (3) Basic understanding of training theory and the physiological and biomechanical factors that determine muscle strength and conditioning progression, including timing in training factors in exercise selection, and injury prevention.

KES 309 Prep For Personal Trn Cert (3) This course will provide information, expertise and practical experience to help prepare students to be pass the National Council On Strength and Fitness Personal Trainer Certification Exam. Pre: KES 260 and 261 or equivalent and KES 207.

KES 310 Basic Motor Learning (3) Basic understanding of the principles of motor learning and performance in a variety of contexts including teaching, coaching, design of performer-friendly equipment and work environments, and everyday motor skill learning.

KES 320 Drug Awareness (3) For students interested in the prevention and treatment of victims of legal and illegal use, misuses, and abuse of drugs and related substances. Examine the problems and consequences of people who have to deal with this dilemma.

KES 330 Applied Motor Learning (3) Applying the principles of motor learning in different contexts such as teaching, coaching, design of performer-friendly equipment and work environments, rehabilitation, and everyday motor skill learning. Developing of motor learning programs.

Pre: KES 310.

KES 334 Adv Care & Preventn Athlct Inj (3) An in-depth understanding and appreciation of the prevention, management, and care of athletic injuries. Application of tape and braces for prevention and management of injuries and first aid and CPR certification will also be covered.

Pre: KES 234, BIOL 243-244 and BIOL 243L-244L.

KES 340 Science: Diet & Weight Cntrl (3) This course presents a basic understanding of the multiple factors involved with body weight control and health. This course centers on the important scientific factors of body weight control, including energy balance, basal metabolism, hunger versus appetite, nutritional function and needs, nature versus nurture of obesity, treatment of obesity, physical activity and it's importance in weight control and maintenance. Eating disorders and medical interventions such as gastric bypass surgery will be presented.

KES 343 Musculoskeletal Anatomy (3) Basic understanding of human anatomy from the perspective of movement, with emphasis on the skeletal and muscular systems.

Pre: BIOL 243-244 and BIOL 243L-244L.

KES 344 Musculoskeletal Physiology (3) Basic understanding of human musculoskeletal physiology from the perspective of internal function, with emphasis on aerobic and anaerobic metabolism during muscular function.

Pre: KES 343

KES 348 Exercise Physiology (3) Basic understanding of human physiology and its response to exercise and adaptations to various types of training. Physiological systems are reviewed as they respond to acute bouts of exercise and long-term exposure to exercise. Pre: BIOL 125.

KES 360 Olympism and Olympic Studies (3) This course aims to provide students with specialized knowledge on issues related to the Olympic Games and in particular on the values and meanings behind them. The course focuses on Olympism and the three pillars of the Olympic Movement: Education, Sports, and Culture.

KES 368 Sports and Exercise Nutrition (3) This course will introduce the student to the importance of nutrition in the field of exercise sciences. The purpose of this course is to bridge between nutritional concepts and exercise concepts, and the practical applications.

Pre: KES 207.

KES 370 Sport Psychology (3) Survey of methods and findings in the application of psychological principles in sport. Topics include arousal and anxiety, cognitive processes, team performance, coaching behavior and techniques to maximize sports performance. (Same as PSY 370)

KES 380 Applied Sport Psychology (3) Based on the principles of sport and exercise psychology. Focus on methods and programs applying sport psychology in the field of health and physical education to enhance performance, adhere people to physical exercise programs and support the overall well-being.

Pre: KES/PSY 370.

KES 440 Physiology of Aging (3) Study of the physiological mechanisms and the effects of aging on the human systems including the cardiopulmonary, musculoskeletal, neurological, sensory, metabolic, and endocrinological. This course will present the topic of physiology of exercise and aging.

Pre: BIOL 125.

KES 443 Adapted Physical Education (3) Understanding the basics of various disabilities, how to assess the physical and motor skills of the disabled and how to develop individual activity programs for children and youth with disabilities.

KES x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

KES x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.

Pre: instructor's consent.

Languages (LANG)

College of Arts and Sciences, Languages

LANG 200 Intro to Jpns & Chns Studies (3) This course studies the two regions of East Asia (Japan and China) with emphasis on philosophical, religious and cultural traditions, and patterns of social, economic and political change. Students will gain a general understanding of each region through a broad survey of important cultural movements and historical events that have made Japan and China what it is today. (Same as JPST 200). (GenEd/IntReq: H/A/P)

LANG 410 History of Chinese Characters (3) This course introduces Chinese civilization and history through an investigation of the evolution of Chinesescript and the socio-cultural factors related to it. Archaeological and historical materials are used in introducing its various forms in history: from tortoiseshells to seal and clericalscripts as well as regularscript. Historical and cultural setting of creating and using the specificscript are examined. The transformation of Chinesescript into Japanese "kanji" and cultural exchange between Asian countries are also discussed.

Pre: one of the following: CHNS 101, CHNS 107, JPNS 101, JPNS 101S, or JPNS 107. (Same as CHNS/JPST 410). (GenEd/IntReq: H/A/P)

LANG x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

LANG x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.

Pre: instructor's consent.

Latin (LATN)

College of Arts and Sciences

LATN 101 Introduction to Latin (3) An introduction to the Latin language. Vocabulary, Grammar, Translation from Latin into English, Historical background of Classical Rome and its Empire.

LATN 102 Introduction to Latin II (3) Continuation of LATN 101. Vocabulary, Grammar, Translation from Latin into English. Historical background of Classical Rome and its Empire.

LATN x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

LATN x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. Pre: instructor's consent.

Linguistics (LING)

Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language

LING 102 Introduction to Linguistics (3) A broad introduction to general linguistics: survey of phonology, morphological, syntactic, and semantic analysis, and historical and comparative linguistics. (Formerly LING/ENG 203).

LING 121 Introduction to Language (3) Linguistically oriented approaches to human behavior, including ethnolinguistics, sociolinguistics, and psycholinguistics. The way language functions in culture, society, and the cognitive processes. (Same as ANTH 121)

LING 133 Elem Indig Lang (3) Examine formal study of indigenous languages and issues of formal writing systems. For highly fluent native speakers, immersion school students, and others with similar levels of fluency. May be specific to language spoken or systematic attention to target skills with students speaking several different languages. A) Systematic for multiple languages, B) Navajo, C) Chuukese, D) Central Alaskan Yup'ik E) Samoan, F) Other. May be taken again if the sub-letters are different. *Pre:* LING 102 and fluency in an indigenous or minority autochthonous language appropriate to the sub-letter. Note: Fluency in Hawaiian cannot be used to enroll in sub-letter A of this course.

LING 233 Inter Indig Langs (3) Continuation of LING 133. A) systematic for multiple languages, B) Navajo, C) Chuukese, D) Central Alaskan Yupik, E) Samoan, F) Other. May be taken again if the sub-letters are different. *Pre:* LING 133 with same sub-letter.

LING 311 Phonetics and Phonology (3) Provides a conceptual framework and practical skills to engage in work in phonetics and phonology. Course includes training in the production and perception of speech sounds, as well as the physiological and acoustic description of them. Students learn IPA transcription symbols and practice analyzing phonological data based on the languages of the world. *Pre:* LING 102 or 121 or instructor's consent.

LING 320 Hist Of The English Lang (3) The major developments in the English language from the 5th century to the present day. *Pre:* ENG/ESL 100, LING 102 or LING 121, or instructor's consent. (Same as ENG 320)

LING 321 Morphology And Syntax (3) Introduction to grammatical analysis and theory; practical experience in solving problems in morphology and syntax, using data drawn from a wide variety of languages. *Pre:* LING 102 or instructor's consent. (Same as ANTH 321 and ENG 321)

LING 324 Modern English Grammar (3) The fundamentals of English morphology and syntax, conventions of written and spoken English, and sociolinguistic aspects of major English registers and dialects. (Same as ENG 324) *Pre:* ENG/ESL 100, LING 102 or LING 121, or instructor's consent.

LING 331 Lang in Culture & Society (3) An examination of the articulation of language in social and cultural context, including topics relevant to sociolinguistics and ethnolinguistics. *Pre:* ANTH/LING 121 or LING 102 or instructor's consent. (Same as ANTH 331)

LING 333 Psycholinguistics (3) Theory and method in the investigation of the relationship between language and cognition, first and second language acquisition, speech pathologies. *Pre:* LING 102 or PSY 100 or instructor's consent. (Same as PSY 333)

LING 344 Children And Language (3) Strategies of language acquisition used by children; emphasis on investigative skills and methods, including some field work. *Pre:* LING 102 or LING 121. (Same as ENG 344)

LING 345 Historical & Comparative Ling (3) This course provides an introduction to the principles of historical linguistics beginning with a survey of the features of the world's language families. A problem-solving approach is adopted as students learn the comparative method of reconstruction and actually engage in the linguistic reconstruction of protolanguages.

LING 347 Pidgins And Creoles (3) A study of the world's pidgins and Creoles with special reference to the Pacific region; the origin and nature of pidgins and Creoles; the relationship of Hawaiian Creole English to other Creoles in the world; the link between the development of a Creole and language acquisition. Recommended: LING 102 or 121. (Same as ANTH 347 and ENG 347) (GenEd/IntReq: H/A/P)

LING 350 Second Lang Acquisition Theory (3) Current research and theories of learning a second or additional language from social, psychological and linguistic perspectives. Topics include the attainment of communicative competence, the critical period hypothesis, focus on form, individual learning styles, and learner autonomy. The emphasis is on how the knowledge of second language acquisition theory helps improve the quality of classroom language teaching. *Pre:* LING 102 or instructor's consent. (Same as ENG 350)

LING 351 Method Foreign Lang Tchng (3) Foreign language teaching and learning from the perspectives of theory and practice. The application of modern linguistics to specific problems confronting the teacher. *Pre:* LING 102 or instructor's consent.

LING 356 Language and Gender (3) Students engage in the analysis of gender as it relates to language and society. Provides students with analytic resources for thinking critically about the relationship between language and social practice. Students gather and analyze data based on current theories. (Same as ENG 356 and WS 356) *Pre:* ENG/ESL 100 or 100T and LING 102, or instructor's consent.

LING 410 Semantics & Pragmatics (3) Introduction to the fundamentals and modern theories of meaning, reference and the relations between language and knowledge of the world. Ways in which the interpretation of sentences in natural languages depends upon the literal meaning of propositions and their logical (semantic) and contextual (pragmatic) inferences. *Pre:* LING 102 or instructor's consent.

LING 412 Discourse Analysis (3) This course examines the structure of function of language as its actually used in different contexts, including newspaper articles, poetry, doctor-patient interactions, news broadcasts, classrooms, and court trials. Students also gain experience in gathering, presenting, and analyzing their own data.

LING 432 Critical Applied Linguistics (3) This course examines issues in applied linguistics such as language teaching, language learning, language policy, language ideology, linguistic human rights, and linguistic imperialism by considering indigenous language situations, dominant and minority languages as well as the notion of English as global language in order to appreciate the complex relationship between language and power. (GenEd/IntReq: GCC)

LING 434 Indigenous Languages of the US (3) This course surveys Indigenous languages of the US and the communities that speak them, focusing on a representative sample for closer study. The role of languages in maintaining cultural identity is examined and prospects for the future of Indigenous languages are assessed. *Pre:* LING 102

LING 442 Languages in Hawai'i (3) This course explores the linguistic situation of Hawai'i with a focus on the history, structure, and political situation of the diverse set of languages spoken in the Islands. Languages to be examined include, but are not limited to, Hawaiian, Hawaiian Creole English, Japanese, Chinese, Ilocano, Portuguese, and Korean. *Pre:* LING 102. (GenEd/IntReq: GCC, HPP)

LING 445 Explor Bilingual & Immers Ed (3) This course serves as a capstone course in Linguistics, offering students the opportunity to engage in in-depth research on a linguistics topic of their choice. Students first read articles and write reaction papers to those articles, then write a proposal describing and defending their topic choice, and next engage in research on their topic and produce an outline of their final paper. Then, at the conclusion of the semester, students present their papers to their peers and faculty and submit a research paper of at least 15 pages. *Pre:* LING 102, 311, and LING 321.

LING 451 Structure Of Japanese I (3) Phonology, morphology, syntax of modern colloquial grammar. (Same as JPNS 451). *Pre:* LING 102 and JPNS 202 or instructor's consent. (GenEd/IntReq: H/A/P)

LING 452 Structure Of Japanese II (3) Phonology, morphology, syntax of modern colloquial grammar. (Same as JPNS and JPST 452). *Pre:* LING 102 and JPNS 202 or instructor's consent. (GenEd/IntReq: H/A/P)

LING 490 Res and Methods in Linguistics (3) This course serves as a capstone course in Linguistics, offering student the opportunity to engage in in-depth research on a linguistic topic of their choice. Students first read articles and write reaction papers to those articles, then write a proposal describing and defending their topic choice, and next engage in research on their topic and produce an outline of their final paper. Then, at the conclusion of the semester, students present their papers to their peers and faculty and submit a research paper of at least 15 pages. *Pre:* LING 102, 311 and 321.

LING x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

LING x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

Management (MGT)

College of Business and Economics

MGT 300 Mgt, Orgs & Human Behavior (3) Survey of classical and modern management theory and practice. Management implications of organization theory. Basic concepts in work motivation, communication, group dynamics, leadership, organizational change, conflict, personality, and leadership. *Pre:* Admission to Professional Business Program, C or better in COM 251, QBA 260, ENG 209 or 287 or 215 or 225 or COM 141/WI, and BUS 290.

MGT 330 Human Resource Mgt (3) The contemporary theory and practice relating to the management of human resources; recruiting, selection, psychological testing, interviewing, job evaluation, performance review, training and development, wage and salary administration, benefit and service programs, and labor-management relations. *Pre:* Admission to Professional Business Program, C or better in MGT 300, and junior standing.

MGT 332 Org Behavior & Manage (3) The human relations movement; basic concepts in behavior pertaining to organizations including personality, motivation, leadership, communication, change, conflict, and group dynamics. Course includes the relationship of these concepts to performance, job satisfaction and organizational commitment.

Pre: Admission to Professional Business Program, C or better in MGT 300, COM 251, and ENG 209, 251, 225, or 287.

MGT 333 International Business Mgt (3) Provides a systematic introduction to international business management, drawing examples from Pacific Rim business and commerce. Course introduces multinational marketing and international aspects of personnel management, plus introductory material on international business financial transactions.

Pre: Admission to Professional Business Program, C or better in ECON 130 and MGT 300. (GenEd/IntReq: H/A/P, HPP)

MGT 341 Project Management (3) This course focuses on the technical and social aspects of project management. The basic principles of project management will be introduced to prepare students for possible Project Management Institute (PMI) certification. Topics covered include contract proposal, project definition and planning, identification and sequencing of project deliverables, automated scheduling, resource planning, cost estimation and budgeting, risk analysis, project tracking, building a project team and strategic issues of project management. Students will be assigned to teams to complete a project.

Pre: Admission to Professional Business Program and C or better in CS 201 or QBA 362.

MGT 379 Hist Of Entrepreneurship in Am (3) The role of entrepreneurship in developing the American business system from its European origins to its current global manifestations and its future prospects. Focus on the values, characteristics, and practices of entrepreneurs and on the changing relations over time between business, labor and government.

Pre: Admission to Professional Business Program. (Same as HIST 379)

MGT 423 Business & Society (3) Impact of business on society and the impact of the societal environment on business operations and decision making.

Pre: Admission to Professional Business Program, C or better in BUS 240, and C or better in MGT 300. (PHIL 323 may be substituted for this course in the professional core.)

MGT 425 Bus Planning for New Ventures (3) Development of a business plan for a new venture with attention to form of business organization; competitive advantage; accounting systems and controls; financial, marketing, human relations, operations and risk management; government regulation and compliance; social responsibility. Identification of sponsors and sources of help for small business.

Pre: Admission to Professional Business Program, C or better in COM 251, C or better in any 200-level ENG course, C or better in ECON 130 or BUS 100, and C or better QBA 260. (GenEd/IntReq: GCC)

MGT 490 Strategic Mgt (3) Integrative capstone course using concepts of strategy formulation, competitive analysis, and strategy implementation as models for problem solving and decision making in an organizational setting. Computer software applications are used to aid in comprehensive case analysis.

Pre: Admission to Professional Business Program, C or better in BUS 290, MGT 300, QBA 300, MKT 310, FIN 320 and senior standing.

MGT x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

MGT x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

Marine Science (MARE)

College of Arts and Sciences

MARE 100 Marine Option Program Seminar (1) Orientation to the Marine Option Program with statewide overview of ocean issues and organizations involved with marine activities, management, education, research, and business. Exploration of opportunities for internships, research projects, independent study and careers. Portions on HITS with participation of students and faculty from throughout the UH system. CR/NC only.

MARE 101L Intro Marine Sci Field Lab (2) (lab) A basic introduction to field techniques in marine science including: the use of marine charts, measuring bathymetry, marine sediment sampling, techniques for measuring salinity, temperature, and ocean circulation, plankton sampling and identification, marine fishes and invertebrates, and marine wildlife management techniques used in tagging sea turtles. Field trips required.

MARE 103 Marine Option Program Proposal (2) Introduction to the fundamentals of proposal writing and project development. Students will incorporate topics from MARE 100, identify a faculty mentor, and expand the project into a written proposal. This proposal is a prerequisite for the completion of a marine skills project required for the Marine Option Program Certificate.

Pre: MARE 100 or instructor's consent.

MARE 104 Marine Option Program Project (2) A continuation of the marine skills project proposed in MARE 103. Students conduct a marine skills project, required for the Marine Option Program Certificate, with the assistance of a faculty mentor and MOP coordinators. This course will provide strategies, methods, and techniques for successful project completion.

Pre: MARE 100, MARE 103 or instructor's consent.

MARE 105 Marine Option Presentation (1) A continuation of the marine skills project completed in MARE 104. Students expand their marine skills project, required for the Marine Option Program Certificate, into an oral or poster to be presented at the annual MOP symposium. This course will provide instruction on creating effective presentations, developing scientific posters, and explaining scientific results to both peers and the general public.

Pre: MARE 100, MARE 103, MARE 104, or instructor's consent.

MARE 110 Current Issues in Marine Sci (3) Introduction to marine science via the controversies and problems facing our ocean environment. Topics may include coastal population growth, sonar, fisheries, dolphin-safe tuna, cruise ship waste, global warming, mercury in fish, beach erosion, alien species, and coral reef decline. Designed for non-majors. This course applies toward general education requirements in the Natural Sciences.

MARE 140 Intro to Hawaiian Coral Reefs (3) Explore the underwater world of the Big Island of Hawai'i while learning about unique marine ecosystems found nowhere else on Earth. Students will acquire an appreciation for local aquatic fauna in the classroom including the basics of marine biology and natural history.

Pre: concurrent enrollment in MARE 140L required. (GenEd/IntReq: H/A/P, HPP)

MARE 140L Intro Hawaiian Coral Reefs Lab (1) (lab) Students will enter the natural laboratory that is Hawai'i and investigate coral reefs, coastal beaches and tide pool systems with mask, snorkel and fins. Learn to identify common marine inhabitants while enjoying an unparalleled educational experience under the sea. Concurrent enrollment in MARE 140 is required. (GenEd/IntReq: H/A/P, HPP)

MARE 156 Nat Hist & Conservatn Hawn Isl (3) The formation of the Hawaiian Islands, establishment and evolution of their native terrestrial and marine flora and fauna, and human impacts and conservation. (Same as BIOL 156). (GenEd/IntReq: H/A/P, HPP)

MARE 171 Marine Biology-Diversity (3) Marine organisms: classification, structure, physiology, ecology and adaptations to the marine environment. This course satisfies College of Arts and Sciences General Education Natural Science requirement.

MARE 171L Marine Biology Laboratory (1) (lab) Provide students with direct exposure to the biota of Hawai'i via laboratory and field trips to sites around Hilo. The course focuses on identification, natural history, and ecology of common marine organisms. *Pre:* Current or previous enrollment in BIOL/MARE 171. (Same as BIOL 171L)

MARE 172 Marine Biology-Cellular Proc (3) Introduction to the fundamentals of biology as they pertain to marine organisms. Principles of cell biology, molecular biology and biochemistry. Focuses are biological molecules, prokaryotic and eukaryotic cell structure and function, basic metabolism, and cellular processes. Emphases will be given to cellular level adaptations to marine environment.

Pre: High school Biology; or BIOL 101 and high school Chemistry; or CHEM 114 recommended.

MARE 201 Oceanography (3) Geological, chemical, physical and biological aspects of the ocean; structure, formation, and features of ocean basins; seawater's properties and their distribution; currents, waves; tides; characteristics of marine organisms; marine ecological principles.

Pre: Two high school or college science courses recommended.

MARE 201L Oceanography Lab (2) (lab) The basic techniques of oceanography including: marine charts and navigation, bathymetry, marine sediments, techniques for measuring salinity, temperature, dissolved oxygen, and surface and deep circulation, light and sound in seawater, wave dynamics, tides, plankton sampling and identification. In-class field trips required.

Pre: Concurrent or previous enrollment in MARE 201.

MARE 240 Small Boat Operations/Research (3) (lec., lab) This course is intended to provide the novice boater with skills needed to safely operate and conduct research from a small boat. Topics include: state and federal regulations, safety, navigation, small boat handling, and conducting research operations. The course will consist of lectures, lab sessions, and time on the water in a small boat. Participants must be able to swim. *Pre:* Instructor's consent.

MARE 250 Statistical Apps in Marine Sci (3) Hands-on approach to designing field experiments, collection of ecological data, analysis of data on computers using statistical methods, and presentation of results. Requires completion of a project using data collected in the field followed by the preparation of both written and oral reports. *Pre:* MARE/BIOL 171 or MARE 201, or instructor's consent.

MARE 264 Quest (3) The application of commonly utilized nearshore underwater ecological surveying techniques using SCUBA. Intensive two-week course combining lecture and field work. Data will be collected in the field, reduced, analyzed and presented in an oral report.

Pre: Authorization as a scientific diver in training before start of course and instructor's consent.

MARE 265 Marine Ecology and Evolution (3) Principles of ecology and evolution for Marine Science majors stressing integrative approach and recent advances. Topics include but are not limited to evolutionary mechanisms, macroevolution, systematics and the origin of life, population and community ecology and ecological processes, marine communities, dispersal, biodiversity and biogeography.

Pre: MARE 171/171L, MARE 172 and MARE 201 or instructor's consent.

MARE 282 Global Change (3) Principal components of global change and impacts on the marine environment. Course focuses on the interdisciplinary nature of global change and interrelationships to biological, physical, anthropological, economic, and political concepts.

Pre: College-level science course.

MARE 282L Global Change Lab (1) (lab) Elements of global change in the physical, chemical and biological properties of the Hawaiian Islands using laboratory exercises and field trips. Involves shipboard water sampling and analysis, snorkeling on coral reefs, and hiking in rain forests.

Pre: MARE 282 or concurrent enrollment.

MARE 310 The Atoll Ecosystem (3) Formation, structure, distribution, oceanography, biota and ecology of atolls. Human interactions, historical and modern, with atoll ecosystems. Atoll resource management issues and actions. (GenEd/IntReq: H/A/P, HPP)

Pre: MARE/BIOL 171, MARE 201, or BIOL 156 or instructor's consent.

MARE 325 Coral Reef Ecology (3) Provides a background in evolutionary and natural history of tropical reefs, coral reef community structure and interactions, and coral reef ecosystem processes/functions. Students will learn ecology of Hawaiian and global coral reefs. Students will review information on the increasingly important conservation issues related to tropical reef systems and review present management strategies employed.

Pre: C- or better in MARE 265 or instructor's consent.

MARE 350 Coastal Methods and Analyses (3) Planning of field and laboratory data collection and experimentation in the coastal environment. Course covers hypothesis development, experimental design, statistical analysis of data, data interpretation, scientific writing, and presentations. Offered Fall semester only.

Pre: junior standing; a grade of C- or better in MARE 201, BIOL/ MARE 250; MARE 265; CHEM 125, and must be taken concurrently with MARE 350L.

MARE 350L Coastal Methods & Analyses Lab (2) (lab) Implementation of field and laboratory data collection and experimentation in the coastal environment. Techniques include measuring geological, chemical and physical coastal properties; estimating the abundance and diversity of plankton, nekton, and benthos; and use of modern data recording and analyzing systems. Offered fall semester only.

Pre: junior standing; a grade of C- or better in MARE 201, BIOL/MARE 250; MARE 265; CHEM 125; must be taken concurrently with MARE 350.

MARE 353 Pelagic Methods and Analyses (3) Planning of field and laboratory data collection and experimentation in the neritic and pelagic marine environment from an oceanographic vessel platform. Course covers hypothesis development, experimental design, statistical analyses of data, data interpretation, scientific writing, and presentations. Offered Spring semester only.

Pre: junior standing; a grade of C- or better in MARE 201; BIOL/MARE 250; MARE 265; CHEM 125; must be taken concurrently with MARE 353L.

MARE 353L Pelagic Methods & Analyses Lab (2) (lab) Implementation of field and laboratory data collection and experimentation in the neritic and pelagic marine environment from an oceanographic vessel platform. Techniques include measuring geological, chemical, and physical properties; estimating the abundance and diversity of plankton, nekton and benthos; and use of modern data recording and analyzing systems.

Pre: junior CHEM 125; MARE 265. Must be taken concurrently standing; C- or better in MARE 201; BIOL/MARE 250; with MARE 353. Offered Spring Semester only.

MARE 360 Marine Resources (3) A survey of human use of the marine environment including physical and biological resources. Topics covered include: fisheries, mariculture, marine mineral and energy resources, chemical resources of sea water, the use of coastal Islands and waste disposal in the sea.

Pre: MARE 201 or BIOL/MARE 171, or instructor's consent. (Same as BIOL 360)

MARE 364 Advanced Quest (3) Students lead a dive team learning underwater ecological surveying techniques; supervise field data collection, data reduction and analysis, and team presentation of written and oral reports; and assist in training students in identification of marine organisms. *Pre:* BIOL/MARE 264, authorization as a scientific diver in training before start of course, and instructor's consent. Student receives CR/NC for the course.

MARE 366 Trop Marine Research Investiga (3) Research projects on marine-related problems. Students will do a literature search; develop experimental design; collect, reduce and analyze data; do a written final report; and present findings at a symposium. Projects will be selected from a list of topics or can be original with the consent of the instructor.

Pre: instructor's consent (Same as BIOL 366).

MARE 371 Biology Of Marine Invertebrate (3) A survey of the major groups of invertebrates focusing on those dominant in the marine environment. Students will learn methods used to identify and classify invertebrates and will survey the anatomy, physiology, and natural history of the major groups. (Same as BIOL 371).

Pre: MARE 265 or BIOL 176 or equivalent, and concurrent enrollment in MARE 371L.

MARE 371L Bio Of Marine Invertebrate Lab (1) (lab) The course will provide direct exposure to the major groups of invertebrates in the marine environment through laboratory exercises and field trips around the island. Students will learn to identify and classify invertebrates and will survey the anatomy and natural history of the major groups. (Same as BIOL 371L).

MARE 372 Biology Of Marine Plants (3) Diversity, distribution and ecology of marine macroalgae and seagrasses. Students will learn methods to identify common marine plants of the Hawaiian Islands and the tropical Pacific. Marine plants and their relation to human affairs will be discussed.

Pre: MARE/BIOL 171 or BIOL 175 or instructor's consent. Concurrent enrollment in MARE 372L.

MARE 372L Biology of Marine Plants Lab (1) (lab) Laboratory activities relating to the taxonomy, biology, chemistry, physiology and human uses of seaweeds and seagrasses. Includes field trips.

Pre: concurrent enrollment in MARE 372.

MARE 380 Nat. Hist. of Sharks and Rays (3) This course will examine the natural history of the Elasmobranchs, an ancient group of fishes that have existed for almost 450 million years. Comprehensive investigations of sharks, rays, skates, sawfishes, and chimera, along with representative species from Hawai'i, will be conducted. Subjects will include evolution, taxonomy, anatomy, physiology, ecology, conservation and management of these unique animals. Discussions of current research papers along with group research projects will be covered during lectures

Pre: MARE 171 or instructor's consent.

MARE 380L Nat. Hist. of Sharks Lab (1) (lab) This course will further examine Elasmobranchs using a hands-on approach to compliment the work done in Lecture using both laboratory and field-based activities. Laboratory sessions will involve detailed dissections of shark, ray, skate, and chimera functional anatomy. Students will also participate in a tagging study of coastal shark species throughout the Big Island of Hawai'i.

Pre: Concurrent enrollment in MARE 380.

MARE 390 Biology of Marine Mammals (3) Comprehensive investigation of a diverse group of highly adapted marine vertebrates. Whales, dolphins, porpoises, seals, sea lions, walrus, manatees, dugongs, sea otters and polar bears will be covered. Focus will be on taxonomy, anatomy and physiology, behavior, reproductive ecology, adaptations to the marine environment, and conservation and management.

Pre: MARE 171 or instructor's consent.

MARE 390L Biol of Marine Mammals Lab (1) (lab) Field and lab techniques employed by professional marine mammal biologists including shore and boat-based surveys, photo-identification, and acoustic sampling. Investigations will focus on local species of marine mammals.

Pre: MARE 390 or concurrent enrollment.

MARE 405 Watersheds (3) This course is designed to provide a mountain to ocean overview of tropical and temperate watersheds with regards to their hydrology, geology, biogeochemistry, and ecology, as well as their function in maintaining environmental quality in freshwater, coastal, and marine ecosystems. Natural and human disturbances to watersheds will be examined, as well as their impacts on watershed function and downstream riparian, coastal, and marine environments. Restoration and management of watersheds to improve freshwater and coastal environmental quality will be discussed.

Pre: CHEM 125.

MARE 410 Marine Debris in the Pacific (3) Scientific study of marine debris issues in the Pacific Ocean, including sources, dispersal, distribution, degradation, effects, persistent organic pollutants, plastic additives, monitoring efforts, and solutions.

Pre: MARE 171 and MARE 201, or instructor's consent. (GenEd/IntReq: H/A/P)

MARE 425 Chemical Oceanography (3) Chemical processes occurring in marine and estuarine waters and their impact on the nearshore and oceanic environments. Topics include: salinity, chlorinity, major and minor elements, and dissolved gases in seawater; macro and micronutrients, dissolved and particulate organic matter; geochemistry of marine sediments; radiometric dating and stable isotopes as water mass tracers.

Pre: C- or better in CHEM 125 and MARE 201.

MARE 434 Teaching Marine Science (3) Marine science concepts and teaching strategies for pre-service and inservice teachers. Includes geological, chemical, physical and biological topics.

Pre: MARE/BIOL 171, MARE 201, and MARE 265. (GenEd/IntReq: GCC)

MARE 435 Marine Field Exper Tchrs (3) Training for pre-service and inservice teachers in marine science field experiences content and strategies. Includes geological, chemical, physical and biological topics.

Pre: MARE/BIOL 171, MARE 201, and MARE 265. (GenEd/IntReq: GCC)

MARE 440 Physical Oceanography (3) Topics in physical oceanography include: distribution of water characteristics in the ocean; dynamics of circulation; water masses; wave characteristics including formation, propagation, dispersion and refraction; dynamic and equilibrium theories of tides as well as tsunami, seiche, and internal waves; sound and optics; and the latest methods and instrumentation in physical oceanography.

Pre: MARE 201, MATH 205, PHYS 170/170L, or PHYS 106/170L, and instructor's consent. Recommended: MATH 206.

MARE 444 Biological Oceanography (3) This course focuses on the interaction of phytoplankton, zooplankton, and pelagic organisms in the open ocean environment. Students will learn aspects of plankton taxonomy, physiology, and pelagic population dynamics. Students will survey the current research status of the field using primary literature. The student's knowledge will then be applied to the study of local and global productivity and trophodynamics.

Pre: junior standing, MARE 265 and CHEM 125 or instructor's consent.

MARE 445 Marine Microbial Ecology (3) Marine microorganisms in a diversity of roles within the marine environment including microbial food webs, biogeochemical cycling, symbioses as well as host-pathogen interactions, extreme environments and bioremediation. Microbial interactions in tropical and temperate systems are presented.

Pre: MARE 265 or instructor's consent.

MARE 446 Phytoplankton (3) Phytoplankton are the microbial primary producers in marine ecosystems and are sensitive indicators of the ecosystem change. The lecture section will give students baseline information on phytoplankton ecology and their roles in marine ecosystems. We will also discuss phytoplankton in the context of global environmental change. Corequisite: 446L.

Pre: MARE 250 and MARE 265.

MARE 446L Phytoplankton Ecology Lab (2) (lab) Phytoplankton are the microbial primary producers in marine ecosystems and are a sensitive indicator of ecosystem change. This laboratory and field-based course will give students hands-on experience with the theory and techniques of phytoplankton ecology. Corequisite: MARE 446.

Pre: MARE 250 and MARE 265.

MARE 460 Marine Conservation (3) Concepts and issues in marine conservation and marine resource management. Topics include resource exploitation, invasive species, eutrophication, marine pollution and global climate change. Ecological impacts of resource depletion, environmental modification, and biodiversity loss will be discussed along with methods used to address impacts.

Pre: C- or better in MARE 265 or instructor's consent.

MARE 461 Geological Oceanography (3) A detailed study of the ocean floor to include marine stratigraphy, plate tectonics, oceanic sediments and paleoceanography.

Pre: MARE 201, GEOL 111 and one of CHEM 124, 125 or MARE 440, or instructor's consent.

MARE 470 Senior Thesis Research (3) Practical experience in designing and completing a marine-related research project. Students will submit project proposals for evaluation and approval. Once approved, students will do a thorough literature review, develop an experimental design, collect and record data and present preliminary results.

Pre: MARE 265, MARE 350 or 353 and ENG 225 or instructor's consent.

MARE 471 Senior Thesis Report (3) Second-semester continuation of MARE 470.

Students finish their research projects and prepare a final oral and written report.

Pre: MARE 470. (GenEd/IntReq: GCC)

MARE 480 Senior Internship (3) Applications of knowledge and skills in public, private, or government agency involved in marine science education or research.

Pre: junior or senior class standing, instructor's consent, and preapproved placement. (GenEd/IntReq: GCC)

MARE 484 Biology Of Fishes (3) The biology of marine and freshwater fishes. Topics covered include: general anatomy, locomotion, respiration, osmoregulation, sensory systems, reproduction, electrosensitive and electrogenic fishes, coloration and bioluminescence in fishes, genetic interrelationships.

Pre: C- or better in BIOL/MARE 171 or BIOL 175 or their equivalent; C- or better in MARE 265 or equivalent; or instructor's consent. (Same as BIOL 484)

MARE 484L Biology Of Fishes Laboratory (1) (lab) Anatomy of jawless, cartilaginous and bony fishes. Review of common local reef fishes. Optional laboratory and field trips for Biology of Fishes. (Same as BIOL 484L).

MARE 488 Kū'ula: Integrated Science (3) This course will compare content, context, and methodology of Native Hawaiian and Western sciences and explore ways to apply both to understand the environment of Hawaii. Students will be exposed to scientific knowledge and endeavors of Native Hawaiians through field trips and will also explore ways to integrate sciences to address research and management issues facing Hawai'i today.

Pre: MARE 250 or equivalent and instructor's consent. (GenEd/IntReq: GCC)

MARE 490 Marine Reptile Conserv Ecology (3) All-encompassing look at the natural history of these ancient marine vertebrates. Topics include investigations of sea turtles, sea snakes, saltwater crocodiles and marine iguanas throughout the world. Subjects will consist of conservation and management, human impacts, reproductive and feeding ecology, evolution, taxonomy, and anatomy and physiology of these unique marine animals.

Pre: MARE 265 or equivalent or instructor's consent.

MARE 490L Marine Reptile Conserv Ecol Lab (1) (lab) Field and lab techniques employed by sea turtle biologists including shore and underwater photo-surveys, forage surveys, and evaluation of nests and hatchlings. Investigations will focus on local species of sea turtles.

Pre: MARE 490 or concurrent enrollment.

MARE 495 Senior Seminar (3) Lectures, discussions, and research reports of topics in marine science presented by faculty, students, invited speakers, and visiting scholars. Students will be expected to present a seminar, as well as participate in other course activities.

Pre: senior standing or instructor's consent.

MARE 496 Tchg Asst & Tutorng in Mare (1-3) (lab) Practice in individual tutoring, and in the preparation of the selected topics in Marine Science lecture or laboratory courses, under direct instructional supervision. This course may be repeated for a maximum of 6 credits and may not be used to replace any specific course or elective requirements of the Marine Science major.

Pre: supervising instructor and department chair consent.

MARE x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

MARE x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

Marketing (MKT)

College of Business and Economics

MKT 310 Princ Of Marketing (3) Fundamental marketing concepts and contemporary marketing issues are analyzed within present economic, social and legal environments; consumer and functional analysis are emphasized.

Pre: Admission to Professional Business Program, C or better in ECON 130, ACC 201 and BUS 290.

MKT 311 Marketing Management (3) Planning, evaluation, and control of the marketing function. Procedures for developing the analysis and solution to common marketing management problems involving pricing, distribution, product development and promotion.

Pre: Admission to Professional Business Program, and MKT 310.

MKT 313 Promotional Strategy (3) The role of promotion in an organization's communication processes from a theoretical and managerial perspective. Advertising, personal selling and sales promotion are analyzed from the view of both the organization and its consumer groups.

Pre: Admission to Professional Business Program, MKT 310 and junior standing.

MKT 315 Consumer Behavior (3) An integrated framework for understanding consumer behavior from a marketing perspective. Course focuses on environmental issues, as well as consumer decision processes.

Pre: Admission to Professional Business Program and MKT 310.

MKT 319 Market Research (3) An overview of the marketing research process as part of an organization's decision support systems. Topics include research design, attitude measurement, along with data sources, collection and analysis. A research application component will emphasize the planning, execution, and analysis of a real-world marketing research project.

Pre: Admission to Professional Business Program, MKT 310 and QBA 260.

MKT 333 International Marketing (3) Focused on identifying and satisfying global customer needs better than the competition, both domestic and international, and coordinating marketing activities within the context of the global environment.

Pre: Admission to Professional Business Program, MKT 310, or instructor's consent. (GenEd/IntReq: H/A/P)

MKT 351 Personal Selling (3) This course includes the principles of personal selling for both industrial and retail sales persons covering topics of prospecting, approaching, presenting, closing and follow-up. A major emphasis is placed on understanding the customer's needs and contributing to the success of the customer, with a focus on building long-term relationships based on trust.

Pre: MKT 310 and Admission to Professional Business Program.

MKT x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

MKT x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

Mathematics (MATH)

College of Arts and Sciences

MATH 100 Survey Of Math (3) Survey of Mathematics course is intended primarily for non-science liberal arts majors to satisfy the university's quantitative reasoning requirement. Core topics include mathematical logic and mathematical thinking and problem solving. Additional topics may include number systems, computers, algebra, and probability.

Pre: None.

MATH 103 Intro to College Algebra (3) For students who need to improve algebraic skills prior to taking Pre-calculus or Applied Calculus, or for courses in Introductory Chemistry, Physics or Statistics. Topics include exponents and radicals, factoring, systems of equations, linear equations, quadratic equations, general properties of functions, graphing, polynomial functions, exponential and logarithmic functions.

MATH 104 Precalculus Math (4) MATH 104 is an intensive one semester course on the material covered in the sequence MATH 104F-104G. A student may not receive credit for both MATH 104 and MATH 104F-104G.

Pre: B+ or better in MATH 103, or C or better in MATH 104F, or an appropriate recommendation on the Math Placement Test.

MATH 104F Precal I: Functions (3) MATH 104F is the first course in a year long sequence intended to prepare students for first year calculus. Topics include general properties of functions, polynomial and rational functions, and exponential and logarithmic functions.

Pre: C or better in MATH 103 or an appropriate recommendation on the Math Placement Test.

MATH 104G Precal II: Trig & Geom (3) MATH 104G is the second course in a year long sequence intended to prepare students for first year calculus. Topics include Trigonometric functions and their properties, analytic trigonometry, an introduction to polar coordinates, parametric functions, and complex numbers.

Pre: C or better in MATH 104F, or an appropriate recommendation on the Math Placement Test.

MATH 111 MS Office Tools for Math & Sci (3) Use of symbols, equations, images in scientific documents. Computations using spreadsheets with sums, averages, and scientific functions. Data analysis curve fitting, interpolation, statistics. Data presentation: visualization, charts, and graphs. Symbolic computation. Database processing: forms, queries, reports, VBA. Additional topics chosen from: real-time data acquisition, more advanced statistical methods, system simulation. Intended for science majors.

Pre: Recommendation in Math Placement Test. (Same as CS 102)

MATH 115 Applied Calculus (3) (lec., lab) The course emphasis is on computations and applications to Business and Life Sciences. Topics include derivatives, curve sketching, optimization, exponential and logarithmic functions, integration and applications in these areas.

Pre: C or better in MATH 103, or recommendation from the Math Placement Test.

MATH 121 Intro Stats & Prob (3) Basic topics in statistics and probability. *Pre:* Recommendation in Math Placement Exam.

MATH 205 Calculus I (4) (lec., lab) First half of a standard first year calculus sequence intended primarily for Natural Science majors. Topics include differential calculus, applications, and an introduction to integration.

Pre: C or better in MATH 104 or MATH 104G, or an appropriate recommendation on the Math Placement Test.

MATH 206 Calculus II (4) (lec., lab) Second semester of a standard first year calculus sequence intended primarily for Natural Science majors. Topics include applications of the definite integral, techniques of integration, an introduction to differential equations, and infinite series.

Pre: C or better in MATH 205.

MATH 231 Calculus III (3) Introduction to calculus of functions of several variables. Topics include partial differentiation; gradient, divergence, curl, and multi-variable optimization.

Pre: C or better in MATH 206.

MATH 232 Calculus IV (3) Introduction to calculus of functions of several variables. Topics include multiple integrals, line integrals, and surface integrals; Green's Theorem and Stoke's Theorem.

Pre: C or better in MATH 231.

MATH 300 Ordinary Diff Equations (3) Theory and methods of solutions of ordinary differential equations and systems of linear differential equations with constant coefficients. Power series solutions, Laplace transforms, and applications.

Pre: C in MATH 206.

MATH 301 Partial Differential Equatns (3) Construction and behavior of solutions of partial differential equations in physical and engineering applications, classical equations of mathematical physics, initial and boundary value problems, and eigenvalue problems.

Pre: C in MATH 300 and MATH 231. Recommended: MATH 232 or concurrent.

MATH 303 Complex Variables W/ Apps (3) Introduction to the theory of functions of a complex variable. Analytic functions, Riemann surfaces, complex integration, Taylor and Laurent series, residue theory, Cauchy-Riemann equations, Cauchy's Theorem and its applications, conformal mapping.

Pre: C or better in MATH 231. Recommended: C or better in MATH 232.

MATH 304 Complex Variables W/ Apps (3) Introduction to the theory of functions of a complex variable. Analytic functions, Riemann surfaces, complex integration, Taylor and Laurent series, residue theory, conformal mapping. Applications to scientific problems of interest.

Pre: MATH 303.

MATH 310 Discrete Mathematics (3) Topics from discrete mathematics, including logic, proof techniques, recurrence relations, set theory, combinatorics, relations, functions, graphs, Boolean algebraic structures and applications to coding theory. Not open to students with credit in CS 215.

Pre: MATH 206.

MATH 311 Intro Linear Algebra (3) Algebra of matrices, linear equations, vector spaces, linear transformations, eigenvalue, eigenvector problems, diagonalization and basic applications.

Pre: C in MATH 310 or CS 215.

MATH 314 Topology (3) A study of topological spaces and their continuous functions. A focus on properties of topologies, including compactness, Hausdorff, and connectedness. The construction of topologies, including the metric, quotient, product, and subspace topologies. Additional topics include manifold theory and functional analysis.

Pre: C or better in MATH 231.

MATH 317 Intro To Theory Of Equations (3) Algebraic systems as related to solutions of polynomial equations, division algorithms and factorization for polynomials and integers, fundamental theorem of algebra, and related topics from elementary number theory including linear congruencies and rings of residue classes.

Pre: C or better in MATH 310 or instructor's consent.

MATH 360 Mathematical Physics (3) Special functions of mathematical physics which arise from Sturm-Liouville equations: Bessel, beta, elliptical, gamma and Legendre functions. Generating functions, complex integral representations. Other topics may include integral transforms, Fourier analysis and linear algebra.

Pre: MATH 232, or MATH 231 and 300.

MATH 380 Chaos (3) An introduction to nonlinear dynamical systems for science majors. Topics include dynamics in one and several dimensions, stability, excitable media, fractals, and time series analysis. Applications in physics, chemistry, ecology and other fields are illustrated. (Same as PHYS 380)

Pre: C or better in MATH 206 and C or better in PHYS 171 or Math 232.

MATH 407 Intro To Numerical Analysis I (3) Solutions of equations in one variable, direct and iterative methods for systems of linear equations, the algebraic eigenvalue problem, interpolation and polynomial approximation, error analysis and convergence for specific methods. Offered spring semester. (Same as CS 407)

Pre: C in MATH 206 and MATH 311 and programming experience. .

MATH 408 Intro To Numerical Analysis II (3) A continuation of MATH 407. Topics will include approximation theory, numerical integration and differentiation, solution of systems of nonlinear equations, numerical solutions to differential equations.

Pre: C in MATH 407. (Same as CS 408).

MATH 421 Elem Probability Theory (3) Sets, sample spaces, combinatorial probability, random variables, mathematical expectation, classical distributions applications.

Pre: C or better in MATH 231 and concurrent registration in MATH 232.

MATH 422 Elementary Math Statistics (3) Statistical inference, estimation, hypothesis testing, regression, correlation, introduction to analysis of variance.

Pre: C in MATH 421 or instructor's consent.

MATH 431 Real Analysis I (4) A study of the basic concepts and theorems underlying classical analysis, including the topology of "R", uniform convergence, and differential and integral calculus.

Pre: C in MATH 232.

MATH 432 Real Analysis II (4) A study of the basic concepts and theorems underlying classical analysis, including the topology of "R", uniform convergence, and differential and integral calculus.

Pre: C in MATH 232.

MATH 441 Geometry I (3) The course is specifically designed for future Math teachers. Emphasis is equally split between content and pedagogy of teaching high school Geometry. Topics include: foundations of Geometry, formal direct and indirect geometric proofs, geometric constructions, Euclidean Geometry in 2D and 3D. Pedagogy topics include: learning and practicing different teaching methods and techniques, developing lesson plans, teaching experience in a real classroom environment.

Pre: C in MATH 231 and MATH 311 or instructor's consent.

MATH 442 Geometry II (3) Axiomatic system-independence and consistency, advanced concepts in Euclidean geometry, elements of non-Euclidean geometries: spherical, elliptic, hyperbolic, introduction to classical Riemann geometry and modern geometry of manifolds.

Pre: C or better in MATH 441 or instructor's consent.

MATH 454 Modern Algebra I (3) Theory of groups, rings, and fields. Polynomial rings, unique factorization, and Galois Theory.

Pre: C or better in MATH 310 and MATH 311 or instructor's consent.

Recommended: MATH 317 and PHIL 345.

MATH 455 Modern Algebra II (3) This course is a continuation of Modern Algebra I.

Pre: C or better in MATH 454.

MATH 495A Seminar (1) Seminar presentations of topics in the physical sciences by faculty, enrolled students and invited speakers. The first semester (495A) is taken CR/NC; in the second semester (495B), students are required to present a seminar for a letter grade.

Pre: senior standing or instructor's consent. (Same as ASTR 495A-495B, GEOL 495A-495B, CHEM 495A-495B and PHYS 495A-495B.)

MATH 495B Seminar (1) Seminar presentations of topics in the physical sciences by faculty, enrolled students and invited speakers. The first semester (495A) is taken CR/NC; in the second semester (495B), students are required to present a seminar for a letter grade.

Pre: senior standing or instructor's consent. (Same as ASTR 495A-495B, GEOL 495A-495B, CHEM 495A-495B, and PHYS 494A-494B.)

MATH 496 Tchg Assist & Tutoring Math (1-3) Practice in individual tutoring and in the preparation of the selected topics in mathematics lecture or laboratory courses, under direct instructional supervision. This course may be repeated for a maximum of 6 credits and may not be used for substitution for any specific course or elective requirements of Mathematics major.

Pre: consent of the supervisor and the department chair.

MATH x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

MATH x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

Military Science (MSL)

College of Arts and Sciences, Political Science Department

MSL 101 Intro to Military Science I (3) (lec., lab) Introduces students 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, officership, and the Army profession. Focus on developing basic knowledge and comprehensive of Army leadership while understanding the ROTC program, its purpose in the Army, and its advantages for the student.

MSL 102 Intro to Military Science II (3) (lec., lab) Expansion of MSL 101 and provides an overview of leadership fundamentals such as setting direction, problem solving, listening, presenting briefs, providing feedback and using effective writing skills. Explores leader values, skills, attributes, and actions in the context of practical, hands-on, and interactive exercises. Faculty Cadre serve as role models and facilitate building strong relationships among common experiences and practical interaction.

MSL 201 Interm Military Science I (3) (lec., lab) Explores creative and innovative tactical leadership strategies and styles through historical case studies and engaging in interactive student exercises. Cadets practice aspects of personal motivation and team building by planning, executing, and assessing team exercises. Focus is on continued development of leadership values and attributes through understanding of rank, uniform, customs and courtesies.

MSL 202 Interm Military Science II (3) (lec., lab) Expansion of MSL 201 and explores challenges of leading in complex, contemporary operational environments. Dimensions of cross-cultural challenges of leadership in a constantly changing world are highlighted and applied to practical Army leadership tasks and situations. Cadets develop greater self awareness as they practice communication and team building skills, the Army Troop Leading Procedures and Field Order, and small unit tactics in real world scenarios.

MSL x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

MSL x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

Music (MUS)

College of Arts and Sciences, Performing Arts Department

MUS 102 University Chorus (2) Large ensemble singing of various genres of choral music including classical, choral/orchestral, traditional, and world. Study of composers and compositional styles from selected periods of music. Public performance required. No audition required. May be repeated for credit as many times as desired.

MUS 123 Elementary Voice Class I (1) Fundamentals of voice production applied to vocal literature at elementary level.

MUS 124 Elem Voice Class II (1) A continuation of MUS 123. Refinement of vocal skills; study and performance of vocal literature in English and other languages. *Pre:* MUS 123.

MUS 125 Class Piano I (1) Basic principles of piano performance. Relevant problems in piano literature at elementary level. This course is designed for music majors (or intended music majors) only.

Pre: MUS 180 or placement conference.

MUS 126 Class Piano II (1) A continuation of MUS 125. Application of harmonic concepts and basic keyboard techniques. Expanding repertoire of pieces at the elementary level.

Pre: MUS 125.

MUS 131 Intro To Applied Music (1) Individual instruction in solo vocal or instrumental performance for non-music majors and music majors in secondary performance field. May be repeated for credit. Individual instruction given in voice, piano, wind instruments, and percussion.

MUS 135 First-Level Applied Music (1-2) For music majors or performers of considerable experience. Individual instruction given in voice, piano, wind instruments, and percussion. Instruction is given in individual lessons for music majors and minors. One (1) credit consists of one half-hour lesson per week for 13 weeks of the semester. Two (2) credits may be earned by taking either two half-hour lessons per week, or one (1) one-hour lesson per week. Applied Music fees are in addition to regular tuition. For Applied Music courses and fee structure, see Performing Arts department chair and consult instructor at the time of registration. Students are required to participate in student recitals and juries.

MUS 136 First-Level Applied Music (1-2) For music majors or performers of considerable experience. Individual instruction given in voice, piano, wind instruments, and percussion. Instruction is given in individual lessons for music majors and minors. One (1) credit consists of one half-hour lesson per week for 13 weeks of the semester. Two (2) credits may be earned by taking either two half-hour lessons per week, or one (1) one-hour lesson per week. Applied Music fees are in addition to regular tuition. For Applied Music courses and fee structure, see Performing Arts department chair and consult instructor at the time of registration. Students are required to participate in student recitals and juries.

MUS 141 Computer Music (3) Music production on a computer. The functionalities and capabilities of music software including virtual instruments and effects. The relationship of available music technology with musical trends and the music industry.

MUS 160 Intro to Music Literature (3) Appreciation of western art music through discussion, listening and reading. Study of elements, textures, forms and style characteristics. No previous music knowledge required.

MUS 163 American Music & Popular Cult (3) A survey of American musical styles of the 20th century, including rock, blues, jazz, country, Motown, R & B, and other folk idioms, as well as American art music. Emphasis will be on stylistic evolution, interactions, and social context. No previous musical knowledge is required.

MUS 165 Introduction To Jazz (3) A survey of classic and modern jazz in a historical framework. Study of elements, trends, genres, forms and style characteristics. Appreciation of jazz through discussion, listening and reading. No previous musical knowledge is required.

MUS 175 Intro Music Of Polynesia (3) A general survey of the traditional and acculturated music of eight major Polynesian island groups: Tonga, Samoa, New Zealand, Cook Islands, Society Islands, Marquesas Islands, Easter Island, and Hawai'i. Music is viewed as both an organization of sound and as a product of culture and people. (Same as HWST 175). (GenEd/IntReq: H/A/P, HPP)

MUS 176 Hist & Dev Of Hawa Music (3) A general survey of the interrelationships of traditional and acculturated Hawaiian music. Vocal music genres to be discussed include: chant; Christian hymn singing; secular choral singing; male and female falsetto singing; Chalangalang; Hapa Haole; and contemporary. Instrumental music genres include: pre-European instrumental styles; slack key guitar; 'ukulele; and steel guitar. (Same as HWST 176). (GenEd/IntReq: H/A/P, HPP)

MUS 180 Elementary Music Theory (3) Designed for non-music majors. Aural skills and musical notation: pitch, rhythm, tonality, and chord structure. First experiences at the piano also included.

MUS 185 Music Theory I (3) Designed for those with sufficient musical background. Basic concepts and materials of music. General awareness of musical styles, with concentration on 18th-century norms. Principles of tonality, harmony, 4-part writing. Connecting sound and notation through writing.

Pre: Placement conference. Must be taken concurrently with MUS 185L.

MUS 185L Music Theory I Lab (1) (lab) Connecting sound and notation through analysis, aural dictation, and sight singing.

Pre: concurrent enrollment with MUS 185.

MUS 186 Music Theory II (3) Emphasis on harmonic aspects of tonal music, including all diatonic triads, dominant seventh and secondary dominants, small forms, increased application through analysis and writing.

Pre: MUS 185 and MUS 185L; concurrent enrollment with MUS 186L.

MUS 186L Music Theory II Lab (1) (lab) Increased application of aural skills through analysis, dictation, and sight-singing. Reinforces concepts presented in MUS 186.

Pre: MUS 185 and 185L and concurrent enrollment with MUS 186.

MUS 225 Music Synthesis (3) The use of computer-controlled synthesizers in musical composition, recording and performance; Music Instrument Digital Interface procedures and applications.

Pre: MUS 126 and MUS 131C (Applied Music/Piano) or conference.

MUS 235 Second-Level Applied Music (1) For music majors or performers of considerable experience. Continuation of MUS 135-136. Instruction is given in individual lessons for music majors and minors. One (1) credit consists of one half-hour lesson per week for 13 weeks of the semester. Two (2) credits may be earned by taking either two half-hour lessons per week, or one (1) one-hour lesson per week. Applied Music fees are in addition to regular tuition. For Applied Music courses and fee structure, see Performing Arts department chair and consult instructor at the time of registration. Students are required to participate in student recitals and juries.
Pre: MUS 136.

MUS 236 Second-Level Applied Music (1) For music majors or performers of considerable experience. Continuation of MUS 135-136. Instruction is given in individual lessons for music majors and minors. One (1) credit consists of one half-hour lesson per week for 13 weeks of the semester. Two (2) credits may be earned by taking either two half-hour lessons per week, or one (1) one-hour lesson per week. Applied Music fees are in addition to regular tuition. For Applied Music courses and fee structure, see Performing Arts department chair and consult instructor at the time of registration. Students are required to participate in student recitals and juries.
Pre: MUS 136.

MUS 285 Music Theory III (3) Wider awareness of musical styles; concentration on chromaticism of the 19th century. Diatonic 7th, N6, Aug6, altered dominants, chromatic mediants, 9th, 11th and 13th chords. Large formal designs and advanced melodic/harmonic developments. Examined through analysis and writing.
Pre: MUS 186, 186L and concurrent enrollment in MUS 285L.

MUS 285L Music Theory III Laboratory (1) (lab) Expanded concepts in aural dictation and sight-singing. Reinforces concepts presented in MUS 285.
Pre: MUS 186, 186L and concurrent enrollment with MUS 285.

MUS 286L Music Theory IV Lab (1) (lab) Expanded concepts in aural dictation and sight-singing.
Pre: MUS 285 and 285L.

MUS 325 Arranging/Transcription (3) The use of Macintosh computers and MIDI keyboards in the arrangement and transcription of several musical works for different media.
Pre: MUS 186, 225, or instructor's consent.

MUS 335 Third-Level Applied Music (1-2) For music majors or performers of considerable experience. Continuation of MUS 235-236. Instruction is given in individual lessons for music majors and minors. One (1) credit consists of one half-hour lesson per week for 13 weeks of the semester. Two (2) credits may be earned by taking either two half-hour lessons per week, or one (1) one-hour lesson per week. Applied Music fees are in addition to regular tuition. For Applied Music courses and fee structure, see Performing Arts department chair and consult instructor at the time of registration. Students are required to participate in student recitals and juries.
Pre: MUS 236.

MUS 336 Third-Level Applied Music (1-2) For music majors or performers of considerable experience. Continuation of MUS 235-236. Instruction is given in individual lessons for music majors and minors. One (1) credit consists of one half-hour lesson per week for 13 weeks of the semester. Two (2) credits may be earned by taking either two half-hour lessons per week, or one (1) one-hour lesson per week. Applied Music fees are in addition to regular tuition. For Applied Music courses and fee structure, see Performing Arts department chair and consult instructor at the time of registration. Students are required to participate in student recitals and juries.
Pre: MUS 236.

MUS 349 Orchestration (3) Survey of instruments of the orchestra and band. Study of selected scores. Basic principles of scoring and transcribing for the orchestra or band. Two semester projects.
Pre: MUS 186 or instructor's consent.

MUS 365 History of Western Music I (3) Development of Western music from its origins to the twentieth century. Styles, schools, and composers.
Pre: MUS 160 and 186 or instructor's consent.

MUS 366 History Of Western Music II (3) Development of Western music from its origins to the twentieth century. Styles, schools, and composers.
Pre: MUS 160 and 186 or instructor's consent.

MUS 375 Jpnse Music (3) Historical survey of traditional, contemporary, and Western-influenced music of Japan and study of major genres. No previous musical knowledge is required. (Same as JPST 375).
Pre: Junior standing or instructor's consent. (GenEd/IntReq: H/A/P)

MUS 385 20th Century Composition Techn (3) Study of the major compositional techniques and esthetics of twentieth century music, including parallelism, atonality, serialism, pandiatonicism, neoclassicism, indeterminacy, extended techniques, electronic music, neo-romanticism, and eclecticism. Examine important schools of composition, analysis of major works, and composition exercises.
Pre: MUS 285 or instructor's consent.

MUS 390 Choral Conducting (3) Basic conducting technique and its application to the directing of choral organizations. Includes score reading, lyric diction, rehearsal techniques, and interpretative problems.
Required: concurrent enrollment in a choral ensemble.
Pre: MUS 186 or instructor's consent.

MUS 401 Vulcan Band (2) Rehearsals and performances for athletic events, pep rallies, and other similar events. Public performance required. May be repeated for credit.
Pre: Audition.

MUS 402 Instrumental Ensemble (2) Instruction and rehearsal in various types/genres of instrumental music. Public performance may be required, depending on instrumentation and personnel. Emphasis on music literacy and individual performance skills. May be repeated for credit.
Pre: audition or instructor's consent.

MUS 404 Kapili Choir (2) Performance of choral literature from Renaissance to the present, including ethnic music, world music, jazz, and choral/orchestral. Public performance required. Tour may be required. May be repeated for credit.
Pre: audition and instructor's consent.

MUS 406 Chamber Ensembles (2) Rehearsals and performance of chamber music for small instrumental/vocal groups. (A): Jazz Ensemble; (B): Collegium Musicum (Early Music Consort); (C): Vocal Music; (D): Keyboard Accompanying; (E): Saxophone Quartet; (F): Chamber Music; (G): Brass Ensemble; (H): String Ensemble; (I): Woodwind Ensemble; (J): Percussion Ensemble; (L): New Music Ensemble; (M): Musical Theatre. Public performance required. May be repeated for credit.
Pre: Audition and consultation.

MUS 419 Music for Elem Teachers (3) Survey of practical methods and materials used in teaching basic musical concepts in the elementary classroom; emphasis on music fundamentals, creative activities, and comprehensive musicianship for elementary students; development of skills in singing and using classroom instruments.
Pre: MUS 180 or instructor's consent.

MUS 435 Fourth-Level Applied Music (1-2) For music majors or performers of considerable experience. Continuation of MUS 335-336. Instruction is given in individual lessons for music majors and minors. One (1) credit consists of one half-hour lesson per week for 13 weeks of the semester. Two (2) credits may be earned by taking either two half-hour lessons per week, or one (1) one-hour lesson per week. Applied Music fees are in addition to regular tuition. For Applied Music courses and fee structure, see Performing Arts department chair and consult instructor at time of registration. Students are required to participate in student recitals and juries.
Pre: MUS 336.

MUS 436 Fourth-Level Applied Music (1) For music majors or performers of considerable experience. Continuation of MUS 335-336. Instruction is given in individual lessons for music majors and minors. One (1) credit consists of one half-hour lesson per week for 13 weeks of the semester. Two (2) credits may be earned by taking either two half-hour lessons per week, or one (1) one-hour lesson per week. Applied Music fees are in addition to regular tuition. For Applied Music courses and fee structure, see Performing Arts department chair and consult instructor at time of registration. Students are required to participate in student recitals and juries.
Pre: MUS 336.

MUS 485 Form & Analysis (3) Structural analysis of music literature from various style periods, including standard form types and analytical techniques applicable to post-19th century music.

MUS 487 Counterpoint (3) Contrapuntal procedures and techniques of the 16th (modal counterpoint) and 18th (tonal counterpoint) centuries.
Pre: MUS 285.

MUS x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

MUS x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.
Pre: instructor's consent.

Natural Resources (NRES)

College of Agriculture, Forestry, and Natural Resource Management

NRES 196 Intro to Natural Resource Mgmt (3) This course highlights the biological and physical science aspects of natural resource management at local, national, and global scales. Topics covered will include resource management of soil, water, forests, rangelands, wetlands, coasts and wildlife. This is an intro-level course designed to introduce key concepts and topical areas in natural resources and environmental management. (GenEd/IntReq: HPP)

NRES 230 Philippines Envirn & Nat Resou (3) Examination of the Philippines environment and natural resources from a long-term perspective. Analysis of the effects of resource management practices on environmental quality, agroecosystems, the economy, and food security. Consideration of conflicting values and resolution. (GenEd/IntReq: H/A/P)

NRES 410 Invasive Species & Ecosystems (3) Invasive species comprise one of the greatest immediate threats to global biodiversity. This course will focus on the ecological impacts of such species, the factors influencing their establishment, and the theory and practice of controlling invasive species.
Pre: BIOL 175 or BIOL 281 or Instructor's consent.

NRES 420 Hydrology and Watershed Mgmt (3) (lec., lab) Managing human impact on watershed and water resources and understanding the relationships among forest, soil, water, land-use, and people. Management of wildland watershed for control of the amount and timing of water yield, stormflow, water quality, erosion, and sedimentation with socio-economic and policy considerations. Emphasis on forest and water resources management.

NRES 425 Marine Biogeochemistry (3) Marine Biogeochemistry examines the chemical processes occurring in marine and estuarine waters, their impact on near shore and oceanic environments, and their connection to climatic stability. Marine biogeochemistry is inherently interdisciplinary, involving aspects of biology, earth science and physics, as well as chemistry.

Pre: CHEM 114 or CHEM 124 or instructor's consent.

NRES 430 GIS Application in Nat Res Mgt (3) GIS and spatial techniques in natural resource management. Spatial data structures, map projection, global positioning system. How to create spatial data sets through GPS survey. Utilization of GIS software and performance of basic spatial analysis.

Pre: Instructor consent required.

NRES 455 Pac Climate Change Adaptation (3) This course focuses on three major components: 1) understanding the basic science of climate change; 2) impacts on productive sectors and coastal activities; and 3) vulnerability assessments and adaptation strategies for integrated coastal management initiatives as well as for individual sectors.

Pre: Junior standing. (GenEd/IntReq: H/A/P)

NRES x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

NRES x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.

Pre: instructor's consent.

Nursing (NURS)

College of Arts and Sciences, School of Nursing

NURS 203 General Pharmacology (3) Pharmaceuticals discussed with emphasis on methods and sites of administration, mechanisms of action, toxicity, rate and uses of major therapeutic agents. Intended for undergraduates in the health sciences and related fields.

Pre: MATH 100, BIOL 243, 243L, 244, 244L or instructor's consent.

NURS 347 Health Assessment (3) Introduction to comprehensive health assessment of clients across the life span using critical thinking skills. Emphasis on the pathophysiologic influences on subjective and objective findings of selected systems. Detailed health assessment techniques will be introduced as well as methods of comprehensive history-taking. Note: Restricted to Nursing students only.

NURS 347L Hlt Assessment Practicum (1) Application of the nursing process in the comprehensive health assessment of clients across the life span. Emphasize the pathophysiologic and/or pathopsychologic influences on subjective and objective findings of selected systems. Detailed health assessment techniques as well as comprehensive history-taking. Note: Restricted to Nursing students only.

NURS 348 Human Pathophysiology (3) This course explores concepts of the biological basis for disease in adults and children. Alterations in normal body functions leading to disease and discomfort of the individual will be presented with an organized framework. Note: Restricted to Nursing and Pre-Nursing students only.

NURS 350 Transcultural Care & Hlth Prom (3) The course introduces basic principles of teaching-learning, adult learning, group process and basic transcultural care and health promotion concepts. Note: Restricted to Nursing Students Only. (GenEd/IntReq: H/A/P, HPP)

NURS 351 Profesnll Nsg Issues & Trends (3) Introduction of contemporary health reform issues and trends affecting the nursing profession. Overview of the history of nursing, significant national nursing studies, code of ethics, relationship of nursing theory to nursing practice and nursing research. Includes introduction to client care management. *Pre:* junior standing. Restricted to Nursing Students Only.

NURS 352L Nursing Skills Laboratory (1) (lab) Practice of basic clinical skills in a campus laboratory setting to prepare student for clinical practice in community settings. Includes faculty demonstrations, student return-demonstrations, and performance testing. Course offered CR/NC only. Note: Restricted to Nursing Students Only.

NURS 353 Nursing Concepts & Skills (3) Introduction to the art and science of the professional role of transcultural nursing care. Fundamental nursing concepts, process, and practice will provide the novice nursing student with a firm foundation for advanced nursing study. Note: Restricted to Nursing students only.

NURS 353L Nsg Concepts & Skills Practicum (3) Introduction to the application of the nursing process in the delivery of care to medical/surgical populations. Comprehensive, faculty-guided experiences in developing a beginning knowledge base for entry into the nursing profession. Note: Restricted to Nursing students only.

NURS 355 Adult Health Care I (3) Care of adult clients with acute medical/surgical problems. Integration of pathophysiology in the understanding of human responses to health deviations. Use of the nursing process to develop individualized, culturally congruent care plans. Note: Restricted to Nursing students only.

NURS 355L Adult Hlt Care I Practicum (3) Application of the nursing process in providing individualized, culturally congruent care to adult clients with acute medical/surgical problems. Note: Restricted to Nursing students only.

NURS 356 Parent-Newborn Health Care (3) Emphasizes the nursing process in applying culturally congruent nursing care to child bearing families. Note: Restricted to Nursing students only.

NURS 356L Parent-Newborn Hlt Care Pract (3) Application of the nursing process in providing culturally congruent nursing care interventions to child bearing families. Supervised clinical experiences in the labor and delivery room, newborn nursery, postpartum units, as well as community settings. Note: Restricted to Nursing students only.

NURS 357 Mental Health Care (3) Application of mental health concepts, transcultural caring and professional nursing skills in delivering mental health care. Includes study and application of treatment modalities appropriate to selected psychopathological conditions. Note: Restricted to Nursing students only.

NURS 357L Mental Hlt Care Practicum (3) Application of nursing process in the delivery of mental health care to selected populations. Faulty guided clinical experience in acute and community settings. Note: Restricted to Nursing students only.

NURS 358 Nursing Research (3) Introduction to the research process and the application of scientific method in nursing. Note: Restricted Nursing students only.

NURS 359 Foundation of Health Promotion (3) Exploration of the relationship between health promotion, health policy, and the impact on health conditions in diverse populations. Examination of the importance of health behavior and social determinants of health as contributors to current health problems, and the role of health promotion and education programs in addressing them.

NURS 360 Health Care Policy (3) Analyses of local, national and global economic, legal and social factors impacting health care policies. Discussion of relationship between emerging social issues/trends and health care disparities and capacities. Discussion of social justice, cultural competence, and equity in access and delivery of health care services. Opportunities are provided to participate in political processes impacting nursing and health care policy.

NURS 361 BSN Nursing Preview (3) Preview of academic and clinical opportunities for baccalaureate level nurses with an emphasis on leadership roles and advanced practice. Exploration of strategies for success as a life-long learner. An experiential component is included in this course which will supplement didactic content. The course is restricted to licensed registered nurses who are in the RN to BSN option of the BSN Program, or by instructor's consent. Offered every spring.

NURS 362 Nursing Professional Writing (1) The professional writing course is tailored for students planning careers in nursing. This class assists the student in developing professional writing skills. Writing is an essential component of the communication skills that help define professional nursing practice. The APA style is included to guide clear and professional communication. It encompasses standards for the content and organization of a paper and ways to express ideas clearly while reducing bias in language.

NURS 370 Transcultural Health Care (3) Introduces theories of transcultural nursing and human caring with an emphasis on exploring the caring values, beliefs, client/family lifeways and health practices of different ethnic groups and self by using cultural care assessment skills. Note: Restricted to Pre-nursing and Nursing students only.

NURS 371 Health Information Technology (3) Overview of information technology. Topics cover concepts and methodologies to plan, analyze, design, implement and evaluate health information systems. Note: Restricted to Pre-nursing and Nursing students only.

NURS 372 Spirituality in Health Care (3) An examination of the role of spirituality in patient care for clients of multicultural backgrounds across the life span. Exploration of spirituality as an integral part of self.

NURS 373 Gerontological Health Care (3) Care of the aging adult with an emphasis on successful aging and health promotion. Integration of theory and evidence-based practice in providing culturally congruent care.

NURS 374 Skills Nursing Leadrshp & Mgmt (3) Development of effective leadership skills, communication skills, interpersonal skills, presentation and technical writing skills necessary for nursing leadership and management. Emphasis on team management and conflict resolution skills are included.

NURS 375 Applied Human Nutrition (3) Applied nutrition in human health and disease, and the nurse's role in supporting nutritional care. *Pre:* one chemistry and one anatomy/physiology course, or instructor's consent. Note: Restricted to Pre-nursing and Nursing students only.

NURS 376 Human Lactation (3) No prerequisites, corequisites, crosslisting, special grading options or repeatability for credit. An Indepth focus on the anatomical and physiological basis of lactation and breastfeeding. This course includes the history of infant feeding in the US, the role of culture, benefits of human lactation including composition of human milk, evidence-based breastfeeding support for expectant and new mothers, and identification of barriers and common breastfeeding problems.

NURS 410 Community Health Care (2) Content will integrate nursing and community health theories. Emphasis on culturally sensitive care to families and other groups in a variety of community health delivery settings. Identification of community resources and processes for implementing change to promote community health. Note: Restricted to Nursing students only.

NURS 410L Community Hlt Care Practicum (3) (lab) Application of the nursing process in the delivery of nursing care to individuals, families, groups, and communities. Integration of community resources in collaborative relationships with community agencies to service populations with specific health care needs. Note: Restricted to Nursing students only.

NURS 455 Adult Health Care II (3) Prevention intervention and therapeutic modalities in caring for adult clients with acute medical and/or surgical problems. Emphasis on increasing medical-surgical nursing expertise with incorporation of client management skills and more advanced problem-solving. Note: Restricted to Nursing students only.

NURS 455L Adult Hlt Care II Practicum (5) Continued care of adult clients with acute medical and/or surgical problems. Emphasis on increasing medical-surgical nursing expertise with incorporation of patient management skills and more advanced problem solving. Note: Restricted to Nursing students only.

NURS 456 Parent-Child Health Care (3) Emphasizes the nursing process in the provision of safe and culturally appropriate care to children in the context of the family. Preventative health care, anticipatory guidance and health promotion in a developmental context are explored. Note: Restricted to Nursing students only.

NURS 456L Parent-Child Hlt Care Practicu (3) Application of the nursing process in delivery of nursing care to infants, children, adolescents, and their families. Focus on growth and development, health assessment and health promotion/disease prevention. Note: Restricted to Nursing students only.

NURS 457 Collaborative Hlt Care, Ldrshp (3) Management and leadership concepts in delivering comprehensive nursing care to clients with complex health care needs. Emphasize critical thinking and evaluation of clinical judgments in nursing practice. Organizational resources and delivery patterns are investigated for its effectiveness in addressing client needs in a variety of community settings. Note: Restricted to Nursing students only. (GenEd/IntReq: GCC)

NURS 457L Collaborative Hlt Care Practic (2) Application of management and leadership concepts in delivering comprehensive nursing care to clients with complex health care needs. Emphasize critical thinking and evaluation of clinical judgments in nursing practice. Incorporation of organizational resources and delivery patterns into nursing care that is effective and addresses client needs in a variety of community settings. Note: Restricted to Nursing students only.

NURS 459 Nursing Review (1) Review of human body systems, nursing management, concepts, and skills in client health care. Note: Restricted to Nursing students only.

NURS 459L Nursing Review Practicum (2) (lab) Application of nursing skills in concentrated clinical experience in the acute care setting. Note: Restricted to Nursing students only.

NURS 471 Intro Rural-Home Health Care (3) Introduction to the theory and role of the nurse in providing culturally congruent care in rural and home settings for client/family systems. Will examine the establishment of cooperative relationships with appropriate rural agencies. Note: Restricted to Pre-nursing and Nursing students only.

NURS x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

NURS x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. Pre: instructor's consent.

Philosophy (PHIL)

College of Arts and Sciences

PHIL 100 Intro to Philosophy (3) Major philosophers, methods, and issues in Western and non-Western philosophy. Discussion of such problems as our knowledge of reality, the freedom of the will, the relations between the mind and body, morality, the meaning of life and the existence of God.

PHIL 180 Love and Sex (3) Survey of classical and contemporary perspectives of the philosophy of love, marriage, relationships, sex, sexual identity, representations of sex and sexuality.

PHIL 209 Reasoning (3) Informal logic: Study of practical reasoning, argument, and the use and misuse of language. Emphasis on development of critical thinking skills.

PHIL 211 History of Ancient Philosophy (3) Philosophy of the Pre-Socratics, Plato, Aristotle and Roman thinkers.

PHIL 213 History of Modern Philosophy (3) From the Renaissance to the 19th century. Recommended: PHIL 211.

PHIL 220 Social Ethics (3) Contemporary ethical issues, such as abortion, euthanasia, the death penalty, sexual equality, sexual integrity, discrimination and reverse discrimination, violence, pornography, ethnic injustice, and environmental and population control.

PHIL 230 Belief, Knowledge & Truth (3) The sources and limits of human knowledge. Classical and contemporary epistemological theories, and their application to the everyday search for knowledge.

PHIL 300 History of Indian Philosophy (3) The historic Indian schools of thought, Brahmanism, Jain, Carvaka, Buddhist, Samkyha, Yoga, Nayaya, Vaisheskika, Mimamsa, and Vedanta. The main philosophers and thinkers of India including Gandhi, Radhakrishnan, and Tagore. Recommended: previous work in philosophy or religious studies. (GenEd/IntReq: H/A/P, HPP)

PHIL 301 Hist Of Chinese Philosophy (3) History of the Confucian, Taoist, and Buddhist philosophies and their interaction in China. The pivotal thinkers including Mao. Recommended: previous work in philosophy or religious studies. (GenEd/IntReq: H/A/P, HPP)

PHIL 302 Hist Of Buddhist Philosophy (3) History of Buddhist philosophy and its cultural influence and intellectual development in Asia and Hawai'i. Recommended: previous work in philosophy or religious studies. (GenEd/IntReq: H/A/P, HPP)

PHIL 304 Phil and Cultural Diversity (3) Philosophical examination of the meaning of cultural diversity and pluralism for questions concerning community and knowledge from a variety of American and non-western cultures as well as their interactions with categories of identity, based upon nation, race, class, gender and sexuality. Addresses the interactions of the social experience of individuals based upon categories of identity and the emergence of forms of community and knowledge. A global or transnational section will be one component of the course.

PHIL 316 Science, Technology & Society (3) Impact of science and technology on various philosophical issues. Through a variety of readings that exemplify the field's content, students will examine the social, political, aesthetic, ethical, economic, and environmental constructs that shape modern institutions in science and technology.

PHIL 327 Bioethics (3) An examination of controversial topics related to life and health, such as euthanasia, treatment of animals, genetic engineering, individual autonomy, and the health care system. Pre: Previous course work in philosophy.

PHIL 329 Environmental Ethics (3) Central ethical questions concerning the natural world, including environmental justice, responding to climate change and environmental devastation, and the relationship between human beings and the environment.

PHIL 375 Feminist Philosophy (3) Exploration of the feminist contributions to traditional philosophical questions in metaphysics, epistemology, and ethics as well as examining the philosophical implications of the intersections of race, class, gender and sexuality. (Same as WS 375)

PHIL 310 Metaphysics (3) Puzzling problems in Western thought, such as the nature of personal identity, the freedom of the will, time, and the relation between mind and body. Pre: previous work in philosophy.

PHIL 315 Ethical Theory (3) Classical and contemporary theories of right and good. Pre: previous work in philosophy.

PHIL 320 Social & Political Phil (3) Good and right applied to economic, political, and religious establishments; obligation, freedom of dissent, capital punishment, violence, rights, revolution, and war. Pre: previous work in philosophy. Recommended: PHIL 220.

PHIL 323 Professional Ethics (3) Professional conduct is being questioned as never before-- lawyers, physicians, engineers, accountants, etc., are criticized for disregarding the rights of clients and the public interest. The course addresses the ethical problems of "the professions" in general and will focus on professions in business, law, and health care. Pre: previous course work in philosophy.

PHIL 325 Philosophy Of Law (3) Problems and controversies in the nature of law and its bearing on human conduct. Topics: legal and moral obligation, obedience and respect, enforcement of morality, punishment and responsibility, justification of practices such as plea bargaining, bail, prosecutorial discretion, etc. Pre: previous work in philosophy.

PHIL 330 Philosophy of Art (3) The aesthetic object, form in art, representation, meaning in art, and claims of knowledge in art. Pre: previous work in philosophy and in art or music.

PHIL 340 Philosophy Of Religion (3) Philosophical problems in religious beliefs and religious knowledge. The existence of God, immorality, the problem of evil. Pre: previous work in philosophy or religious studies.

PHIL 345 Symbolic Logic (3) Techniques of symbolic logic, including propositional logic, predicate logic and the logic of relations.

PHIL 360 Existentialism (3) The themes which recur in the works of existential philosophers from the 19th century to the present. Pre: junior standing or instructor's consent.

PHIL 370 American Philosophy (3) The American philosophical tradition, spanning the disciplines of epistemology, ethics and political theory with emphasis on pragmatism and its relation to contemporary philosophy. Pre: previous work in philosophy or instructor's consent.

PHIL 381 Philosophy Of Wittgenstein (3) Topics in the philosophy of Ludwig Wittgenstein, such as: meaning, understanding, pain, private language, "family resemblance," language-games, knowledge and certainty, other minds, forms of life and the purpose of philosophy.
Pre: previous work in philosophy.

PHIL 385 Philosophy of Marxism (3) History and philosophy of Marxism from the early Marx through recent times, including such topics as: dialectical materialism, alienation, exploitation, surplus value, class struggle, revolution, socialism, communism, and the Marxian critique of capitalism, imperialism, fascism, terrorism, and capitalist cultural hegemony.
Pre: Previous work in philosophy or instructor's consent.

PHIL 390 History & Phil of Science (3) Natural science as a knowledge-seeking activity. Major episodes in the history of the physical and biological sciences; philosophical understanding of scientific observation, theory, and revolutionary change.
Pre: previous work in philosophy or instructor's consent.

PHIL 392 Biology & Philosophy (3) Philosophical examination of the implications of modern biology for how we understand ourselves and our relations to the natural world. Evolutionary, genetic, developmental, and ecological topics will be discussed.
Pre: previous work in philosophy and biology, or instructor's consent. (Same as BIOL 392)

PHIL 393 Normality, Abnormality & Soc (3) Philosophical study of how human diversity interacts with social norms. Topics include health and illness, disability, gender, and sexual orientation. Perspectives from biology and the social sciences are included in a study of how beliefs about normality vary between cultures, change through time, and affect human relations.
Pre: Previous work in philosophy or instructor's consent. (Same as WS 393).

PHIL 410 Philosophy of Language (3) Modern and historical theories of meaning, reference and the relationship between language and knowledge. Discussion of ordinary language, ideal languages and current developments in linguistics.
Pre: previous work in philosophy or instructor's consent.

PHIL 412 Philosophy of Nature (3) Examination of the philosophical theories of nature from classical to contemporary texts, and their interaction with questions of metaphysics, identity, the environment, and human freedom.

PHIL 430 Philosophy of Zen (3) Chief philosophical teachings of Zen, its methods and cultural influences. Comparative study of Zen and Western thought.
Pre: previous work in philosophy or religious studies, or instructor's consent.
Recommended: PHIL 302. (Same as JPST 430). (GenEd/IntReq: H/A/P, HPP)

PHIL 435 Philosophy Of Tao (3) Philosophical ideas of Lao Tzu, Chuang Tzu, and the Neo-Taoists, and their influences upon the lives of the Chinese and Japanese peoples. Comparative study of Taoist and Western philosophy.
Pre: previous work in philosophy or religious studies, or instructor's consent.
Recommended: PHIL 301. (GenEd/IntReq: H/A/P, HPP)

PHIL 450 Mahayana Buddhist Phil (3) Important tenets and major schools of Mahayana Buddhist philosophy in India, China, Japan, Tibet, and Hawai'i. Comparative study of Mahayana and Western philosophy.
Pre: previous work in philosophy, religious studies, or instructor's consent.
Recommended: PHIL 302. (Same as JPST 450). (GenEd/IntReq: H/A/P, HPP)

PHIL 496 Seminar in Philosophy (3) For serious students of philosophy. The topics vary and the course may thus be repeated for credit.

PHIL x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

PHIL x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.
Pre: instructor's consent.

Physics (PHYS)

College of Arts and Sciences

PHYS 106 College Physics I (3) Principles of physics with the use of algebra and trigonometry. Covers mechanics, oscillations, fluids, waves, kinetic theory, and thermodynamics.
Pre: MATH 104 or MATH 115. See also PHYS 170L, which serves as the lab course.

PHYS 107 College Physics II (3) Principles of physics with the use of algebra and trigonometry. Covers electricity, magnetism, optics, and rudiments of atomic and nuclear physics.
Pre: C or better in PHYS 106. See PHYS 171L, which serves as the lab course.

PHYS 110 Physics of Contemporary Issues (3) Contemporary issues of political interest such as nuclear warfare and waste, the greenhouse effect and alternative energies will be studied at a physics level appropriate for any college student. A course objective is to develop scientific reasoning.
Pre: none. (GenEd/IntReq: GCC)

PHYS 111 Intro to Space Exploration (3) Survey of applied science, social, cultural and engineering topics in space science, focusing on exploration. Past, present and future aspects of space exploration. Relationship to Hawaiian views of cosmology and Hawaiian traditions such as Wayfaring and relationship to the land. (Same as ASTR 111)

PHYS 115 Phys for Liberal Arts (3) Designed for non-science majors. Basic physical concepts through student's active participation and practical experience in a manner that is simple and intuitive.

PHYS 120 Weather & Climate Hawaii (3) For non-science majors and prospective science teachers. Basic meteorology, sun-earth-ocean-atmosphere interrelationships, weather types, seasonal changes, trade winds, clouds, rainfall, with examples drawn from the local weather and climate. (Same as GEOG 120). (GenEd/IntReq: H/A/P, GCC, HPP)

PHYS 150 World Models (3) This course examines computer and mathematical models of the world that take into account how its subsystems (environment, resources, politics, finance) affect each other. No prerequisites.

PHYS 170 Gen Phys I: Mechanics (4) Introductory physics designed for students majoring in physical sciences or engineering. Covers mechanics of particles, extended bodies, rotational dynamics, conservation laws, fluids, wave motion, and thermodynamics.
Co-req or Pre: MATH 205

PHYS 170L Gen Phys I Lab (1) (lab) A required laboratory supplement for PHYS 106 and PHYS 170; covers basic principles of experimentation and physical measurement. Presents illustrative experiments in mechanics, heat and waves.
Pre: PHYS 106 or PHYS 170 which can be taken concurrently.

PHYS 171 Gen Phys II: Elec & Magnetism (4) Introductory calculus-based physics designed for students majoring in physical sciences or engineering. Covers electric fields and potentials, magnetic fields, Maxwell's equations and basic optics.
Pre: MATH 206 as a pre-req which can be taken concurrently and C or better in PHYS 170.

PHYS 171L Gen Phys II Lab (1) (lab) A required laboratory supplement for PHYS 107 and 171; presents illustrative experiments in electricity, magnetism and optics.
Pre: PHYS 107 or 171 which can be taken concurrently.

PHYS 172 Gen Physics I-Particles & Wave (4) Introductory physics designed for students with a declared major or minor in physics or astronomy. Covers mechanics of particles, rigid bodies and fluids, wave motion, thermodynamics and kinetic theory.
Pre: MATH 205 and placement exam.

PHYS 173 Gen Physics II-Electric & Magn (4) Introductory physics designed for students with a declared major or minor in physics or astronomy. Covers electrostatics, conductors and current, dielectrics, magnetic fields and induction, Maxwell's equations and basic optics.
Pre: MATH 206 or concurrent.

PHYS 211 Electronics (4) (lec., lab) Theory and application of circuit design and analysis. AC and DC circuits and filters; circuits based on diodes and transistors and operational amplifiers; digital circuits and filters. Laboratory will consist of the design, assembly and testing of circuits.
Pre: PHYS 171, 171L, and MATH 206.

PHYS 224 Spaceflight (3) All aspects of manned and unmanned spaceflight, with emphasis on actual technologies and procedures used in space exploration. For students interested in Astronomy, Physics, Planetary Sciences, Aerospace Engineering or with a general interest in spaceflight.
Pre: PHYS 106 or higher; CHEM 114 or higher; MATH 104 or higher or instructor's consent. (Same as ASTR 224)

PHYS 230 Applied Electronics (4) (lec., lab) Theory and applications of circuit design and analysis with an emphasis on analog devices. AC and DC series and parallel RLC circuits, diodes, transistors and operational amplifiers. Laboratory will consist of construction and analysis of representative circuits.
Pre: PHYS 171 or PHYS 173 and PHYS 171L. (Same as ASTR 230)

PHYS 260 Computational Physics & Astron (3) Computational techniques in physics and astronomy, with an emphasis on fundamental algorithms and development of code in high-level languages. Topics include least squares, interpolation, random number generators and numerical integration of differential equations.
Pre: PHYS 170 or PHYS 172, CS 150.

PHYS 270 Gen Phys III: Intro Modern Phy (3) Survey of contemporary physical theory and applications: special relativity; quantum physics; atomic structure and spectra, nuclear structure and reactions; elementary particles and fundamental forces.
Pre: MATH 300 which can be taken concurrently and PHYS 170-171.

PHYS 330 Electromagnetism (4) Intermediate-level electrostatics and electrodynamics; electric and magnetic properties of ideal and real materials; Maxwell's equations of electromagnetism; conservation laws; electromagnetic waves and boundary value problems. Pre: MATH 232 and MATH 300 which can be taken concurrently and PHYS 171, MATH 231.

PHYS 331 Optics (3) Intermediate optics. Topics include plane waves, multiple interfaces, polarization, light propagation in real material, Fourier optics, coherence theory, paraxial rays, diffraction and blackbody radiation.
Pre: PHYS 171 and Math 231.

PHYS 341 Thermodynamics (3) Thermodynamics at the intermediate level. Includes energy, entropy, engines and refrigerators, free energy, classical and quantum statistical mechanics.

Pre: PHYS 270 and MATH 231.

PHYS 360 Mathematical Physics (3) Special functions of mathematical physics which arise from Sturm-Liouville equations: Bessel, beta, elliptical, gamma and Legendre functions. Generating functions, complex integral representations. Other topics may include transforms, Fourier analysis and linear algebra.

Pre: MATH 232, or MATH 231 and MATH 300 or instructor's consent.

PHYS 371 Classical Mechanics (3) Intermediate-level kinematics and dynamics.

Central force motion, rotations, noninertial frames, normal modes of vibrations; introduction to Lagrangian and Hamiltonian formalism.

Pre: PHYS 170-171. Previous or current enrollment: MATH 300.

PHYS 380 Chaos (3) An introduction to nonlinear dynamical systems for science majors. Topics include dynamics in one and several dimensions, stability, excitable media, fractals, and time series analysis. Applications in physics, chemistry, ecology and other fields are illustrated. (Same as MATH 380).

Pre: C or better in MATH 206 and C or better in PHYS 171 or MATH 232.

PHYS 430 Quantum Mechanics I (4) Postulates and formalisms of quantum mechanics. The Schrodinger equation in one and several dimensions: scattering, the harmonic oscillator, tunneling and the hydrogen atom. Orbital angular momentum and spin. The statistical interpretation and the uncertainty principles. Quantum statistical mechanics. Fermions and bosons.

Pre: PHYS 270 and MATH 300.

PHYS 431 Quantum Mechanics II (3) A continuation of PHYS 430. Topics may include perturbation theory, the adiabatic approximation, foundations of quantum theory and/or quantum computation.

Pre: PHYS 430.

PHYS 432 Senior Lab/Thesis Project (3) (lab) Individual research projects conducted in the college laboratory, library, or observatory; or at an external research facility; under the direct guidance of a member of the physics and astronomy faculty or an affiliated faculty member. Students must propose and complete a research project and present a final report to the department. Permission of the department is required for registration. May be repeated once for a maximum of 6 credits.

Pre: Permission of the department is required. (Same as ASTR 432)

PHYS 495A Seminar (1) Seminar presentations of topics in the physical sciences by faculty, enrolled students and invited speakers. The first semester (495A) is taken CR/NC, in the second semester (495B), students are required to present a seminar for a letter grade. (Same as ASTR 495A-495B, CHEM 495A-495-B, GEOL 495-A-495-B, and MATH 495A-495B).

Pre: senior standing or instructor's consent.

PHYS 495B Seminar (1) Seminar presentations of topics in the physical sciences by faculty, enrolled students and invited speakers. The first semester (495A) is taken CR/NC, in the second semester (495B), students are required to present a seminar for a letter grade. (Same as ASTR 495A-495B, CHEM 495A-495B, GEOL 495A-495B, and MATH 495A-495B).

Pre: senior standing or instructor's consent.

PHYS 496 Space Studies Seminar (1) Seminar presentations of topics related to space exploration by invited speakers, faculty, and enrolled students. Students are required to prepare and submit reaction papers/essays.

PHYS x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

PHYS x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.

Pre: instructor's consent.

Plant Pathology (PPTH)

College of Agriculture, Forestry, and Natural Resource Management

PPTH 301 Trop Plant Pathology (3) (lec., lab) Principles of plant pathology, major diseases in the tropics caused by fungi, bacteria, nematodes, and viruses; their nature, diagnosis and control.

Pre: BIOL 175 or instructor's consent.

PPTH 405 Plant Disease Diagnosis (3) (lec., lab) Practical skills in field and laboratory to determine the cause of a plant disease. Recognition of characteristic symptoms of diseased plants and signs of pathogens; use of confirming tests.

Pre: PPTH 301.

PPTH 412 Plant Disease Control (3) (lec., lab) Methods and principles of plant disease control, including chemical and nonchemical means, based on epidemiology and the disease cycle. Formulation and application of control recommendations.

Pre: PPTH 301.

PPTH x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

PPTH x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.

Pre: instructor's consent.

Plant Physiology (PPHY)

College of Agriculture, Forestry, and Natural Resource Management

PPHY 310 Plant Growth/Develop (3) (lec., lab) The chemistry and physiology of growth regulators and their involvement in plant growth and development. Experiments and demonstrations illustrating both basic and applied aspects of chemical growth regulation.

Pre: HORT 262 or BIOL 175 and one year of college chemistry.

PPHY 415 Plant Nutrition (3) (lec., lab) Mineral nutrition of plants, symptoms of mineral deficiency, corrective measures, water relations and nitrogen cycle. Special attention will be given to the role of nutrients in essential physiological and behavioral process.

Pre: HORT 262 or BIOL 175 and one year of college chemistry.

PPHY x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

PPHY x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.

Pre: instructor's consent.

Political Science (POLS)

College of Arts and Sciences

POLS 101 Am Politics: National (3) Organization and functioning of the American political system at the national level.

POLS 101G Am Politics: Ntl Citizenship (3) Organization and functioning of the American political system at the national level. Includes applied learning component. (GenEd/IntReq: GCC)

POLS 201 Intro to Political Theory (3) Approaches to the study of political theory. Analysis of major themes in ancient, modern, and postmodern political theories, including: human nature; the individual and the community; liberty; power; political identity.

POLS 220 Intro To Legal Systems (3) The legal system of the U.S. state and federal courts, judges, attorneys, and law enforcement personnel; civil and criminal law and procedure.

POLS 242 Intro To World Politics (3) The theory and substance of international politics, with emphasis on the international behavior of nations. Topics include war, regional integration, the United Nations, and the gap between rich and poor nations.

POLS 251 Intro to Comparative Politics (3) Comparative study of politics, government and economic development in several different countries including Britain, Japan, Russia, China, Mexico, India and Egypt.

POLS 280 Methods of Research (3) The logic and approaches used by social scientists: concept formation, design of research projects, choice of techniques, and interpretation of results.

Pre: POLS 101 or instructor's consent.

POLS 300 Hist Poli Thought: Anc To Mod (3) Political thought from ancient political philosophy to the advent of modern liberal democracy. Major thinkers include Plato, Aristotle, Machiavelli, Hobbes and Locke.

POLS 303 Feminist Political Theory (3) An examination of the progression of feminist political thought. Topics covered include the roles of women in the history of Western political thought, early feminist writings, and contemporary feminist theories related to liberalism, radicalism, and postmodernity. (Same as WS 303)

POLS 304 Liberalism and Globalism (3) Liberalism and its critical appraisals, including classical conservatism, Marxism, socialism, anarchism, fascism, postmodernism. (GenEd/IntReq: GCC)

POLS 320 Mock Trial (3) Experiential learning in a courtroom trial setting. Preparation includes knowledge of functions and roles of court personnel, elements of proof, techniques of direct and cross-examination. Includes role-playing in six mock trial cases.

POLS 321 Constitutional Law (3) Civil rights and civil liberties. The relationship between the individual and the government in such matters as freedom of expression, freedom of the press, religious freedom, the rights of the accused, freedom from discrimination, and the right of political participation. (Formerly POLS 421)

POLS 322 Criminal Justice (3) An examination of the criminal justice system, its structure and its function, with emphasis on the rights of the accused as exemplified in appellate court decisions.

Pre: POLS 220 or instructor's consent.

POLS 323 Criminal Law and Procedure (3) This course addresses the basics of criminal law and procedure. Topics will include the fundamental principles of criminal law and procedure, how they were established, and how they are commonly practiced

Pre: POLS 220

POLS 324 Criminology (3) Examines patterns of crime, types of offenders, theories of crime, police, courts, prisons, probation, and parole in relation to criminal behavior. *Pre:* SOC 100 or instructor's consent. (Same as SOC 324)

POLS 325 Legal Geography (3) In this course, we will explore and examine a variety of places that upon first consideration, do not seem either legal or political. We will investigate a variety of types of places and spaces that carry legal and political weight in our everyday lives. Themes of consumption, expression, access, accommodation, culture, sex, race, living, national identity, community, discipline, and property will guide our inquiry into the relationship between law, politics, and spatial habitation. (Same as GEOG 325). (GenEd/IntReq: GCC)

POLS 326 Juvenile Delinquency (3) Examination of the causes and control of juvenile delinquency. The major theories of juvenile delinquency will be reviewed. The course will also explore the organization and process of juvenile justice. *Pre:* SOC 100 or instructor's consent. (Same as SOC 326)

POLS 327 Law and Identity (3) In this course, will politically engage with the legal construction of who we are as individuals and our presence within different communities. The relationship between law and identity involves politically contested frameworks of sexuality, gender, race and ethnicity, ability, and ownership according to both judicial doctrine and contemporary scholarship. As these frameworks shift and evolve, the politics of legal identification sculpt our own social horizons. (Same as WS 327).

POLS 331 Presidency And Congress (3) An examination of the institutions of the Presidency and the Congress and an analysis of the history, major office holders, processes, and functions of these American institutions.

POLS 332 Politics Of Race & Gender (3) A survey of the historic, legal, political, and social forces shaping society's construction of race, ethnicity, and gender. Notions of power and the political significance of race and gender are explored. (Same as WS 332).

POLS 334 Pol Bvr, Campaigns & Elections (3) An examination of the influence of individuals, interest groups, mass movements and elections on the democratic process. Topics covered include electoral rules, candidate strategies, campaign finance, voting, and political mobilization.

POLS 335 Envir Politics & Policy (3) An examination of the major environmental and natural resource problems facing society today. Topics covered will include air and water pollution, energy development, and land use. (Formerly POLS 435)

POLS 337 Politic of Hawaii: State/Local (3) An examination of the institutions and political forces shaping Hawaii's contemporary state and local governance, focusing on executive, legislative and judicial institutions and their relations, political culture, leadership patterns and recruitment, voter participation in politics, electoral analysis, political economy, local political parties and interest groups. (GenEd/IntReq: H/A/P)

POLS 340 U.S. Foreign Policy (3) The policy-making process with special attention to the role of the President, the Congress, the military, organized lobbies, and the public. *Pre:* POLS 101 or instructor's consent. (Formerly POLS 440)

POLS 342 International Law (3) Development, functions, and sources of public international law. Survey of major areas: law of the sea; laws of air and space; laws of warfare; pacific settlement of disputes; and rule-making in international organizations. *Pre:* POLS 242 or instructor's consent.

POLS 345 Model United Nations (3) An examination of the organization of the United Nations, its rules of procedure and major UN issues. The course prepares selected students to represent the University at the National MUN (New York) or Western MUN (San Francisco). May be repeated three times for credit, but only six credits may be applied to the major.

POLS 346 International Organizations (3) Survey of the theories of international political integration, the United Nations and its specialized agencies, the European Union, NATO, the Organization of American States, OPEC, and other supraregional and regional economic, security, and political international organizations.

POLS 351 Politics Of China (3) Various aspects of contemporary Chinese politics in terms of elite patterns, institutional roles, and the responses by the masses. Areas to be covered include: Mao's ideology, shifts in development strategy, impact of the Cultural Revolution, and changes and reform under Deng Xiaoping. *Pre:* POLS 251 or instructor's consent. (GenEd/IntReq: H/A/P, HPP)

POLS 353 Politics Of Japan (3) Aspects of Japanese politics, emphasizing the post-1945 period. Topics include political development and change, the political economy of Japan, major political institutions and organizations, policy-making processes, and controversial political issues. (Same as JPST 353). (GenEd/IntReq: H/A/P, HPP)

POLS 355 Internatl Political Economy (3) Topics include world powers and the world economic systems, the third world economic development, political and economic reforms, and Asian development models. *Pre:* ECON 100 or POLS 242 or instructor's consent.

POLS 360 Public Administration (3) Public administration as a major component in the American political process and of public policy making and the crucial role administrators play in that process.

POLS 391 Internship (3-12) Application of knowledge and skills in a public, private, or government agency/setting. A total of 15 credits of POLS 391 and POLS 481 may be applied to the POLS major.

Pre: instructor's consent, preapproved placement, statement of learning objectives, and completed internship contract. (GenEd/IntReq: GCC)

POLS 402 Contemporary Political Thought (3) Political thought from early twentieth century existentialism to postmodernism, feminism and neo-conservatism.

POLS 428 First Amendment (3) This Upper Division Political Science course will explore the broad scope of the First Amendment from a perspective of public law. We will examine theories and applications of First Amendment freedoms pertaining to the areas of religion, expression, environments, association, and the press. *Pre:* POLS 220.

POLS 433 Politics, Media & Public Opin (3) An examination of the role of mass media in shaping public opinion and influencing governance. Topics include the use of media by candidates, government officials and organized interests; media effects on individuals; determinants of public opinion; public opinion polling; and methods of public persuasion.

Pre: POLS 101 or instructor's consent.

POLS 442 War and the State (3) An examination of the relationship between warfare and the modern state. Consideration given to the consolidation of power in national governments through the evolution of weapons technology and the military organization. Also considered is the emergence of non-state actors—such as terrorist groups—whose activities challenge the nation state.

POLS 457 U.S.-China Relations (3) This course surveys the history of U.S.-China relations to the present and gives in-depth consideration to contemporary issues including China's human rights record, the issue of Taiwan, U.S.-China trade relations, and China's global role in the twenty-first century.

POLS 470S Seminar in Political Science (3) This is a capstone course that provides an intensive examination of the major concepts, categories and methods of political science. Topics include political ideologies, attitudes, voting behavior, institutions of government, public policy, law, justice and world politics.

Pre: POLS 101, POLS 201, POLS 220, POLS 242, POLS 251, POLS 280 and junior or senior standing.

POLS 481 Government Internship (3-15) Juniors and seniors may apply for an internship with the Hawai'i County Council or, in the Spring, with the Hawai'i State Legislature. Legislative interns receive 15 semester hours of credit and a stipend. May be repeated once for credit, but no more than 15 credits of POLS 481 and/or POLS/SOC 391 shall apply to the major. CR/NC only.

Pre: instructor's consent.

POLS 490 Senior Thesis (3) Individual research in problems of special interest.

Pre: instructor's consent.

POLS x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

POLS x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.

Pre: instructor's consent.

Psychology (PSY)

College of Arts and Sciences

PSY 100 Survey Of Psy (3) Principles of human behavior, individual differences, motivation, emotion, perception, learning. This introductory course provides a general survey of the entire field of psychology and serves as the prerequisite for all upper-division psychology courses.

PSY 213 Statistical Techniques (4) Frequency distributions; graphic methods; central tendency and variability; correlation and regression; inferential statistics; non-parametric statistics.

Pre: two years of high school algebra or equivalent.

PSY 214 Research Methodology (4) Methods of scientific observation, nature of experiments, the use of quasi-experimental designs, control group experimental designs, and single-subject experimental designs. Potentials and problems in research and clinical uses of these designs. Ethical considerations involved in conducting research. *Pre:* PSY 100, 213.

PSY 312 Evaluation Research (3) The application of research methods in the planning, monitoring and evaluation of social programs. Needs assessment, program monitoring impact assessment and efficiency analysis will be surveyed.

Pre: PSY 100, 213, 214.

PSY 313 Testing & Measurements (3) Principles, concepts, and procedures of psychological testing, including construction, validation, interpretation, and use of tests in intellectual and personality assessment.

Pre: PSY 100, 213.

PSY 314 Learning & Motivation (3) Major conditions influencing learning and forgetting; role of practice, reward, motivation, drive and emotion; theoretical interpretations of learning and motivation.

Pre: PSY 100, 213, 214.

PSY 315 Sensation And Perception (3) Psychophysics, vision, audition, taste, smell, theories of perception.

Pre: PSY 100, 213, 214.

PSY 319 Experimental Psychology (3) Original experiments with emphasis upon laboratory techniques. Control of variables, apparatus design, statistics in research.

Pre: PSY 100, 213, 214.

PSY 320 Developmental Psy (3) Emotional, mental, physical, social development from infancy to adulthood; interest and abilities at different age levels.

Pre: PSY 100.

PSY 321 Psy Of Personality (3) Scientific study of personality through examination of major theoretical approaches: personality functioning, development, and change; assessment and research strategies; empirical data on central concepts and social-cultural determinants.

Pre: PSY 100.

PSY 322 Social Psychology (3) Interpersonal relations, social attitudes; group dynamics; intergroup relations, class and cultural influences.

Pre: PSY 100.

PSY 323 Community Psychology (3) Community factors such as urbanization, social service programs, and schools as they affect the psychological well-being of individuals. Social system intervention techniques to better the fit between individuals and environments.

Pre: PSY 100. (GenEd/IntReq: H/A/P, GCC, HPP)

PSY 324 Abnormal Psychology (3) Nature and causes of psychotic, neurotic, intellectual, and other psychological disorders. Definition, assessment, and diagnosis of abnormality. Psychotherapy, chemotherapy, and other treatment alternatives. Prevention, legal, and societal issues.

Pre: PSY 100.

PSY 325 Psychology Of Women (3) Issues and topics relevant to the psychological development and functioning of women including sex differences in abilities and behavior, achievement motivation, work, sexuality, pregnancy, childbirth and motherhood, mental health and domestic violence.

Pre: PSY 100. (Same as WS 325)

PSY 333 Psycholinguistics (3) Theory and method in the investigation of the relationship between language and cognition, first and second language acquisition, speech pathologies. (Same as LING 333)

Pre: LING 102 or PSY 100 or instructor's consent.

PSY 335 Animal Psychology (3) Biological, ecological, social and learned bases of animal behavior based on laboratory and field investigations.

Pre: PSY 100 or instructor's consent.

PSY 350 Cognitive Psychology (3) Theories, assumptions, empirical findings, and applications of cognitive psychology. Topics include memory, inference, prediction, and mental imagery.

Pre: PSY 214.

PSY 352 Introduction to Biopsychology (3) Survey of the study of behavior from the viewpoint of the natural sciences. Genetics, neural mechanisms, pharmacology, and biological development of behavior will be discussed.

Pre: PSY 100, 214.

PSY 353 Clinical Psychopharmacology (3) This course will offer a discussion of psychopathology from a biological perspective including the neurochemical, neuroanatomical, and genetic causes of psychopathology. Emphasis will be placed on the pharmacotherapeutic treatment of psychopathology.

Pre: PSY 352 or instructor's consent.

PSY 354 Drugs of Abuse (3) Effects and consequences of drugs of abuse from both psychological and biological perspectives. Implications for substance abuse treatment will be discussed.

Pre: PSY 352 or instructor's consent.

PSY 360 Cross-Cultural Psy (3) Application of psychological methodology and theories to the study of behavior in selected cultures, with a focus on Polynesia. Topics to include child-rearing and socialization, cognition, personality, and social behavior patterns.

Pre: PSY 100 and upper division standing. (GenEd/IntReq: H/A/P)

PSY 369 Evolutionary Psychology (3) The course is a synthesis of modern psychology and evolutionary biology. It introduces students to the basic mechanisms of behavioral evolution. The course emphasizes adaptive problems and how humans of different sexes, cultures, ages and developmental stages solve them.

Pre: PSY 100.

PSY 370 Sport Psychology (3) Survey of methods and findings in the application of psychological principles in sport. Topics include arousal and anxiety, cognitive processes, team performance, coaching behavior and techniques to maximize sports performance.

Pre: PSY 100. (Same as KES 370).

PSY 377 Counseling Psychology (3) This course covers the various theoretical approaches to counseling, the therapeutic relationship, techniques of counseling, ethical issues, research, diagnosis and assessment, cross-cultural counseling, as well as career, family and couples, and group interventions.

Pre: PSY 100.

PSY 380 Health Psychology (3) Psychosocial factors in physical health, illness, and the health care system. Topics include stress and coping, personality and social factors affecting health, adaptation to chronic illness, death and dying, patient-practitioner relationships, the institutional context, and health promotion.

Pre: PSY 100.

PSY 385 Women & Health (3) Reproductive health, immune activity, autoimmune disease and mental health in women are covered from physiological, psychological, historical and cross-cultural perspectives.

Pre: PSY 100. (Same as WS 385)

PSY 390 Industrial & Organizational Psy (3) The application of the methods, facts, and principles of psychology to people at work in diverse group and organizational settings.

PSY 416 Emotion (3) A comprehensive introduction to the topic of emotion as it has been treated in the field of Psychology. Different theories and approaches to the scientific study of emotion, including basic neuroscientific principles, and recent human brain imaging techniques are discussed.

Pre: PSY 352 or instructor's consent.

PSY 420 Adolescent Develop & Mental Hlt (3) Normative and problematic development during adolescence. Cross-cultural differences and similarities in adolescent development. Theoretical approaches to adolescent mental health. Causes and effects of maladjustment. Approaches to prevention and intervention.

Pre: PSY 214, PSY 320.

PSY 422 Psychology of Sustainability (3) This course takes a service-learning approach to the study of theory and research in the areas of psychology that affect sustainable living. Research in the areas of attitudes, persuasion, behavior change, risk perception, social dilemmas, and social norms will be included. Classes will be seminars with the addition of students working in small groups to investigate and develop recommendations for a community client on a problem related to the promotion of sustainable living.

Pre: PSY 214, PSY 311, or instructor's consent. (GenEd/IntReq: GCC)

PSY 425 Career Development (3) Work-related behavior over the span of life. Theory, research, and counseling about career development. Work values, career goals, career decision-making, and occupational choice. Work adjustment and satisfaction. Work within the context of human lives. Interaction between career development processes and other domains of life, such as family, education, leisure. Course is conducted as a seminar with an emphasis on discussion.

Pre: PSY 214, PSY 320.

PSY 431 Brain Disease (3) Neurobiological mechanisms of central nervous system diseases and disorders.

Pre: PSY 100, 213, 214 and either PSY 350 or 352.

PSY 432 Psy Of Motivation (3) Theories of arousal and activation, incentive and reinforcement, and behavior suppression.

Pre: PSY 100 and instructor's consent.

PSY 436 Animal Cognition (3) A survey of the historical and contemporary scientific literature on animal cognition using a wide variety of species. The course covers a broad array of topics that may include concept formation, memory processes, numerical competence, social learning and imitation, self-awareness, theory of mind, referential communication and grammatical skills. (Same as BIOL 436)

Pre: PSY 213, 214, and PSY 314 or 350, or instructor's consent.

PSY 437 Marine Mammal Behavior (3) An introduction to marine mammals with emphasis on the behavior of marine mammals. Special attention given to those species found in Hawaiian waters. Individual species are examined within a comparative framework. Topics include: behavioral ecology, social behavior, cetacean societies, mating systems, communication, sensory perception, and cognition.

Pre: PSY 213, PSY 214 and PSY 314 or PSY 315 or PSY 350 or PSY 352 or instructor's consent. (Same as BIOL 437)

PSY 438 Child Cognition (3) How children think. A survey of how human perceptual and cognitive skills and intellectual abilities develop from infancy through early adolescence, and how cognitive development corresponds to brain development. Topics include theories of cognitive development, perception and attention, mental representation, concept development, categorization, social awareness, theory of mind, memory systems, language development, numerical competence, and approaches to the study of intelligence.

Pre: PSY 100, 213, 214, and PSY 320 or instructor's consent.

PSY 440 History Of Psychology (3) Historical origins and development of contemporary psychology.

Pre: 12 semester hours in psychology.

PSY 445 Practicum in Psychology (3) Supervised experience in human service, mental health and other community agencies in the local community.

Pre: 12 semester hours in Psychology and instructor's consent. (GenEd/IntReq: GCC)

PSY 450 Child Behavior Therapy (3) This is an advanced seminar on the practical application of behavioral theory to treatment of child and adolescent psychological disorders. Special emphasis will be given to the integration of science and practice with topics including behavioral assessment, basic principles and procedures of behavior modification, and evidence-based treatment for children and adolescents.

Pre: PSY 100, PSY 213, PSY 214 and PSY 320 or PSY 324.

PSY 451 Adult Behavior Therapy (3) Theory, research, and practice in cognitive behavior therapy applied to adult disorders and problems. Treatment applications of relaxation, exposure and prevention, desensitization, aversion therapy, biofeedback, self-control, imagery and cognitive strategies.

Pre: PSY 324

PSY 454 Methamphetamine: Clinc/Forens (3) Effects and consequences of methamphetamine from both psychological and biological perspectives. Methamphetamine, politics and the law. Implications for substance abuse treatment will be discussed.

Pre: PSY 352 or instructor's consent.

PSY 460 Psychology of Culture & Health (3) This course examines research and theory on how culture influences the occurrence, symptoms, diagnosis, and treatment of disease in an individual. In seminar-format, we will explore behaviors and attitudes that affect health and prevention of disease in the individual and how they are affected by culture, such as cultural definitions of health, culture and the conception of the body, as well as cultural influences on attitudes and beliefs related to health and disease.

Pre: PSY 214, PSY 360, or instructor's consent.

PSY 461 Psychology and Cancer (3) This course examines the state of behavioral and social science research regarding the impact of psychological, biological, behavioral, and social factors on cancer onset, progression, treatment, and survival. These factors are considered across the entire cancer continuum and at multiple levels of analysis.

Pre: PSY 100, 213, 214, 323.

PSY 469 Social Behavior of Primates (3) The course examines primate social systems. Emphasis is on a comparative analysis of primates' socioecology, group life, communication and intelligence.

Pre: PSY 352 or PSY 335, or instructor's consent.

PSY 470 Clinical Psychology (3) Nature, history, and contemporary state of the profession of clinical psychology. Theories, methods, and findings in assessment, intervention, research, and clinical practice. Multiple roles of the clinical psychologist, ethical and professional issues, standards of care, legal regulations of practice, and the mental health care system.

Pre: PSY 324.

PSY 471 Child Abuse and Neglect (3) A survey of topics related to physical, sexual and psychological child abuse and neglect, including: the prevalence and incidence of different forms of abuse and neglect, scientific theories and findings about the causes and consequences of abuse and neglect, forensic and clinical assessment of abuse and neglect, mandated reporting and other legal issues, and psychological interventions for abused and neglected children and their families.

Pre: PSY 214 and PSY 320, or instructor's consent.

PSY 475 Asian American Psychology (3) The course examines the personality and mental health issues of Asian Americans. Special emphasis is given to how minority group status, adaptation processes and bicultural development influence various aspects of psychological functioning. Specific topics include stereotypes and racism acculturation and enculturation, cultural values and behavioral norms, family roles, ethnic identity, communication styles, gender and interracial relationships, academic and career achievement, stressors and social support systems, psychopathology and culturally competent mental health treatment.

Pre: PSY 100 and either PSY 360 or instructor's consent. (GenEd/IntReq: H/A/P, HPP)

PSY 489 Research Seminar (3) Research in Psychology. Statement of 3 semester hours of planned reading or research required. Attendance at bimonthly seminar required. Seminars include lectures, discussions and research reports of topics in psychology presented by faculty, students, and visiting scholars.

Pre: instructor's consent.

PSY x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

PSY x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

Quantitative Business Analysis (QBA)

College of Business and Economics

QBA 260 Business Statistics (3) Application of statistics to business. Includes an introduction to probability and sampling; descriptive statistics, inference, regression and one-way analysis of variance.

Pre: COBE computer competency certification and one MATH course numbered 104, 104F, 115, 205 or higher.

QBA 300 Operations Management (3) This course is intended to provide students with an understanding of the principles of operations management. Topics covered include productivity, project management, forecasting, managing quality, human resource work studies, capacity planning, location and layout planning, supply-chain, inventory management, optimization, queuing, and simulation.

Pre: Admission to Professional Business Program and C or better in QBA 260.

QBA 362 Mgt Information Systems (3) Examination of business information subsystems and the role of computers in accounting, marketing, production, and financial subsystems; theory of general management information systems.

Pre: Admission to Professional Business Program.

QBA 365 Managing Electronic Commerce (3) Topics in advanced electronic commerce (EC) management. Issues include: defining EC in its various forms; exploring EC strategies; economics of EC; global EC issues. The class will complete a semester-long hands-on-project requiring students to: assess a business' needs and opportunities; plan a Web site corresponding to the needs assessment; design a fully functional and interactive commercial Web site; plan and implement administrative parameters and functions for customer service, security, site monitoring, site maintenance, business performance, and site effectiveness.

Pre: Admission to Professional Business Program, MGT 341 or QBA 362, or instructor's consent.

QBA x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

QBA x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.

Pre: instructor's consent.

Sociology (SOC)

College of Arts and Sciences

SOC 100 Principles Of Sociology (3) An introduction to the theories, scientific methods and empirical findings of contemporary sociology.

SOC 200 Career Opportunities in Soc (1) A forum for the presentation of career opportunities for Sociology majors and minors. The course features speakers, and the development of practical professional skills, including writing a resume. Offered on a CR/NC basis only. Required for Sociology majors and minors. Formerly SOC 490.

SOC 240 Social Psychology (3) An introduction to how sociologists view the relationship between social institutions, social groups and individual actions.

SOC 260 Social Problems (3) An introduction to the study of social problems in contemporary society, including their nature, sociological causes and possible solutions. Course may focus on a single social problem. (GenEd/IntReq: GCC)

SOC 280 Statistical Reasoning (3) An introduction to basic descriptive, correlational, and inferential statistics used in the social sciences and education.

Pre: concurrent enrollment with SOC 280L.

SOC 280L Lab in Statistical Reasoning (1) (lab) An introduction to the techniques and usage of statistical applications involving computation and interpretation of statistics.

SOC 300 Family in World Perspective (3) A comparative analysis of family and marriage patterns, mate selection, parent-child interaction, divorce rates, socialization of gender roles, legal sanctions, trends in organization and function. *Pre:* SOC 100 or instructor's consent. (Same as WS 300).

SOC 301 Intro Social Work (3) The sociological analysis of social welfare institutions and their relationship to meeting human needs and solving social problems. Course designed for students intending careers in the helping professions.

Pre: SOC 100 or instructor's consent.

SOC 305 Org Theory & Analysis (3) Contemporary theories and techniques used in the analysis of organizations. Designed for students intending careers in administration or the human services.

Pre: junior standing or instructor's consent.

SOC 310 Race & Ethnic Relations (3) Sociological analysis of the patterns of intergroup relations. Topics include the meaning of race, ethnicity, prejudice and discrimination, and the interactive strategies used by various groups. Emphasis on ethnic processes on Hawai'i and the Pacific region.

Pre: SOC 100 or instructor's consent. (Same as WS 310).

SOC 320 Social Stratification (3) The causes and consequences of institutionalized social inequality.

Pre: SOC 100 or instructor's consent. (Same as WS 321).

SOC 324 Criminology (3) Examines patterns of crime; types of offenders; theories of crime; police, courts, prisons, probation, and parole in relation to criminal behavior.

Pre: SOC 100 or instructor's consent. (Same as POLS 324).

SOC 325 Sociology Of Disaster (3) The ways in which human communities and organizations bring about, prepare for, and respond to calamitous environmental changes. Case studies selected from many societies.

SOC 326 Juvenile Delinquency (3) Examination of the causes and control of juvenile delinquency. The major theories of juvenile delinquency will be reviewed. The course will also explore the organization and processes of juvenile justice.

Pre: SOC 100 or instructor's consent. (Same as POLS 326)

SOC 328 Gender, Crime, and Justice (3) This course will examine theoretical perspectives on gender, crime, and the criminal justice system. Students will analyze the intersecting roles played by gender, race, and class in criminal offending, victimization, and institutional responses. Additional topics may include masculinity and crime, women and punishment, female delinquency, gender violence, sex work, and the role of women in the criminal justice system.

Pre: SOC 100 or WS 151 (Same as WS 328).

SOC 340 Socialization & Identity (3) The process by which an individual becomes a functioning member of society. (Same as WS 340).

Pre: SOC 100 or instructor's consent.

SOC 342 Soc Of Human Aging (3) Aging as a social phenomenon, including social impact of a growing elderly population, and emerging social patterns among the elderly. Emphasis on the interplay of biological, psychological, sociological and cultural factors of human aging. (Same as WS 342).

Pre: SOC 100 or instructor's consent.

SOC 345 Human Populations (3) Introduction to population theories and sociological research on population distribution, composition, and change within global and local contexts.

Pre: SOC 100 or instructor's consent.

SOC 352 Sociology Of Education (3) Formal education as an aspect of socialization. Emphasis is on the American system from a historical and comparative perspective.

Pre: SOC 100 or instructor's consent.

SOC 355 Sociology Of Religion (3) A comparative analysis of religion. Topics include religious movements, secularization and social change, conversion and faith dynamics, and meaning and belonging functions. Case studies drawn from different societies and historical periods.

Pre: SOC 100 or instructor's consent.

SOC 357 Intro to Family Therapy (3) An introduction to Marriage and Family Therapy including the profession's history, foundational theories, ethics and demonstrations of skills used by marriage and family therapists to help individuals, couples, and entire families deal with psychological, emotional and behavioral problems.

Pre: SOC 100, PSY 100 or instructor's consent.

SOC 365 Sociology of Deviance (3) This course examines social deviance, focusing on theory and contemporary research in the field. Topics to be covered may include sexual deviance, physical and cognitive deviance, substance use and mental illness.

Pre: SOC 100 or instructor's consent.

SOC 370 Political Economy of Hawai'i (3) An exploration into the political and economic processes of Hawai'i and how the two interrelate and affect each other. Emphasis on current issues and practices as well as processes.

Pre: SOC 100 or instructor's consent. (GenEd/IntReq: H/A/P)

SOC 371 Student Leadership Conference (3) This course is about developing and putting into practice student leadership skills. This will be accomplished through organizing and putting on a student leadership conference. Students will organize the conference as a whole as well as workshops and sessions. In addition, students will be expected to critique the conference.

SOC 380 Methods Of Research (3) A survey of the logic, purposes, techniques, terminology, and issues of social research methodology.

Pre: SOC 100, 280 and 280L or instructor's consent.

SOC 390 Sociological Theory (3) A critical examination of the theoretical foundations of contemporary sociological theories. Beginning with Marx, Weber, Durkheim, and Simmel, examines contemporary examples of social theory, including post-structuralism, critical theory, hermeneutics, and phenomenology.

Pre: SOC 100 or instructor's consent.

SOC 391 Internship (3-12) Application of knowledge and skills in a public, private, or government agency/setting. May be taken for at total of 12 credits, only six of which can apply to the Sociology major or three to the minor.

Pre: instructors consent, preapproved placement, statement of learning objectives, and completed internship contract. (GenEd/IntReq: GCC)

SOC 400 Sem in Social Psych (3) The relationship between social pressures/structure and the individual. Emphasis upon current research and theory in the area.

Pre: SOC 100 and junior standing or instructor's consent.

SOC 405 Sem in Social Organizatn (3) Social organization in all its forms, dynamics, and structures. While appealing to an historical and comparative perspective, primary attention will be directed to contemporary forms of social organization with an emphasis upon current research and theory in the area.

Pre: SOC 100 or instructor's consent.

SOC 420 Sem in Social Institutions (3) Institutions in contemporary society, with focus upon the process and structures of modern institutions such as the polity, economy, health care, and law. Emphasis upon current research and theory in the area of specific institutions examined.

Pre: SOC 100 or instructor's consent.

SOC 430 Sem in Social Change (3) Change in human societies from a comparative and historical perspective. Topics covered include modernization, development, tradition, and secularization. Emphasis upon current research and theory in the area.

Pre: SOC 100 or instructor's consent.

SOC 480 Practicum in Social Research (3) Direct involvement in all facets of the research process. Students have the option of working on their own projects or on projects initiated by the faculty. May be counted only once toward the required 35 semester hours of the major, but may be repeated once for upper division credit.

Pre: SOC 280 and 380 or instructor's consent. (GenEd/IntReq: H/A/P, HPP)

SOC x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

SOC x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

Soil Science (SOIL)

College of Agriculture, Forestry, and Natural Resource Management

SOIL 304 Tropical Soils (3) Origin, development, properties, classification, use and management of soils with emphasis on applications in the tropics.

Pre: CHEM 114 or CHEM 124 or instructor's consent.

SOIL 350 Soil Fertility (3) (lec., lab) Nutrient availability in relation to chemical and physical properties of tropical soils; fertility evaluation by plant response and soil tests; cycling of carbon, nitrogen, and minerals; nutrient management for enhanced plant productivity and maintenance of environmental and soil quality.

Pre: CHEM 114 or CHEM 124 or instructor's consent. SOIL 304 recommended.

SOIL x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

SOIL x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

Spanish (SPAN)

College of Arts and Sciences, Languages

SPAN 101 Elementary Spanish I (4) Beginning course, primarily emphasizing oral practice. Laboratory drill.

SPAN 102 Elementary Spanish II (4) Beginning course, primarily emphasizing oral practice. Laboratory drill.

Pre: SPAN 101 or equivalent.

SPAN 200 Interm Conversational Spanish (3) This course is intended for students who have gained some basic knowledge of Spanish language but need to improve their fluency and vocabulary necessary for practical functions in life: greetings and self-introduction, being or hosting guests, shopping, travel, airport situations, study abroad, etc. SPAN 200 will enhance SPAN 102 and 102 and complement SPAN 201, enabling the student to acquire oral fluency.

Prereq or coreq: SPAN 102 or instructor's consent.

SPAN 201 Intermediate Spanish I (4) Continuation of oral practice with increasing emphasis on reading and written composition. Laboratory drill.

Pre: SPAN 102 or equivalent.

SPAN 202 Interm Spanish II (4) Continuation of oral practice with increasing emphasis on reading and written composition. Laboratory drill.

Pre: SPAN 201 or equivalent.

SPAN 301 Adv Spanish Conversation (3) (lec., lab) Advanced Spanish Conversation will place emphasis on 2 of the 4 language skills: listening and speaking. The study of Spanish conversation in 15 common contexts will give the student a much deeper awareness of cultural expectations and norms in the Latin world. Knowledge of their courtesies and respect, their customs and situational idiosyncrasies is critical to create business or interpersonal relations. The student will also learn how Anglo customs overstep bounds and create offense in the Hispanic collective cultures. Student will gain fluidity and comprehension as well as cross-cultural understanding.

SPAN 302 Adv Spanish Reading/Writing (3) (lec., lab) Advanced Spanish Reading and Writing (302) will markedly extend the student's ability to read and write in a second language. Cultural expectations and practice are necessary to produce articles, journalism, business writing and literary analysis. The 302 is for students with Intermediate Spanish experience or with immersion experience in a Spanish or Latin culture. This course will teach students to critically comprehend Spanish texts, requiring them to reflect on these texts by producing written Spanish. Fifteen cultural texts will be read; fifteen papers and their corrections will be required.

SPAN 368 Gender & Women LatAm Lit/Film (3) Latin American men and women of alternative genders in the 20th century have lived in vastly different conditions and upheaval spanning feudalism to postcolonial thought. From genocide to authoritarian institutions of torture, the people in the texts and films had to endure turmoil and violent clashes of ideas. This course captures the Latin perspective of four different sociological spaces that women occupy in Latin America: the Indigenous space, the patriarchal latifundio, the mestizo space of markets, and the professional women under the military governments. Latin American and French feminist theories are used to clarify these contexts. (Same as WS 368).

SPAN 369 Lat & Glob Docum & Film: Crit Analy (3) This course will engage students in Latin and Global documentaries and films in the context of their perspectives, providing an excellent window into culture and world conflicts. The students lives in a global world today in which expansion of mindsets must become elastic with the practice of cultural exposure and analysis.

SPAN x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

SPAN x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. Pre: instructor's consent.

Tourism (TOUR)

College of Business and Economics

TOUR 317 Mkt & Mgt Of Travel & Tourism (3) Principles of marketing and management applied in hotel/ motel, resort, restaurant, travel, transportation, tourism and leisure industries. Course looks at who travels, where and why. Focus is on cases involving both small and large firms in the travel and tourism area. Pre: Admission to Professional Business Program and MKT 310.

TOUR 320 Tourism Economics (3) Microeconomics of travel: determinants of demand, empirical studies, demand forecasting; production cost analysis, market structure in major travel industries. Macroeconomic impacts. Pre: Admission to Professional Business Program and ECON 130.

TOUR 340 Interntl Travel & Tourism Plcy (3) Tourism in international trade, legal environment of international travel, political implications of tourism, social and cultural aspects of tourism, public and private policy issues for developed and developing destinations. Pre: Admission to Professional Business Program, junior standing and instructor's consent.

TOUR 350 Intro to Sustainable Tourism (3) Management and marketing issues faced by communities, business and government in developing sustainable tourism. Product development, pricing, capacity management, promotion and distribution channels. The strategic planning approach is introduced and applied in hands-on casework. Special resources include guest speakers with working knowledge of sustainable tourism and field trips to on-island tourism sites. Pre: Junior standing and acceptance into the Professional Business Program.

TOUR x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

TOUR x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. Pre: instructor's consent.

University (UNIV)

College of Arts and Sciences

UNIV 101 Paths to Acad/Lifelong Success (3) Designed for the first-time college student, this course is intended to promote the attitudes, behaviors, competencies, and skills that will increase students' academic success and foster their social integration into the college environment.

UNIV x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

UNIV x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. Pre: instructor's consent.

Women's Studies (WS)

College of Arts and Sciences

WS 151 Intro Gender & Women's Studies (3) An interdisciplinary survey of gender issues in contemporary U.S. society. Introduces foundational concepts regarding social constructions of gender, race, class, and sexual orientation. Topics include history, religion, sexuality, body image, reproductive rights, family, work, and violence.

WS 200 Gender Leadership & Soc Just (3) This course offers students the opportunity to think critically about leadership concepts, activism, and social change. Students will reflect on how social justice and multiculturalism influence the community and leadership of woman. Students will critically examine leadership theories and how to apply personal leadership styles.

Pre: WS 151 or permission of the instructor.

WS 200E Lit Genres: Myth/Folklore (3) An introduction to major genres in literature: Mythology and Folklore.

Pre: C or better in ENG 100, ENG 100T, ESL 100 or ESL 100T. (Same as ENG 200E)

WS 201 Global Cinema (3) A course that offers students a critical examination of worldwide cinema. The course will cover film theory and film making techniques from countries such as Germany, Mexico, China, Senegal, Iran, and India. Students will undertake a critical study of various schools of film as they pertain to these national cinemas as well as explore the cultural and socio-political controversies surrounding cinematography.

Pre: C or better in ENG 100, ENG 100T, ESL 100 or ESL 100T. (Same as ENG 201)

WS 202 Literature of Human Rights (3) This course will explore narratives from a human rights perspective, beginning in the era shortly before the adoption of the Universal Declaration of Human Rights in 1948 and extending into the 21st century. Students will focus on geopolitical conditions that contribute to the suppression of human rights in areas around the globe, including, but not limited to, Chile, India, Nigeria, Iran, the Palestinian Territories, and the United States.

Pre: C or better in ENG 100, ENG 100T, ESL 100 or ESL 100T. (Same as ENG 202)

WS 204 Intr Race/Gender Film Studies (3) This course will focus on how race and gender historically shape individual and cultural experiences in America, as expressed in film. Key works that offer portrayals by and about various groups (i.e. gays/lesbian, immigrants, indigenous communities, mixed-race populations, etc.) will be critically compared and examined. Students will also discuss and address evolving audience responses to these works.

Pre: C or better in ENG 100, ENG 100T, ESL 100 or ESL 100T. (Same as ENG 204)

WS 206 Intro to Popular Culture (3) This course offers an introductory study of mainstream manifestations of culture. Students will critically assess production, distribution, and consumption of various popular cultural genres, such as advertising, talk shows, sports programs, music videos and gossip magazines and websites, among many others.

Pre: C or better in ENG 100, ENG 100T, ESL 100 or ESL 100T. (Same as ENG 206)

WS 257 Multicultural Literature (3) This is a course designed for students who want to engage literatures from various ethnic groups in the U.S. The course includes historical context regarding the production of these literatures, providing an overview of how these groups have developed their own literary techniques, genres, and canons.

Pre: C or better in ENG 100, ENG 100T, ESL 100 or ESL 100T. (Same as ENG 257)

WS 300 Family in World Perspective (3) A comparative analysis of family and marriage patterns, mate selection, parent-child interaction, divorce rates, socialization of gender roles, legal sanctions, trends in organization and function.

Pre: Soc 100 or instructor's consent. (Same as SOC 300).

WS 305B Themes in Regnl Geog: Mid East (3) Surveys regional landscapes of the Middle East, including North Africa; focuses on historical and contemporary influences of physical, cultural, and economic landscapes.

Pre: Junior or senior status, or instructor's consent. (Same as GEOG 305B)

WS 310 Race & Ethnic Relations (3) Sociological analysis of the patterns of intergroup relations. Topics include the meaning of race, ethnicity, prejudice and discrimination, and the interactive strategies used by various groups. Emphasis on ethnic processes on Hawai'i and the Pacific region.

Pre: SOC 100 or instructor's consent. (Same as SOC 310).

WS 319 European Women's History (3) Study of European women from pre-history to the 20th century with emphasis on women's social and cultural roles in western history. Current feminist theory is also studied. (Same as HIST 319)

WS 320 Cross-Cultural Study Of Women (3) Comparative analysis of women's roles and women's lives in different societies. Topics include women's status, life stages, gender roles, images of women and power. (Same as ANTH 320)

WS 321 Social Stratification (3) The causes and consequences of institutionalized social inequality.

Pre: SOC 100 or instructor's consent. (Same as SOC 320).

WS 324 Culture, Sex And Gender (3) A cross-cultural examination of the development of gender systems and gender roles. Consideration of sex roles and activities as part of the larger gender system.

Pre: ANTH 100 or instructor's consent. (Same as ANTH 324)

WS 325 Psychology Of Women (3) Issues and topics relevant to the psychological development and functioning of women including sex differences in abilities and behavior, achievement motivation, work, sexuality, pregnancy, childbirth and motherhood, mental health and domestic violence.

Pre: PSY 100. (Same as PSY 325)

WS 327 Law and Identity (3) In this course, will politically engage with the legal construction of who we are as individuals and our presence within different communities. The relationship between law and identity involves politically contested frameworks of sexuality, gender, race and ethnicity, ability, and ownership according to both judicial doctrine and contemporary scholarship. As these frameworks shift and evolve, the politics of legal identification sculpt our own social horizons. (Same as POLS 327).

WS 332 Politics of Race & Gender (3) A survey of the historic, legal, political, and social forces shaping society's construction of race, ethnicity, and gender. Notions of power and the political significance of race and gender are explored. (Same as POLS 332).

WS 340 Socialization & Identity (3) The process by which an individual becomes a functioning member of society.
Pre: SOC 100 or instructor's consent. (Same as SOC 340).

WS 342 Sociology of Human Aging (3) Aging as a social phenomenon, including social impact of a growing elderly population, and emerging social patterns among the elderly. Emphasis on the interplay of biological, psychological, sociological and cultural factors of human aging.
Pre: SOC 100 or instructor's consent. (Same as SOC 342).

WS 352 Gender and Sexuality (3) An interdisciplinary exploration of concepts, constructions, and behaviors associated with gender and sexuality. Course materials examine historical, contemporary, and cross-cultural definitions and expectations, and correlations with social power and hierarchies. In addition, the course aims to illuminate the multiplicity of personal and social identities relating to sex, race/ethnicity, class, age, etc.

WS 355 Women in Modern Lit & Film (3) Literature and film by and about women from 1900 to the present. Feminist literary theory.
Pre: ENG/ESL 100 and 200-level literature course or college level Women's Studies courses or instructor's consent. (Same as ENG 355)

WS 356 Language and Gender (3) Students engage in the analysis of gender as it relates to language and society. Provides students with analytic resources for thinking critically about the relationship between language and social practice. Students gather and analyze data based on current theories. (Same as ENG 356, LING 356)
Pre: ENG/ESL 100 or 100T and LING 102, or instructor's consent.

WS 357 Women and Religion (3) Examines roles of, and attitudes towards, women in various religious traditions. Through both chronological and comparative approaches, explores depictions of women in scriptures and other primary texts as well as women's contributions to each tradition.

WS 358 Women in Christianity (3) Examines issues relating to sex and gender throughout the history of Christianity. Emphasizing primary texts, the course will explore writings by Christian women and Christian writings about women. (Same as HIST 358)

WS 360 American Women's History (3) Study of American women from the 17th to the 20th centuries. Special emphasis on women's social and cultural roles. Current feminist theory is also studied. (Same as HIST 360)
Pre: HIST 151, 152 or instructor's consent.

WS 368 Latin American Women's Lit (3) Latin American women of the 20th century have lived in vastly different conditions and upheaval spanning feudalism to postcolonial thought. From genocide to authoritarian institutions of torture, Latin women have had to endure turmoil and violent clashes of ideas. This course captures the Latin perspective of four different sociological spaces that women occupy in Latin America: the Indigenous space, the patriarchal latifundio, the mestizo space of markets, and the professional woman under the military governments. Latin American and French feminist theories are used to clarify these contexts. (Same as SPAN 368).

WS 369 Crit Anal Lat & Hisp Film (3) This course will engage students in Latin and Hispanic films in the context of their perspectives, providing an excellent window into culture and language. The student lives in a global world today in which expansion of mindsets must become elastic with the practice of cultural exposure and analysis. (Same as SPAN 369)

WS 375 Feminist Philosophy (3) Exploration of the feminist contributions to traditional philosophical questions in metaphysics, epistemology, and ethics, as well as examining the philosophical implication of the intersections of race, class, gender and sexuality. (Same as PHIL 375)

WS 378 N. Amer Indig Cultr Survival (3) This course will cover a broad swath of Native American history from the past few hundred years in the context of cultural survival and resistance. The course will begin with a short background in Native American history, but will be more specifically focused on various examples of resistance and incorporation. (Same as HIST 378).

WS 382 Qualitative Research (3) Introduction to the ethics, methodologies, and practice of research in human geography, particularly standpoint epistemologies and associated methodologies. Combines lectures, workshops, and assignments. Students will conduct and report upon their own research.
Pre: GEOG 103 or 102 or WS 151 or consent of Instructor. (Same as GEOG 382).

WS 385 Women & Health (3) Reproductive health, immune activity, autoimmune disease, and mental health in women are covered from physiological, psychological, historical and cross-cultural perspectives.
Pre: PSY 100. (Same as PSY 385)

WS 392 Japanese Women (3) History of women in Japan from the earliest historical eras, including the Heian aristocracy and evolving samurai culture, through the present. Topics include property rights, family structures, the influence of religion and secular philosophies, effects of political and legal changes, women's role in the economy and its effect on their status and lives, and women's activism. (Same as JPST 392, HIST 392). (GenEd/IntReq: H/A/P)

WS 393 Normality, Abnormality & Soc (3) Philosophical study of how human diversity interacts with social norms. Topics include health and illness, disability, gender and sexual orientation. Perspectives from biology and the social sciences are included in a study of how beliefs about normality vary between cultures, change through time and affect human relations.
Pre: Previous work in Philosophy. (Same as PHIL 393)

WS 401 Women in Hawaiian History (3) This course examines the lives and contributions of women in the history of Hawai'i. It considers how events such as the arrivals of foreigners, dismantling of the kapu system, the mabele, epidemics, political changes, world wars, etc., affected the social and cultural lives of women, men, children, and families. Course materials seek to understand how those gendered as "feminine" negotiated, accommodated, and resisted these changes over the last two centuries. (Same as HIST 401). (GenEd/IntReq: H/A/P)

WS 411 Family & Gender in Oceania (3) With a focus on the 19th and 20th centuries, this course examines how historical changes affected the social and cultural lives of women, men, children, and families in Oceania. Throughout the course we will endeavor to explore gendered reconstructions of particular events in the history of the Pacific: historiography, exploration, disease & depopulation, missionization, education, imperialism, colonization and decolonization in general. (Same as HIST 411). (GenEd/IntReq: H/A/P)

WS 420 Family Communication (3) Foundational concepts and theories are introduced. Communication dynamics within families are explored. Narrative, functional, interpretive, and systems approaches to family communication are included. Cultural influences are examined. Conditions necessary for optimal family functioning are addressed. (Same as COM 420)

WS 423 Post-Colonial Literature (3) A critical analysis of the development of contemporary world literature in the wake of the fall of European empires. This class is designed to explore the importance of writing in an age of changing national identities, shifting alliances, and volatile conflicts. Texts from African, Latin American, the Middle East, the Caribbean, and Hawai'i will be features.
Pre: ENG 300 or instructor's consent. (Same as ENG 423).

WS 430 Gender, Place and Environment (3) Survey of trends in geography of gender related to place, space and the environment. Addresses spatial interactions of gendered bodies of different ages, class and ethnicities. (Same as GEOG 430).
Pre: junior or senior standing or instructor's consent. (GenEd/IntReq: GCC)

WS 442 Romantic Literature (3) Poetry and prose from 1780 to 1832.
Pre: C or better in ENG 300 or instructor's consent. (Same as ENG 442).

WS 461 Race and Gender in Media (3) This course explores the dynamic interactions between race, gender and the mass media. Specifically, it examines media representations of race and gender and their cultural, sociological, and psychological effects in the society.
Pre: COM 260, 360 or instructor's consent. (Same as COM 461).

WS 480 Women and Rhetoric (3) Survey of key female figures that have figured (or not figured) into the rhetorical canon. Analysis of women's use of rhetoric in everyday life and at historic moments and consideration of methodological and theoretical issues intersecting women, rhetoric, and historical research.
Pre: C or better in ENG 300 or instructor's consent. (Same as ENG 480).

WS 486 Women in Ancient European Civi (3) Study of European women up to the year 800, with primary focus on the Mediterranean Basin. Themes encompass religion, social customs, and economic activities. (Same as HIST 486).
Pre: HIST 319 or 323 or 341 or 356 or 360; or instructor's consent.

WS 495 Women's Studies Seminar (3) Capstone seminar to be taken in the senior year (or as a second-semester junior). Readings, discussions, presentations, and guest lectures involving advanced analysis of theories about social systems and women's lives. Seminar will facilitate student's application of theoretical material and research toward particular areas of interest. Seminar topics may vary from year to year.
Pre: WS 151; 6 credits of upper-division WS courses or instructor's consent.

WS x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

WS x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.
Pre: instructor's consent.

Graduate Programs

Graduate Education General Information

Matthew S. Platz, Ph.D. (mplatz@hawaii.edu)

Vice Chancellor for Academic Affairs

Administration Building, Room 112

Phone: (808) 932-7332

Web: hilo.hawaii.edu/academics/graduate/

UH Hilo offers several graduate and professional programs. Information on admission policies and procedures, tuition and fees, registration, and degree requirements can be found in the following sections.

Graduate Admission Policies

The University of Hawai'i at Hilo is an equal opportunity institution of higher education and does not discriminate on the basis of race, gender, sexual identity, age, disability, religious affiliation, or country of origin.

Students are expected to be familiar with and follow the guidelines and policies set forth in the UH Hilo Catalog and Graduate Student Handbook. Students are ultimately responsible for selecting courses appropriate to the program degree objective.

Professional programs' policies may vary slightly from graduate program policies. Please check with your program chair for details.

Application Requirements

Note: The following requirements are the minimum requirements for any UH Hilo graduate program. Particular graduate programs' requirements may differ from the minimum. Therefore, prospective students must also check the requirements of their program of interest.

Applicants applying for admission to graduate programs must submit the following items directly to the Admissions Office:

1. A completed application form and appropriate fee. The application form and fee information are available online from the Office of Admissions.
2. One official transcript from each post-secondary institution attended. These transcripts must be sent directly from the institution or submitted by the applicant in a sealed institutional envelope if accompanying the application. Transcripts from within the UH system are not required.
3. Official Graduate Record Examination scores or other qualifying test scores as determined by the program (check admissions requirements in each program description). International applicants whose native language is not English, or who have not attained a baccalaureate or higher degree from an English-speaking institution, also must submit TOEFL or IELTS scores.
4. A minimum of two letters of recommendation attesting to the academic ability or other qualifications of the applicant.
5. Statement of academic and/or long range goals.
6. Verification of financial status (for all international students).

International Applicants

In addition to the above requirements, international applicants must submit official academic records in the original language accompanied by certified English translations. These translations must bear the embossed seal or inked stamp of the issuing institution or government agency and the original signature of the translator. Translations must be complete and exact word-for-word translations of the original documents. International applicants with a Grade Point Average of less than a B (or equivalent)

in their undergraduate work or less than a B in 12 or more credits of post-baccalaureate work are not eligible for admission.

Minimum Qualifications for Acceptance

Baccalaureate Degree

Each applicant must hold a baccalaureate degree or graduate degree from a regionally accredited U.S. college or university, or its equivalent from a recognized non-U.S. institution of higher learning. The standards of the degree in question must be equivalent in scholarship requirements to those maintained in the undergraduate program at the University of Hawai'i at Hilo.

Graduate Record Examination (GRE)

The GRE is required for most applicants for acceptance. Some programs may require a professional test specific to the program of study in lieu of the GRE for admission purposes. Minimum scores on the GRE or professional tests are set individually for each program. Applicants who have completed a graduate program at a regionally-accredited U.S. institution or its equivalent from a recognized non-U.S. institution are not required to submit GRE scores.

Test of English As A Foreign Language (TOEFL)

In addition to above requirements, an applicant whose native language is not English must demonstrate English language proficiency as a partial admissions requirement. Evidence of proficiency in English is successful completion of the Test of English as a Foreign Language (TOEFL) with a minimum score of 550 (paper version), of 213 (computer version), or 79 (internet version). The minimum IELTS score is 6.0. Applicants who have baccalaureate degrees from English-speaking institutions are exempt from the TOEFL requirement.

International Transcripts: Transcripts from international institutions where a bachelor's degree was awarded must be submitted to a transcript evaluation service. See list at:

hilo.hawaii.edu/studentaffairs/admissions/intlgradstudent.php

Please plan ahead to allow adequate time for processing of the evaluation of international transcripts, which may take a month or longer.

Grade Point Average (GPA)

The applicant must have a GPA of 3.0 or the equivalent from the last 60 semester credits (or equivalent) in the undergraduate degree completed, or must hold a graduate degree with a GPA of 3.0 or better in his/her graduate program. Please note: The meeting of minimum requirements does not assure acceptance into a UH Hilo graduate degree program. Acceptance into a graduate program is competitive and decided upon by each individual graduate program.

Admission Procedures

The Office of Admissions is responsible for accepting application materials for all graduate programs. Admissions professionals screen for minimum qualifications of each application and distribute completed applications to each respective program for decision of acceptance or rejection. The admissions committee within individual programs will make the final decision on applications that meet minimum university qualifications.

The application deadline for fall semester admission is February 1. The application deadline for spring semester admission, if appropriate, is November 1. Applications received after the priority deadlines will be considered on a space available basis. Each applicant will be notified

of receipt of the application. Incomplete applications will be held in the Office of Admissions until complete and ready for review by the graduate program. Applications that remain incomplete at the end of the selection process will be labeled as “incomplete,” and applicants will be denied admission. Applicants will be notified of this action.

Official notification of acceptance or rejection generally is mailed by the Office of Admissions between March 1 and May 30 for fall admission. For spring admission, notification is generally mailed between November 15 and December 15. Applicants should not make definite arrangements to attend the University until they receive formal notice of acceptance from the Office of Admissions.

Evaluation of transcripts of international students and of non-traditional grading will be done at the program level if the applicant meets other minimum qualifications. The Graduate Division and Office of Admissions will help with interpreting unusual grading practices and other special cases.

Classification of Students

Regular Admission

Regular admission may be granted to applicants who hold a baccalaureate degree with a grade point average (GPA) of 3.0 or better for the last 60 semester credits (or equivalent), or who hold a graduate degree with a GPA of 3.0 or better from an accredited institution. Determination of acceptance, however, is made by the admissions committees of individual programs. Students accepted by program admission committees are defined as “classified students.”

Denied Admission

Students whose academic records do not meet the minimum requirements, and/or whose admission is not supported by the program and the Graduate Division, will be denied admission.

Visiting Graduate Student

Applicants who are pursuing an advanced degree at another institution and who wish to study at UH Hilo for a limited time may apply for admission as visiting graduate students. To be eligible, applicants must be enrolled in and actively pursuing a graduate degree program at a regionally accredited institution of higher education or an equivalent degree at a recognized non-U.S. institution of higher learning and be in good academic standing. Current transcripts from the home institution must be provided in order to determine academic standing and eligibility for specific classes at UH Hilo.

Visiting graduate students register on a space available basis and only in courses for which they are judged to be eligible by the instructor of the course and the chair of the individual graduate program. Visiting graduate students are limited to two semesters of study. Visiting graduate students will be asked to sign and return a contract upon acceptance agreeing to the two semester limitation.

Visiting graduate students must provide the same application materials as applicants for regular admission: the application, the application fee, statement of research interest/goals in the program, resume, three letters of recommendation, and official transcripts from all colleges and universities attended. The exception is that visiting graduate students do not need to provide official GRE scores. The program chair must approve their acceptance into the program. Visiting graduate students will be accepted as “classified graduate students.”

Visiting international graduate students must comply with certain application and enrollment regulations in order to qualify for an I-20 certificate of eligibility, which permits them to request an F-1 student visa. Regulations include providing a copy of a current passport, providing proof of adequate financial support, and maintaining full time enrollment (6 credits per semester) while at UH Hilo. Please contact the UH Hilo Admissions Office for details.

Admission as a visiting graduate student does not guarantee subsequent admission as a regularly admitted graduate student. A visiting graduate student who decides to apply for admission as a regular graduate student must apply for acceptance via the standard admissions process as do all

other applicants.

Visiting graduate students who later become admitted as regular students may request to have courses taken under the visiting student status credited toward the new degree objective. They should consult with their graduate programs. The visiting student will submit the *Petition to Transfer, Substitute, and/or Waive Courses* form to the Office of the Registrar. The form must be signed by the student, the primary advisor (if applicable), the program chair and the Vice Chancellor for Academic Affairs (VCAA).

Unclassified Graduate Student

Students with documented baccalaureate degrees who do not meet the minimum requirements for admission to a program, or who for any other reason have not been formally accepted into a program, may attempt to register for selected courses. Such registration is done on a space-available basis, and is with the written consent of both the faculty teaching the course and the chair of the program. **Admission into a course as an unclassified graduate student does not guarantee admission as a regularly classified graduate student at a future date. A limit of 9 credit hours** at UH Hilo may be taken at the graduate level by unclassified graduate students in their academic career. Waivers to this rule may be granted with the permission of the instructor, graduate program chair, and chair of the Graduate Council (the latter acting on behalf of the Graduate Council) using the form **Permission to Enroll in Graduate Coursework as an Unclassified Student**.

Applicants who are sponsored by an educational institution or governmental agency and who wish to undertake a special program of study, research, or training without a degree objective may apply as unclassified graduate students. These students also are limited to 9 credit hours at UH Hilo.

All applicants for unclassified graduate student status are required to submit the following:

1. A graduate application;
2. Proof of baccalaureate degree;
3. A brief statement of objectives specific to each class in which the applicant hopes to enroll.

Unclassified graduate students are not required to submit the application fee, GRE scores, or letters of recommendation. If an unclassified graduate student later applies, and is accepted, into a graduate program, the student may petition for acceptance of credits taken while in unclassified status, **but acceptance of the petition by the graduate program is not assured.**

Undergraduate students in their final semester of coursework before being granted a baccalaureate degree may petition to take graduate coursework for credit in the status of an Unclassified Graduate Student. Permission must be received from the student's academic advisor, the graduate course instructor, and graduate program chair. This coursework must be in excess of the requirements for the baccalaureate degree. Failure of the student to obtain the baccalaureate degree at the end of the semester in which the graduate coursework is undertaken will invalidate any graduate credits from the coursework. Students must present evidence of successful completion of the baccalaureate degree to the Graduate Division Office. Submit the completed form **Permission for Submission of Credit Toward an Advanced Degree for Courses Taken by an Undergraduate** to the Office of the Registrar.

Additional Considerations

Concurrent Degrees

An applicant may apply to more than one graduate program but may enroll in only one program initially. Concurrent enrollment in more than one program is strongly discouraged. The individual programs applied for, however, will determine individually what constitutes the minimum course load, and the student (with the approval of both program chairs) may decide to attempt both programs.

Reapplication

Applicants who have been denied admission to a graduate program at

UH Hilo because of failure to meet academic standards may reapply for admission after completing at least 12 semester credits of post-baccalaureate course work. The courses must be numbered 400 or above and completed with a GPA of 3.0 or above.

Completion of additional course work does not guarantee admission. To be reconsidered for admission, applicants must follow the standard application process and will be considered along with all other applicants. If admitted, no more than 12 semester credits of relevant post-baccalaureate course work may be applied toward the new degree objective.

If Admitted, But Not Enrolled

Admission may not be postponed or deferred. Newly-admitted students who do not register during the semester for which they are admitted or who withdraw from all courses before the last day to drop are considered no-shows. Their admission status will be rendered invalid. To reapply for admission, they must contact the Office of Admissions for instructions.

Returning Student

If a student has not registered continuously, that student must reapply for admission. Readmission is not guaranteed.

International Student Documents

International student documents are processed by the International Admissions Officer. Visa questions will be handled by this office.

Graduate Tuition and Fees

Tuition for the 2014-2015 Academic Year

Graduate Students Other Than Pharmacy and Nursing

<i>Classification</i>	<i>PCH (per credit hour)</i>	<i>FT (full time)</i>
Resident	\$ 417.00	\$ 5,004.00/semester
Non-Resident	\$ 956.00	\$ 11,472.00/semester

Tuition for Summer 2014

Per Credit Hour (PCH): \$ 483.00

Pharmacy Doctoral Students

<i>Classification</i>	<i>PCH (per credit hour)</i>	<i>FT (full time)</i>
Resident	\$ 865.00	\$ 10,380.00/semester
Non-Resident	\$ 1,583.00	\$ 18,996.00/semester

Graduate Nursing Students

<i>Classification</i>	<i>PCH (per credit hour)</i>	<i>FT (full time)</i>
Resident	\$ 680.00	\$ 8,160.00/semester
Non-Resident	\$ 1,359.00	\$ 16,308.00/semester

Fees for the 2013-2014 Academic Year (Per Semester)

<i>Fee</i>	<i>1-4 Credits</i>	<i>5+ Credits</i>
Student Publications	\$ 9.00	\$18.00
Student Activities	9.00	18.00
Student Association	9.00	18.00
Campus Center	10.00	20.00
Media Broadcasting	6.50	13.00
Student Health	7.00	7.00
Student Life Center	78.00	78.00
TOTAL	\$128.50	\$172.00

Application Fee

A \$50 fee is required for all applicants. This fee is not refundable, not transferable to another semester, and is required each time an application is submitted.

Late Registration Fee

Students will be assessed a \$30.00 fee for registering during the late registration period, which begins on the first day of instruction.

Special Fees and Charges

<i>Fee/Charge</i>	<i>Amount</i>
Student Identification Card	\$ 10.00
Graduation Application Fee	15.00
Transcript of Record	5.00
Rush Transcript	15.00
Institutional Credit by Examination	15.00
Replacement of laboratory equipment	Cost of item(s) broken or lost

Registration and Degree Requirements

Registration

Entering graduate students register during the official registration period just prior to the start of fall classes, or in the case of programs that begin in the spring, just prior to the beginning of the spring semester. Continuing graduate students are encouraged to participate in early registration whenever possible. Graduate students must meet general guidelines and payment schedules set by the university.

Full-Time Registration Requirements for Students

Graduate students must register for six or more credits during the Fall or Spring semesters and, when applicable, three credits during the summer to be considered full time.

Academic Standards

A cumulative grade point average (GPA) of at least 3.0 (on a scale where A = 4.0) in courses required by the graduate program is required in order to maintain satisfactory academic standing and graduate degree certification. When the cumulative GPA falls below 3.0, the student will be placed on academic probation. Once a student is placed on probation, the student has two semesters to attain a cumulative GPA of 3.0 or higher, or the student will be dismissed.

No credit is granted for graduate courses in which a grade lower than a B- has been received. Grades lower than a B-, however, will appear on the student's transcript and will be computed into the student's GPA, although the student may not use the course for degree requirements.

Graduate students who do not meet other academic/program standards will be dismissed from their graduate program. This process entails a warning letter from the chair of the graduate program to the student. If the necessary academic standards are not attained within a period specified by the graduate program, the graduate program's chair recommends to the appropriate Dean that the student be dismissed from the program. Students will be notified of the intended action. Appeals of such action may be made in writing to the Vice Chancellor for Academic Affairs (VCAA) within ten business days.

Graduate Committees and Primary Academic Advisors

With the exception of certain professional programs, most graduate programs utilize a graduate committee system for advising and evaluating graduate students. At the Master's level, the committee is comprised of a minimum of three faculty members. One member will chair the committee and serve as the student's primary academic advisor. At least two members of a student's graduate committee must be full time tenured or tenure track faculty at UH Hilo.

For students in a non-thesis option, the graduate committee serves as an examination and evaluation body of the student's requirements as listed by the graduate program. For students utilizing a thesis option, the committee serves as the thesis committee. Acceptance or rejection of a student's work as fulfilling degree requirements is determined by a majority of the graduate committee.

Some professional programs may not utilize a graduate committee system. In these cases, a designated faculty member serves as the student's primary academic advisor. Acceptance or rejection of a student's work as fulfilling degree requirements is determined by a majority vote of the graduate program's faculty.

Minimum Residence Credits for Degree Certification

Regardless of any previous graduate experience, a minimum of 24 credit hours must be taken at UH Hilo before a degree can be granted. This is known as the “residence requirement,” and applies to all graduate degree programs at UH Hilo. At the graduate level, a maximum of six credit hours earned under courses designated as “thesis” may be counted toward the Graduate Division’s minimum residence requirement. Students continuing their studies for a doctoral degree in the same UH Hilo program from which they earned their masters’ degree need not fulfill a second residence requirement.

Minimum Credits in Graduate Level Courses

Students are required to complete a minimum of 24 credits in courses at the graduate level before a degree may be granted. Specific graduate programs may require additional credits at the graduate level or higher; students are advised to read program requirements and discuss them with their primary graduate advisor.

Use of Undergraduate Courses for Graduate Credit

Graduate students may take up to six credits in 400-level courses toward their graduate degree requirements with the prior approval of the primary advisor, graduate program chair and the Graduate Division. Courses numbered 499 may not be used for graduate credit. Credits used to meet requirements for an undergraduate degree may not be used to meet graduate program requirements. To register for 400-level courses, complete the **Petition to Transfer, Substitute, and/or Waive Courses form** and submit it to the Office of the Registrar.

Dual Level Courses

Some courses are dually listed at the 400- and 600-level. Courses identified by graduate programs as core courses are not eligible as dual level offerings. For dual level courses, credit in the graduate course is not available to students who have received credit in the corresponding undergraduate course.

Dual level courses must be evaluated as a unit based upon their specific content, including specification of differences in expectations for undergraduate and graduate students. Courses that have changing content from semester to semester, such as those ending in the numbers -94, -97 and -98, are not eligible for use in dual level offerings.

Overload Policy

Students may register for up to 15 credits without the approval of the graduate program chair. Any course load above 15 credits requires approval by both the graduate program chair and the Graduate Division. Students wishing to register for more than 15 credits must complete a **Student Overload Approval Form**. After obtaining the approval of the graduate program chair, the form must be submitted to the Graduate Division for approval. The Overload Form must be approved before the end of the add deadline and is submitted to the Office of the Registrar.

Incomplete Grades

An instructor may assign an Incomplete (I) when a student has done most of the course work satisfactorily, but because of unforeseen circumstances has not completed all course requirements. The Incomplete is not for the purpose of converting a failing grade, or unsatisfactory work, to a passing grade. The student must request the Incomplete option from the instructor, but it is the instructor’s decision as to whether it is appropriate or not.

Graduate students who are given a grade of “I” must complete the coursework before the due date listed in the university calendar. “I” grades that are not completed by this due date automatically are converted into “NC” grades. The instructor may set a deadline sooner than that listed in the university calendar, reflecting the instructor’s availability to extend his/her commitment beyond the course. The instructor, however, cannot extend the due date unless granted a specific waiver by the college Dean.

Some departments and programs may have more restrictive policies regarding incomplete grades. Students should confer with their academic advisors concerning departmental rules and expectations.

The incomplete policy has specific implications for students receiving tuition scholarships and other kinds of financial aid and for international students holding visas. Graduate students who receive federal or state aid may lose their eligibility if they receive Incompletes. See the **Financial Aid Satisfactory Academic Progress Policy**.

All courses taken by graduate students are subject to the above policy. Incomplete grades must be resolved before students can receive a graduate degree.

Repeating Courses for Credit

A few graduate courses (numbered 500 and above) are repeatable for credit. Examples include thesis research and courses that are approved via the curriculum review process as “repeatable for credit” (e.g. Special Topics classes).

Retaking Courses for a New Grade

With the exception of courses that are explicitly repeatable for credit (see above), graduate courses cannot be retaken unless approved by the program chair and graduate division prior to registration. With the permission of the graduate program chair, courses may be retaken, but not for additional credits. No more than two courses may be retaken, and no graduate level course may be retaken more than once during the student’s graduate career. The grade received will be averaged with the previous grade in that course in computing the UH Hilo cumulative grade point average (GPA). For graduation purposes, however, a program grade point average may be computed which includes only the grades earned in the courses that are part of the student’s graduate program. A statement which specifies the recomputed program GPA will be reflected on the student’s academic records and transcript. Submit the completed **Graduate Repeat Course Notification Form** to the Office of the Registrar.

Continuous Registration

All students admitted to a degree-granting program must maintain continuous registration each semester for at least one credit hour. Students who do not register will be removed from the graduate program and will be required to reapply to the Graduate Division. Students do not need to maintain matriculation during the summer session unless final degree requirements are to be completed during this period. Students must be registered during the semester when the degree is granted.

Leave of Absence

Under exceptional situations, students may apply for a Leave of Absence. Students on leave are excused from the registration requirement during the period of the leave. Leaves are normally granted for six months with an extension of 6 months for a total of up to one year. A Leave of Absence is granted only in exceptional circumstances, such as illness or other unusual personal hardship, and requires detailed justification. Leaves of Absence are not granted to students who wish to absent themselves to undertake thesis or dissertation research elsewhere. If possible, requests for Leaves of Absence should be submitted one month prior to the semester for which the leave is requested. Students must complete a **Returning Student Application** upon return.

Withdrawals

Students who withdraw from courses for which they are registered at the University must follow a formal withdrawal procedure if they wish their record to indicate good standing. Absence from class does not constitute due notice of withdrawal. No grades are recorded for students who formally withdraw by the listed withdrawal date that is noted in the Catalog. Withdrawal from all classes after the listed withdrawal date may be granted, but only in exceptional circumstances, such as illness or other unusual personal hardship, and requires detailed justification. Withdrawal from classes may affect financial aid eligibility. See the **Financial Aid Satisfactory Academic Progress Policy** in the **UH Hilo Guide to Financial Aid**. For international students, student visas require that

students be registered as full time, so withdrawal from courses may result in a failure to meet visa requirements.

Transfer of Graduate Credits

Students matriculated in advanced degree programs must petition to have previously earned graduate credits from other institutions transferred toward their University of Hawai'i at Hilo graduate degrees within their first semester at UH Hilo. Using the Graduate Division's **Petition to Transfer, Substitute, and/or Waive Courses form**, students submit this petition to their graduate program. A copy of the official transcript from the other institution must be on file with the Graduate Division, and a course description or syllabus should be provided by the student.

Credits petitioned for transfer must be relevant to the student's UH Hilo degree program, must have been earned at a regionally accredited university, must not have been used to satisfy the requirements of another degree, and must have been earned in graduate-level courses for which the student earned at least a B. In cases where a graduate student wishes to take graduate coursework elsewhere for transfer credit during their tenure at UH Hilo, the course work must be **pre-approved, using the Petition to Transfer, Substitute, and/or Waive Courses**, by the student's primary academic advisor and graduate program chair. Petition for transfer of these credits must be completed within a semester of completion of the course work, and will otherwise be subject to the same regulations as credits petitioned for transfer from before the student's acceptance to UH Hilo.

Credits earned through correspondence courses or through courses or experiences offered under the auspices of proprietary schools, business or industrial training programs, or schools conducted by federal agencies such as the Department of Defense normally are not considered for transfer.

Courses taken more than five years prior to matriculation in the Graduate Division are accepted only when the graduate program chair attaches a statement justifying the transfer.

The graduate chair in the student's program forwards all approved petitions to the Graduate Division or designee for final approval. Approved transfer credits will be included on the student's official Graduate School transcript as a single entry of total credits accepted in transfer. Letter grades from transfer credits are not considered in the determination of grade-point average.

Limitations on the number of credits acceptable in transfer are set in the first instance by the minimum residence requirement of 24 credit hours for any advanced degree; transfer credits cannot be applied toward the residence requirement. For example, for a master's program requiring a minimum of 30 credit hours, no more than six transfer credits may be applied toward the degree. When graduate programs require more than 30 credit hours, the Graduate Division or designee may accept a correspondingly larger number of transfer credits.

Policy Prohibiting the Awarding of a Second Degree in the Same Field

The UH Hilo policy is that a second degree at the same level (master's or doctoral) can be awarded only when a significant amount of additional coursework in a different field is completed. Normally students who have already earned a master's or doctoral degree in a given discipline at either a foreign or U.S. institution may not earn a second degree in a similar field at the same level from UH Hilo.

Transcript Notations of Approved Concentrations Within a Major Program

For each advanced-degree recipient, approved concentrations, or specializations, may be listed on the official graduate transcript, along with the graduate major. Such listings are limited to two concentrations. In addition to the titles of approved and satisfactorily completed majors and concentrations, official graduate transcripts show the titles of doctoral dissertations and master's theses. All such special transcript listings are made only at the time of completion of final degree requirements.

Courses Taken in Other Graduate Programs at UH Hilo

Graduate students may take courses offered by other graduate programs at the university with the consent of the course's instructor. These other courses may count toward the student's degree program only with the authorization of the student's graduate program, and this authorization must be obtained before the student registers for the course.

Waiver of Regulations and Requirements

Some Graduate Division regulations and/or program requirements may be waived by the VCAA or designee in exceptional individual instances. A petition for waiver must be endorsed by the student's graduate program committee or graduate chair, who append their reasons for believing that the waiver request would not breach the spirit of the specified regulation or requirement.

Requirements for Candidates for Master's Degrees

Advising and Guidance from the Graduate Committee

At the beginning of a student's work toward the master's degree, the chair of the student's graduate program, in consultation with the student, designates a primary academic advisor. The primary academic advisor may be the chair of the graduate program or another faculty member. This advisor also may serve as chair of the student's graduate committee. The graduate committee, when required by the program, will consist of a minimum of three members who meet periodically with the student to discuss his or her progress.

Requirements for a Master's Degree

The Catalog stipulates the specific requirements for a master's degree in each program of the University. The minimum requirements include the following:

1. Students must maintain continuous registration, including the semester in which the degree is awarded.
2. Students must complete at least 24 credit hours of graduate coursework in residence. A minimum total of 30 credit hours of graduate coursework are required for all master's degrees. A maximum of six hours of transfer credit is allowed for programs requiring 30 credit hours; additional credit hours may be accepted for transfer if more than 30 credit hours are earned, as long as the 24 credit minimum in residence is maintained.
3. Graduate students must maintain at least a B average in courses approved by the program or graduate committee and presented for the degree.
4. Students must fulfill all departmental or school course requirements. (No credit is granted for graduate courses in which a grade lower than a B- has been received).
5. Students must complete all other requirements as listed by the specific graduate program.
6. Students must complete all requirements, including thesis if required by the program, within five years after admission to the Graduate Division.

There are specific **Graduate Level Forms** (Form 1, Form 2, Form 3, Form 4) used to mark the student's progress through the graduate program; they are available through the Office of the Registrar's website (hilo.hawaii.edu/registrar/forms.php). They should be completed in collaboration with the primary academic advisor and submitted within the stated deadlines. Other useful forms are also posted at this site.

Examination

If a general examination is required for the student's master's degree, the examination may be written, oral, or a combination of both. The decision for pass or fail shall be by majority vote of the graduate committee in programs that utilize a graduate committee. In programs that do not use graduate committees, the program faculty by majority vote shall determine whether the student has passed or failed.

Thesis

Evaluation

If a thesis is required for the student's master's degree, the graduate committee, or the program faculty in programs that do not use graduate committees, will supervise and approve the thesis. Programs may designate additional examiners for the master's thesis beyond the student's graduate committee. Students must receive approval from the **Institutional Review Board (IRB)** for theses involving human subjects or from the **Institutional Animal Care and Use Committee (IACUC)** for theses involving use of vertebrate animals. Approval from these institutional committees, where appropriate, must be sought at the time of approval of the thesis topic, and research on the thesis may not commence until after IRB and/or IACUC approval is granted. Where appropriate, permission from other entities, such as the **Institutional Biosafety Committee**, may be required.

Submission and Publication

It is the student's responsibility to prepare a final manuscript that meets the style requirements of both the UH Hilo Graduate Division and his or her graduate program. Details on these requirements may be found in the Graduate Student Handbook.

Publication is required for the thesis. UH Hilo uses ProQuest/UMI's ETD Administrator, a web-based service for the submission and publication of student theses and dissertations. If online submission is unfeasible, please contact the Mookini Library or call (808) 932-7296 for assistance.

Annual Review Form

The primary academic advisor will submit an annual review form for each graduate student under her or his charge to the chair of the graduate program, using the form provided by their graduate program. This form will include data concerning number of credits earned; progress toward meeting other requirements such as papers, projects or theses; GPA; and other specific requirements for the graduate degree.

Awarding of the Degree

When a student has satisfied the requirements for a master's degree, the chair of the student's graduate program submits **Form 4: Certification of Degree Requirements** to the Graduate Division by the required deadline. If submitting a thesis, this form should be submitted with the thesis when possible.

Deadlines

Degree completion dates will be posted on the academic calendar. Those who have not completed all degree requirements by the established deadlines will be required to register the following semester.

Degree Conferral and Commencement

Degrees are conferred three times each year: December, May, and July. Students who complete degree requirements late in the summer or in the fall semester are awarded degrees in December. Students who complete degree requirements in the spring semester are awarded degrees in May. Students who complete degree requirements in early summer are awarded degrees in July.

To participate in the commencement ceremony, the student's graduate program must submit **Form 4: Certification of Degree Requirements** to the Graduate Division by the required deadline. Commencement exercises are held only in December and May.

Completion Letter

Students who complete all requirements for the degree well in advance of the award of the degree may, upon request, receive a statement from the VCAA or designee certifying that all requirements for the degree have been completed.

Checklist for Completion of Degree Requirements

Master's Degree (non-thesis option)

- ✓ **Graduate program:** Appoints primary academic advisor and, where appropriate, graduate committee, in consultation with the student. If a graduate committee is used, submits **Form 1: Graduate Committee Formation** to the Office of the Registrar.
- ✓ **Student:** Satisfies residence and course requirements.
- ✓ **Student:** Maintains continuous enrollment in program.
- ✓ **Student:** Completes any other program requirements.
- ✓ **Student:** Registers for semester in which degree requirements will be completed.
- ✓ **Student:** Submits **Application for Graduation** form to the Business Office by the required deadline.
- ✓ **Student:** Passes final examination, and/or passes requirements for papers or projects as specified by the graduate program.
- ✓ **Student:** Completes all other requirements specified by the graduate program.
- ✓ **Graduate program:** Submits **Form 4: Certification of Degree Requirements** with appropriate signatures to the Graduate Division and to the Office of the Registrar by the required deadline.

Master's Degree (thesis option)

- ✓ **Graduate program:** Assigns primary advisor and committee. Submits **Form 1: Graduate Committee Formation** to the Office of the Registrar.
- ✓ **Student:** Submits **Form 2: Thesis/Dissertation Proposal** when ready to begin thesis.
- ✓ **Student:** Satisfies residence and course requirements.
- ✓ **Student:** Maintains continuous enrollment in program.
- ✓ **Student:** Completes coursework required for the degree.
- ✓ **Student:** Completes any other program requirements.
- ✓ **Student:** Passes general examination if required.
- ✓ **Student:** Registers for semester in which degree requirements will be completed.
- ✓ **Student:** Submits **Application for Graduation form** to the Business Office by the required deadline.
- ✓ **Student:** Defends and completes thesis.
- ✓ **Student:** Obtains signatures of committee members, Graduate Program Chair, and the VCRED on **Form 3: Thesis/Dissertation Completion**.
- ✓ **Student:** Submits dissertation on ETD Administrator.
- ✓ **Student:** Obtains initials of the Collection Development Librarian (or designee) on Form 3, then submits form to the Graduate Division for signature, and finally to the Office of the Registrar by the required deadline in the University calendar.
- ✓ **Graduate program:** Submits **Form 4: Certification of Degree Requirements** to the Graduate Division when student submits thesis by required deadline. Form is then submitted to the Office of the Registrar.

Requirements for Candidates for Doctoral Degrees

Admission to Doctoral Work

For masters' degree candidates intending to continue into the doctoral program in the same graduate program, the student's graduate committee, at a designated time near the completion of the student's masters' work, decides whether or not to admit the student to the doctoral program. This will be indicated on the form **Petition to Continue from a Master's Program to a Doctoral Program**, submitted to the Graduate Division by the program. For entry into a UH Hilo doctoral program from a masters' program at another university, or from a masters' program in a different discipline at UH Hilo, students follow the regular graduate application and admission procedures.

Beginning the Program

At the beginning of the student's doctoral work, the chair of the graduate program appoints a primary academic advisor or graduate committee (whose chair is the principal advisor). The initial advisor assists the student in planning coursework and in understanding the program structure and requirements; the advisor has primary responsibility for monitoring the progress of the student's work. The advisor may or may not become the student's graduate committee chair at a later stage in his or her studies. The initial advisor should meet with the student at least once each semester.

Requirements for a Doctoral Degree

The Graduate Catalog stipulates the specific requirements for the doctoral degree in each program. The requirements include:

1. Maintenance of at least a B average in courses approved by the program's graduate committee and presented for the degree.
2. Fulfillment of all program course requirements (no credit is granted for graduate courses in which a grade lower than B- has been received).
3. Completion of at least 24 credit hours in residence regardless of any previous graduate coursework elsewhere. **Students continuing their studies for a doctoral degree in the same UH Hilo program from which they earned their masters' degree need not fulfill a second residence requirement.**
4. Continuous registration including the semester in which final degree requirements are completed (this does not include summer terms).
5. Demonstration to the graduate committee by means of a comprehensive examination (written and/or oral) of familiarity with basic hypotheses and techniques of the discipline and competence in applying them.
6. Fulfillment of any research skills requirements.
7. Submission of a dissertation on a topic approved by the department or school, embodying the results of original research and giving evidence of high scholarship.
8. Successful defense of the dissertation at a final oral examination.
9. Completion of any other requirements specific to the graduate program.

Research Skills Requirements

Each graduate program establishes foreign language reading competency or equivalent research skills for its students. The graduate program determines the method(s) to be used to fulfill these requirements. Graduate students may register for research skills courses that have been established in each program.

Comprehensive Examination

A comprehensive or proficiency examination is used to test candidates' specialized knowledge in the discipline and to demonstrate that they are qualified to undertake advanced-level dissertation work. The comprehensive examination may be written and/or oral.

The student's graduate committee serves as the examination committee, and this body determines the outcome of the examination. The student may repeat all or part of the comprehensive examination only once without prior approval from the Vice Chancellor for Academic Affairs (VCAA) or designee. The student has five years to complete the doctorate after passing the comprehensive examination.

Dissertation Planning

After the student passes the comprehensive examination, the student's graduate committee will oversee the dissertation work. The committee will include an additional member chosen from a field outside the graduate program or from a similar field but from a different university, appointed by the VCAA or designee. Based on the student's recommendations, the committee is appointed by the chair of the student's graduate program. Two of the three regular members of the committee must be full time faculty at UH Hilo. Students must receive approval from the **Institutional Review Board (IRB)** for theses involving human subjects or from the **Institutional Animal Care and Use Committee** for dissertations involving use of vertebrate animals. IRB approval, where appropriate, must be sought at the time of approval of the dissertation topic, and research on the dissertation may not commence until after IRB approval is granted. Where appropriate, permission from other entities, such as the **Institutional Biosafety Committee**, may be required.

Committees are formed and modified (if necessary) by mutual agreement between the student and the faculty. The principal dissertation supervisor serves as chair of the graduate committee. Faculty are not required to serve on a particular dissertation committee if they do not wish to, and they are entitled to withdraw from a dissertation committee for reasonable cause. Faculty members from outside the student's own department or school may serve on the dissertation committee, but they do not replace the outside examiner, who is appointed by the VCAA before the final oral examination is scheduled.

Visiting, affiliate, and research faculty of UH Hilo (not holding the rank of Professor, Associate Professor, or Assistant Professor) may be appointed to a dissertation committee by the VCAA or designee upon recommendation of the program for a period not to exceed their term appointment at UH Hilo. If such term appointment is renewed, the member may continue to serve on the student's graduate committee.

Prospectus

The prospectus functions to identify the topic to be undertaken in the dissertation and to formalize the approval of the project by a faculty committee. The timing, format, length, and conventions governing the prospectus are set by each graduate program. If the student's program requires a prospectus, the student should submit it within six months after being admitted to candidacy; the prospectus must first be approved by the dissertation committee. In a conventional prospectus, a student is asked to identify a topic, to summarize relevant backgrounds, and to explain the approach. Some programs substitute for the prospectus another means of ensuring that the student's project has been identified clearly and has received written approval by each member of the committee.

Before approving the dissertation project, the chair of the graduate committee is encouraged to arrange a conference with the student and the other committee members for the purpose of discussing the research topic. Each program must inform doctoral students of its expectations, standards, and procedures regarding the prospectus or other approval of dissertation projects and must provide access to samples of accepted proposals or prospectuses. Graduate programs should include specific information about their expectations for a prospectus in advising manuals for graduate students.

Admission to Candidacy

After the student has passed the comprehensive examinations and met all research skills and coursework requirements, as certified by the program's submission of the **Recommendation for Admission to Candidacy for a Doctoral Degree form**, he or she will be officially admitted to candidacy for the doctoral degree by the VCAA. This is generally done in the semester in which the student plans to complete the dissertation. Intra- and inter-program majors and minors should be declared at this time where applicable.

By the end of the second semester of coursework in a doctoral program, **Form 1: Graduate Committee Formation** should be submitted.

At least two semesters normally elapse between admission to candidacy and the granting of the degree. Doctoral candidates must complete all requirements for the degree, including the dissertation, within five years after admission to doctoral candidacy.

Dissertation Defense

The graduate committee has direct charge of all matters pertaining to the dissertation. The student's dissertation must have the unanimous approval of his or her dissertation committee and of the chair of the graduate program before arrangements are made for the final examination for the degree. Members of the student's graduate committee serve as the examination committee. Students must receive approval from the **Institutional Board (IRB)** for dissertations involving human subjects or from the **Institutional Animal Care and Use Committee (IACUC)** for dissertations involving use of vertebrate animals. IRB and/or IACUC approval, where appropriate, must be sought at the time of approval of the dissertation topic, and research on the dissertation may not commence until after IRB approval is granted. Where appropriate, permission from other entities, such as the **Institutional Biosafety Committee**, may be required.

Outside member

1. In consultation with his or her committee chair, the student will identify a UH faculty member from outside of the student's graduate program to serve as an outside voting member of the dissertation committee.
2. The outside member must possess sufficient familiarity with the student's research topic to be able to review and comment on the manuscript.
3. The committee chair must ascertain that the outside member is indeed independent of the faculty in the student's graduate program and that his or her membership on the committee will not constitute any conflict of interest.
4. The outside member fulfills the following functions:
 1. Represents the University faculty on the committee, ensuring administration of proper procedures and fair treatment of the student;
 2. Ensures that the level of research is indeed appropriate to the student's degree objective; and
 3. Provides disciplinary expertise and an academic perspective that may not be possessed by the faculty of the student's graduate program.
5. The approval process for the outside member is as follows
 1. The student and committee chair will forward the name of the proposed outside committee member to the Graduate Council.
 2. If the Graduate Council affirms the selection, the name will be sent forward to the VCAA for final approval.
 3. If the Graduate Council does not affirm the selection, the VCAA will determine how to resolve the disagreement; final selection will rest with the VCAA if the disagreement cannot be resolved between the candidate/committee chair and the Graduate Council.

External Examiner

The VCAA or designee, upon recommendation from the graduate program, adds an external examiner to the examination committee as the representative of the Graduate Division and the university. The external examiner is either a UH Hilo faculty member from a related area outside the student's graduate program or someone from a related discipline outside the University. Normally, the external examiner will have no involvement in the supervision of the student's dissertation. The external examiner's function on the examination committee is to render an independent judgment and to assure that the dissertation satisfies Graduate Division standards. Because the external examiner is supposed to serve the Graduate Division, s/he therefore must have substantial experience evaluating the scholarship/research of doctoral students (e.g., by being part of a graduate program, on graduate committees, supervising graduate research).

In special circumstances, particularly when a student would benefit from early counsel from a faculty member outside UH Hilo, the department chair or director of graduate studies can petition the VCAA or designee to appoint an external examiner while the dissertation is still being written. If the nominee is from another institution, the program chair should forward the nominee's academic credentials, including a vita, to the VCAA or designee to be evaluated. The VCAA or designee then invites the nominee or another faculty member to serve as external examiner.

Final Oral Exam (Dissertation Defense)

After the student's program has been notified of the appointment of an outside examiner, the program director, in conjunction with the chair of the examination committee, may proceed to schedule the final oral examination.

Because of the time required to give adequate consideration to the student's research, the student should submit the dissertation to the graduate committee well in advance of the final oral defense. Normally, two months is recommended; the student should consult the committee.

The final oral examination is open to any person wishing to attend. Members of the graduate committee must be given sufficient time to question the candidate about the dissertation. The final defense is a public examination, however, and the committee chair is responsible for the conduct of an open and impartial examination, including reasonable participation by observers. At the conclusion of the examination, it is customary for the chair to request that everyone except the graduate committee leave the room, so that the members may reach a decision. This procedure should not be invoked at any other time during the examination and should not preclude questions from either committee members or outside observers. The final oral examination shall not exceed 4 hours in length.

No member of a graduate committee can be expected to participate in a dissertation defense if that member has not had at least two weeks to read and consider the dissertation beforehand.

At the final examination, the student will be required to respond to examiners' questions concerning the dissertation and to defend the validity of the dissertation. To pass, the student must receive unanimous approval from the total graduate committee present. All members of the graduate committee who accept the dissertation in partial fulfillment of requirements for the doctorate shall so attest by their signatures on **Form 3: Thesis/Dissertation Completion**. If the outside examiner does not signify approval in this manner, he or she should give the reason for dissent by submitting a separate memorandum to the VCAA or designee within three days of the examination.

If at the final examination the examiners generally approve of the dissertation but require significant changes and are not yet prepared to sign **Form 4: Certification of Degree Requirements**, the chair of the graduate committee will coordinate with other members of the committee to compile all required changes and will inform the student of the scope and substance of those changes. The committee will establish how the changes will be reviewed and approved.

Following the oral exam and approval of the dissertation, the chair of the graduate program submits to the Graduate Division the signed **Form 4: Certification of Degree Requirements** form, indicating that the student

has now fulfilled all academic requirements for the doctoral degree and has successfully defended the dissertation. Members of the dissertation committee sign the signature page in the original copy of the dissertation after required revisions are included; the outside examiner does not sign the signature page.

Remote Participation

Normally, all members of the graduate committee and the outside examiner are present at the defense. At the discretion of the program, with the unanimous consent of all members of the graduate committee and the student, committee members or the outside examiner may participate in the defense via real-time teleconferencing or real-time videoconferencing. In all cases, the chair and at least one other member of the dissertation committee must be physically present.

If in exceptional circumstances one member of the graduate committee cannot be present (either physically or virtually), they may submit questions and comments in writing. Such arrangements must be approved in advance by the program and must have the unanimous consent of all other members of the graduate committee and the student.

Dissertation Submission and Publication

It is the student's responsibility to prepare a final manuscript that meets the style requirements of both the UH Hilo Graduate Division and his or her graduate program. Details on these requirements may be found in the *Graduate Student Handbook*.

Publication is required for the dissertation. The University of Hawai'i at Hilo uses ProQuest/UMI's ETD Administrator, a web-based service for the submission and publication of student theses and dissertations. In the case where online submission is unfeasible, please contact the Mookini Library or call (808) 974-7346 for assistance.

Deadlines

Degree completion deadlines are noted in the University calendar.

Degree Conferral and Commencement

As noted under Master's degree requirements.

Completion Letter

Students who complete all degree requirements well in advance of the awarding of the degree may, upon request, receive a statement from the VCAA or designee certifying that all requirements for the degree have been completed.

Checklist for Completion of Degree Requirements of Doctoral Degree

- **Graduate program:** Nominates external examiner by memo to the VCAA or designee.
 - **VCAA or designee:** Appoints external examiner and so notifies the graduate program.
 - **Student:** Passes final oral examination.
 - **Student:** Obtains signatures of committee members, Graduate Program Chair, and the VCAA on Form 3: Thesis/Dissertation Completion.
 - **Student:** Submits dissertation on ETD Administrator.
 - **Student:** Obtains initials of the Collection Development Librarian (or designee) on Form 3, then submits form to the Graduate Division for signature, and finally to the Office of the Registrar by the required deadline in the University calendar.
 - **Student:** Completes the *Survey of Earned Doctorates* (optional). Details may be found in the *Graduate Student Handbook*.
 - **Graduate program:** Submits **Form 4: Certification of Degree Requirements** to the Graduate Division.
- **Graduate program:** Assigns principal academic advisor and graduate committee. Submits **Form 1: Graduate Committee Formation**.
 - **Student:** Submits **Form 2: Thesis/Dissertation Proposal** when ready to begin thesis.
 - **Student:** Satisfies residence and course requirements.
 - **Student:** Passes research skills examinations (if required).
 - **Graduate program:** Arranges comprehensive examination.
 - **Student:** Takes comprehensive examination.
 - **Student:** Writes a prospectus.
 - **Graduate program:** Submits **Recommendation for Admission to Candidacy for a Doctoral Degree** form to the Graduate Division by the required deadline.
 - **Student:** Maintains appropriate registration for dissertation credit each semester, including semester in which all degree requirements will be completed.
 - **Student:** Completes dissertation.
 - **Graduate program:** Nominates outside member by memo to the VCAA or designee.
 - **VCAA or designee:** Appoints outside committee member and so notifies the graduate program.

Graduate Student Rights and Responsibilities

Policy on Academic Dishonesty

Graduate students are subject to the policies and procedures governing student conduct as described in the UH Hilo Student Conduct Code. This includes acts of academic dishonesty, including, but not limited to, plagiarism, cheating, and falsifying data. Students can find these policies in the **Academic Dishonesty** section of this Catalog.

Policy on Conduct Violations Other than Academic Dishonesty

Instances in which graduate students are alleged to have violated the UH Hilo Student Conduct Code in areas other than academic dishonesty will be handled following the procedures described in the Student Conduct Code. These procedures are described in the Student Conduct Code section of this catalog.

Conduct and Removal of Financial Support

All other recommendations to dismiss a student from the Graduate Division or one of its programs, or to break a student's assistantship

contract or to revoke a fellowship, tuition scholarship, or other source of financial support, are made to the VCAA, accompanied by appropriate documentation. The student will be informed of the basis for any such decision. The student may appeal the decision by using first the grievance procedure of the student's program and then, if needed, the appeals procedures of the Graduate Council Grievance Committee. Action on a recommendation to remove support from or to dismiss a student in good academic standing will await the outcome of the grievance procedure.

Academic Complaints

The process for handling academic complaints by graduate students will follow the same general procedure as utilized for undergraduate students at UH Hilo. This procedure is outlined in the **University of Hawai'i at Hilo Student Academic Complaint Policy**. The following exception is made for graduate students:

Under Part III (Procedures for the Resolution of Academic Complaints Filed During the Regular Academic Year) Letter B (Complaint of Academic Impropriety), for complaints relating to academic impropriety involving graduate students, the Dean shall refer the written complaint to the UH Hilo Graduate Council (Academic Complaints Committee) for timely review and recommendation (10 calendar days) before taking action.

MA in China-U.S. Relations

The MA in China-US Relations program is not accepting new students at this time. Current students should contact Professor Tam Vu, tamv@hawaii.edu, (808) 932-7485; and are assured that they can complete the program requirements in place when they entered the program.

MA in Counseling Psychology

Program Director:

Bryan Kim, Ph.D. (bryankim@hawaii.edu)
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200 West Kāwili Street Hilo, HI 96720

Phone: (808) 972-7090

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Sunyoung Kim, Ph.D. sk47@hawaii.edu
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Program Description

Counseling psychology as a psychological specialty aims at facilitating personal and interpersonal functioning across the life span with a focus on emotional, social, vocational, educational, health-related, developmental, and organizational concerns. Through the integration of theory, research, and practice, and with sensitivity to multicultural issues, this specialty encompasses a broad range of practices that help people improve their well-being, alleviate distress and maladjustment, resolve crises, and increase their ability to live more highly functioning lives. Counseling psychology is unique in its attention both to normal developmental issues and to problems associated with physical, emotional, and mental disorders.

Accreditation

The Master of Arts program in counseling psychology is accredited through 2021 by the Masters in Psychology and Counseling Accreditation Council (MPCAC), 595 New Loudon Road #265 Latham, New York 12110; mpcacaccreditation.org

Admission Requirements

To be eligible for admission to the Master of Arts in Counseling Psychology program, students must meet the following minimum requirements:

- A baccalaureate degree from a regionally-accredited institution;
- A cumulative GPA of 3.0 on a 4.0 scale;
- A strong background in psychology or a closely-related field, with a minimum of 15 semester hours of course work in psychology; strongly recommended are an introductory or survey of psychology, statistical techniques, research methods, and at least two 300-level or higher psychology courses. For these 15 semester hours, similar courses in closely-related fields of study may also be acceptable;
- At least one 3-semester-credit course in statistics and one 3-semester-credit course in research methods from any discipline;
- A score of 550 on the TOEFL (required of applicants for whom English is not their native language and whose undergraduate degree was earned in a non-English speaking country).

Meeting the minimum requirements does not guarantee admission. Eligible applications are reviewed by the Psychology Graduate Admissions Committee, which uses multiple criteria for the assessment of applicants.

Admission is selective. Priority may be given to students applying for full-time enrollment. Depending on program needs, a few outstanding applicants for part-time enrollment may be admitted.

Application Procedure

The application priority deadline for Fall admission is February 1. Applications received in the UH Hilo Graduate Office of Admissions after the deadline will be considered only on a space available basis by the program. Students who submit applications after the February 1 deadline may not be eligible for certain types of financial aid.

Complete applications that meet the minimum admission requirements will be forwarded to the Psychology Department's Graduate Admissions Committee which will review each application. Admission decisions will be made by this committee and forwarded to the UH Hilo Graduate Office of Admissions.

The UH Hilo Graduate Office of Admissions receives applications and supporting documents and maintains the applications through final notification. In general, for applications received by the priority deadline, Admissions will notify each applicant of acceptance or rejection by March 15.

Applicants must submit all of the following items:

- UH Hilo Graduate application form;
- Application fee;
- Official transcripts from all colleges or universities attended (must be received directly from the institution or in a sealed envelope if submitted with your application);
- Personal statement (see the program website);
- Resume;
- Three professional recommendation letters, which may use the special recommendation forms (not required, however) included with the application materials. The recommendations should be sent directly to the UH Hilo Graduate Office of Admissions by the referees;
- GRE general test scores (sent to UH Hilo directly by the testing service).

In addition, international applicants must submit the following items:

- Supplementary Information Form for Foreign Students (hilo.hawaii.edu/forms/);
- TOEFL scores (if English is not the applicant's native language);
- Official college transcripts in the original language accompanied by official translations into English.

Applications will be considered only when all of the above documents have been received. For more detailed information and to download application forms, students may use the program website. Application forms also may be obtained from:

UH Hilo Graduate Office of Admissions

Student Services Building
200 West Kāwili Street
Hilo, HI 96720-4091

Phone: (808) 932-7446 or (808) 897-4456; **Fax:** (808) 932-7459

Email: uhhadm@hawaii.edu

Web: hilo.hawaii.edu/studentaffairs/admissions/

Transfer of Credits

Requests for transfer of credits must be made during the first semester in which the student is enrolled in the program. Students need to obtain departmental approval for all credit transfers. Only credit hours with a grade of B or better from accredited universities are transferable. Credit hours for practicum and internship courses are not transferable. Transfer credit hours must have been completed within five years prior to admission. Students may transfer a maximum of 12 semester hours (or the equivalent). On rare circumstances, requests for an exception to the 12-credit limit could be considered by the program faculty. All requests for transfer of credits must be accompanied by a transcript and course syllabi.

Program Curriculum

Total semester hours required: 60

Required courses (51 semester hours):

- PSY 601 Applied Multivariate Statistics (4)
- PSY 602 Research Methodology and Program Evaluation (3)
- PSY 603 Psychological Assessment (4)
- PSY 604 Professional Identity, Ethics, and Legal Issues (3)
- PSY 611 Lifespan Human Development (3)
- PSY 612 Career Development (3)
- PSY 613 Psychopathology over the Lifespan (3)
- PSY 620 Counseling Theories (3)
- PSY 622 Group Work and Counseling (4)
- PSY 623 Social and Cultural Foundations (3)
- PSY 624 Counseling Skills (3)
- PSY 640 Counseling Practicum (6)
- PSY 659 Internship (9)

Electives (9 semester hours required):

- PSY 614 Family System (3)
- PSY 641 School Behavior, Adjustment, and Problems (3)
- PSY 642 Educational and Vocational Assessment (3)
- PSY 643 School and Career Guidance and Consultation (3)
- PSY 651 Theories of Family Counseling (3)
- PSY 652 Couple Counseling (3)
- PSY 656 Child Maltreatment (3)
- PSY 694 Advanced Topics (3)
- PSY 699 Directed Studies (3)
- PSY 700 Thesis Research (repeatable) (1–6)

Master of Education (M.Ed.)

Program Chair: Jan Zulich, Ph.D.

Office: University Classroom Building 322, (808) 932-7106

Web: hilo.hawaii.edu/academics/education/ or
hilo.hawaii.edu/depts/education/

Professors:

Jan Zulich, Ph.D.

Associate Professors:

Diane Barrett, Ph.D.

Michele Ebersole, Ph.D.

Janet Ray, Ed.D.

Assistant Professors:

Avis Masuda, Ph.D.

Junior Specialist/Program Advisor:

Travis Nakayama, MPA

Department Clerk Steno:

Madeline Sehna

Program Description

The Master of Education degree (M.Ed.) is a 30-semester-hour program designed to foster professional growth and renewal of licensed teachers. It is a cohort program that requires four semesters and two summers to complete. The M.Ed. is a generalist degree designed to address the unique professional development needs of Hawai'i Island teachers who choose neither to relocate nor to enroll in a specialized degree program.

It is designed to be broadly useful and is, therefore, interdisciplinary. The curriculum focuses on philosophical, psychological, and curriculum foundations. It emphasizes research and teaching tools including technology, assessment, research methodology, and advanced instructional strategies to facilitate instructional school-based leadership.

Graduates of the program will be able to:

- Analyze and apply current trends and issues in education including school change initiatives, reform movements, infusion of technology throughout schools, and methods of addressing the needs of diverse student populations;
- Engage in critical and reflective analysis to integrate and apply a variety of research-based methods, materials, and processes in their classrooms;
- Conduct and report action research to contribute to the positive intellectual climate of classrooms and schools and to assume instructional leadership roles.

Admission Requirements

Admission is based upon previous preparation and requires completion of a baccalaureate degree and evidence of eligibility for the initial basic license to teach as defined by the UH Hilo School of Education and guided by the Hawai'i Teacher Standards Board. Applications and a detailed description of requirements are available from the School of Education or from the UH Hilo Graduate Office of Admissions. Interested potential students may contact the School of Education Advisor at (808) 932-7102 for more information.

Following are the major requirements for admission:

1. Baccalaureate degree from an accredited institution;
2. A cumulative grade point average (GPA) of 3.0 (4.0 = A scale) or the equivalent in the last four semesters or approximately 60 semester credits of the undergraduate record and in all post-baccalaureate work;
3. Evidence of eligibility for an Initial Hawai'i Basic License to teach;*
4. Three letters of recommendation from references who have observed or supervised the applicant's performance and are able to comment on the quality of the applicant's teaching experience, ability to pur-

sue graduate study, and general character.

* Applicants who do not hold a license to teach should meet with the School of Education Advisor (phoneca(808) 932-7102 for appointment) prior to submitting documentation for admission to the M.Ed. Program. Applicants must submit evidence of their eligibility by documenting the following:

1. Development of knowledge, skills, and dispositions described in the Hawai'i Teacher Standards Board's Teacher Performance Standards;
2. Teaching experience;
3. Ability to participate in the study of education at the level required in a graduate program.

The UH Hilo School of Education M.Ed. Admissions Committee will evaluate above evidence submitted as one of the components in the M.Ed. application.

Application packets will be reviewed only when they are complete. International applicants also must provide verification of financial status. An official TOEFL score report may be required for international applicants.

The UH Hilo M.Ed. Program does not lead to licensure in the State of Hawai'i.

Course and Graduation Requirements

M. Ed. Course Requirements

- ED 600 Education of Ethnic Groups in Hawai'i (3)
- ED 602 Technology in Education (3)
- ED 608A, B, C Fundamentals of Educational Research (3)
- ED 610 Foundations of Education (3)
- ED 612 Literature Reviews in Education (3)
- ED 616A, B, C Assessment and Evaluation in Education (3)
- ED 620 Individual Differences: Learner Characteristics (3)
- ED 622 School Curriculum (3)
- ED 625 Seminar in Teaching Field (3)
- 600+ Elective (3)

M. Ed. Graduation Requirements

- Students must complete all program courses, including the elective course.
- To remain eligible for continuance in the M.Ed. and to be awarded the graduate degree, students must maintain progress toward completion of the program and may earn no grade lower than a B- in any individual class, and maintain a B average (3.0 GPA) for all courses completed in the program.
- Each student must complete a culminating experience; this is an independent project that integrates what he or she has learned during the program.

Cohort and Other Requirements

- Students enroll in the M.Ed. program as members of a cohort which is expected to complete all requirements in four semesters and two summers.
- Courses are offered during the evening and/or on Saturdays, and during the summer.
- Typically, all students in a cohort will take courses together and in sequence.
- New cohorts will be established based on student demand and available resources.
- Students must remain continuously enrolled while in the M.Ed. program.

Faculty Advising and Guidance

Each student will be assigned a faculty advisor who will meet with the individual student to provide guidance for the culminating project.

Master of Arts in Teaching (M.A.T.)

Program Chair: Jan Zulich, Ph.D.

Office: University Classroom Building 322, (808) 932-7106

Web: hilo.hawaii.edu/academics/education or
hilo.hawaii.edu/depts/education/

Program Description

The primary purpose of the MAT is to prepare teachers who demonstrate the knowledge, skills, and dispositions needed to build strong curriculum, pedagogy, assessments, and the relationships that bring about significant changes to improve schools, support learners and their development, and positively impact student achievement.

Graduates of the program will be able to:

- After the first year of the MAT, apply for initial teacher licensure with the Hawai'i Teacher Standards Board, which concurrently leads to Highly Qualified Status upon gaining employment.
- After the second year of the MAT, will be able to engage in action research, a critical and reflective analysis that enables teachers to integrate and apply a variety of research-based methods in their classrooms.

Admission Requirements

- Applicants must have earned a baccalaureate degree from an accredited institution or from a nationally recognized foreign institution.
- Have a GPA of 3.0 on a 4.0 scale in the last 60 semester credits.
- For applicants seeking elementary licensure, these courses must be completed, each with a grade of C or better, and in combination passed with a GPA of 2.75 or above: ED 341 Literacy Development in the Elementary School (3), ED 343 Math for Elementary School Teachers (4), and ED 347 Integrated Science and Soc. St. for Elementary School Teachers (3).
- Receive passing scores on the PRAXIS Core Academic Skills for Educators (Reading, Writing, and Mathematics), and PRAXIS II: Content Area Examinations.
- A minimum of 40 hours of previous experiences in content area and grade levels of licensure.
- Three letters of recommendation from those who observed applicant in classroom settings.
- Two professional statements detailing interest in the teaching profession and beliefs about student learning.
- School of Education Interview may be required.
- For applications seeking licensure at the secondary level, the baccalaureate degree must be related to the content area of licensure.
- For applications seeking licensure in English or Social Studies, there may be additional prerequisite coursework.
- Applicants for whom English is not the native language must obtain a score of 550 (paper based test), 213 (computer based) or 79 (internet based) on the TOEFL, or a 6.0 on the IELTS. Students with bachelor's degrees from English-speaking institutions do not need to submit TOEFL scores.

Courses and Graduation Requirements

First year, for licensure:

- ED 640 Learner Development (2)
- ED 641 Learning Differences I (3)
- ED 642 Learning Differences II (1)
- ED 643 Learning Environments I (1)
- ED 644 Learning Environments II (1)
- ED 645 Learning Environments III (2)
- ED 650 Planning for Instruction (1)
- ED 651 Elem Instructional Practice (2)
- ED 652 Elem LA/SS Pedagogy (2)
- ED 653 Elem MT/SC Pedagogy (2)
- ED 654 Tech Instruction & Assessment (2)
- ED 655 Sec Instructional Practice (2)
- ED 656 Sec LA/SS Pedagogy (2)
- ED 657 Sec MT/SC Pedagogy (2)
- ED 658 Sec Content Literacy (2)
- ED 659 Professional Practice (3)
- ED 660 Professional Responsibility I (1)
- ED 661 Professional Responsibility II (1)
- ED 662 Professional Responsibility III (1)
- ED 670 Field Experience I (1)
- ED 671 MAT Field Experience II (2)
- ED 672 (3) Clinical Practicum

Second year, to complete the MAT:

- ED 680 Teacher as Researcher I (3)
- ED 681 Teacher as Researcher II (3)

**Some courses are specific to the elementary track and others to the secondary track. Some courses are common to both tracks.*

The first three semesters (Summer-Fall-Spring) in the MAT program prepare the student to become licensed to teach. Continuation in the program for 2 more semesters (6 more credits) leads to the Master of Arts in Teaching degree.

Kahuawaiola Indigenous Teacher Education Program

Coordinator: Makalapua Alencastre (kaawa@hawaii.edu)

Phone: (808) 932-7411

Faculty:

Makalapua Alencastre, M.A.
Alohalani Houseman, M.Ed.
Noelani Iokepa-Guerrero, Ph.D.
Keiki Kawai'ae'a, Ph.D.

Note: This program is assisted by experts in Hawaiian language and culture from outside the college and by additional faculty drawn from Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language.

For more information contact:

Ku'uilei Kepa'a, (lindakep@hawaii.edu)
Ka Haka 'Ula O Ke'elikōlani College
University of Hawai'i at Hilo
200 West Kāwili Street, Hilo, Hawai'i 96720-4091

Phone: (808) 932-7730; **Fax:** (808) 932-7409

Web: www.kahuawaiola.org

Program Description

The Kahuawaiola Indigenous Teacher Education Program is a three-semester graduate certificate program, delivered primarily through the medium of Hawaiian, specifically designed to prepare Maui Ola Hawai'i (Hawaiian identity nurturing) teachers of the highest quality to teach in Hawaiian language medium schools, Hawaiian language and culture programs in English medium schools, and schools serving students with a strong Hawaiian cultural background. Kahuawaiola is accredited through the State Approval of Teacher Education Programs (SATE). Upon successful completion of the program, candidates will have satisfied one of the requirements for initial licensure from the Hawai'i Teachers Standards Board.

Admission Requirements

Applicants will be evaluated on the following criteria:

- Completion of the application packet.
- Bachelor's degree from an accredited college or university, in a major approved by the Hawaiian Studies Division requiring a minimum of 120 credits, 45 of which are at the 300 level or above.
- A minimum GPA of 3.0 in the last 60 semester credits completed (including post-baccalaureate credits).
- Four years of Hawaiian language with a minimum GPA of 2.75 for the third and fourth years, or permission from the Hawaiian Studies Division based on an evaluation of fluency.
- Successful completion of one of the following: HWST 111, 211, 213; or permission from the Hawaiian Studies Division based on an evaluation of Hawaiian cultural knowledge and skills.
- Successful completion of one of the following: HWST 205, 471, 472, 473, 474; or permission from the Hawaiian Studies Division based on an evaluation of Hawaiian cultural knowledge and skills.
- Successful completion of Haw 490 Base-Level Fluency for Hawaiian Medium Education.
- 50 hours of (paid or volunteer) teaching experience through the medium of Hawaiian, OR 30 hours of (paid or volunteer) teaching experience through the medium of Hawaiian AND 30 hours of (paid or volunteer) experience in Hawaiian medium curriculum development.
- Passing scores on the Praxis I exams (reading, writing, and mathematics), AND on Praxis II (Subject Assessments) Content Area Exercises relevant to secondary level licenses which the applicant will seek from the Hawai'i Teacher Standards Board.
- Interview with Kahuawaiola faculty.

Note: In special circumstances, provisional acceptance may be granted by the selection committee for students who meet some, but not all of the above requirements.

Applying to the Program

Applications will be evaluated on submission of the following required documentation in a timely manner.*

(Application deadline is December 1st)

1. University of Hawai'i Application for Admission (including processing fee)
2. Kahuawaiola Admission Application
3. Statement of interest
4. Work Experience Verification form
5. Three letters of recommendation
6. Official college/university transcripts (for EACH post-high institution previously attended)
7. Official Praxis I/II scores

*Applicants accepted into the program will be required to complete additional documentation prior to the start of the summer session, including but not limited to a criminal background check and fingerprinting as required by the state prior to classroom teaching. For more information, contact the Kahuawaiola office.

Graduation Requirements

Graduation from the program is based on the successful completion of the following requirements:

1. 11 courses totaling 37 credits:

- KEd 620 (3) Foundations for Hawaiian Medium Education
- KEd 621 (2) Language Arts in Hawaiian Medium Education
- KEd 623 (2) Social Studies in Hawaiian Medium Education
- KEd 625 (1) Physical Education in Hawaiian Medium Education
- KEd 626 (2) Science in Hawaiian Medium Education
- KEd 627 (2) Math in Hawaiian Medium Education
- KEd 628 (1) Arts in Hawaiian Medium Education
- KEd 641 (9) Hawaiian Medium Field Experience I
- KEd 642 (3) Hawaiian Medium Field Experience I Seminar
- KEd 643 (9) Hawaiian Medium Field Experience II
- KEd 644 (3) Hawaiian Medium Field Experience II Seminar

2. Minimum GPA of 3.0 in all teacher training courses requiring grades.

Candidates complete "requirements" on two levels:

Level One - "Certificate Completer" - Upon completion of all Kahuawaiola course requirements, candidates graduate and receive the Graduate Certificate in Indigenous Education from UH Hilo. (Application for Graduation required.)

Level Two - "Program Completer" - In addition to completing the certificate, candidates ALSO complete remaining Praxis exams (PLT and Praxis II Subject Assessment Pedagogy exams/Elementary Education exams) required for licenses which they will seek from the Hawai'i Teacher Standards Board (HTSB). Only after successful completion of Praxis exams are candidates recommended by Kahuawaiola to the HTSB for licensure. Only "Program Completers" are eligible to apply for teaching licenses from the HTSB.

Academic Status, Progression, and Readmission Policies

Kahuawaiola students are expected to maintain full-time status in three consecutive semesters in order to complete the course work, field experiences, and other requirements of the program. There are no elective courses.

Unless so designated, Kahuawaiola courses may not be taken on a "credit/no credit" basis. A 3.0 GPA must be maintained in all courses. A student whose GPA falls below 3.0 may be dismissed from the program. Likewise, a student may be removed from a field experience if it is determined by Kahuawaiola faculty that the student is not making satisfactory progress toward meeting the requirements of the program. Such removal may result in complete dismissal from the program.

MA in Indigenous Language and Culture Education

Coordinator:

Makalapua Alencastre (kaawa@hawaii.edu)
Hale'ōlelo Bldg., Room 132 (808) 932-7411

Phone: (808) 932-7411,

Faculty:

Makalapua Alencastre, M.A.
Alohalani Houseman, M.Ed.
Noelani Iokepa-Guerrero, Ph.D.
Keiki Kawai'ae'a, Ph.D.

Note: This program is assisted by experts in Hawaiian language and culture from outside the college and by additional faculty drawn from Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language.

For more information contact:

Ku'ulei Kepa'a, (lindakep@hawaii.edu)
Ka Haka 'Ula O Ke'elikōlani College
University of Hawai'i at Hilo
200 West Kāwili Street, Hilo, Hawai'i 96720-4091

Phone: (808) 932-7730; **Fax:** (808) 932-7409

Web: www.olelo.hawaii.edu/khuok/ma_naauao.php

Program Description

The Master of Arts in Indigenous Language and Culture Education is designed for indigenous language and culture education practitioners such as teachers, administrators, and culture resource specialists. The college's Kahuawaiola Indigenous Teacher Education Program, Hale Kuamo'ō Center for Hawaiian Language, P-12 laboratory school, baccalaureate, and graduate Hawaiian medium education programs and its consortium with the 'Aha Pūnana Leo provide unique and valuable resources for understanding indigenous language and culture education.

The M.A. program in Indigenous Language and Culture Education currently offers only a Plan B practicing track, which requires students to be fluent in Hawaiian language and to simultaneously pursue the Kahuawaiola Indigenous Teacher's Education Certificate. Hawaiian language use in the majority of Practicing Track courses provides students with the tools to deliver indigenous language and culture education at a high level. In the future, when the faculty is larger, the college intends to open a monitoring indigenous education track that will be open to students focusing on other indigenous languages.

Students accepted into the master's program must have met requirements for study and fluency in the Hawaiian language and culture, which will be their point of reference throughout the program.

Admission Requirements for the Practicing Track (Plan B, non-thesis)

1. Bachelor's degree from an accredited college or university with a minimum 3.0 grade point average in an approved field of study, e.g., Indigenous Studies, Ethnic Studies, Education, Languages (including English), etc.;
2. Three letters of recommendation at least one of which must focus on the applicant's background in the Hawaiian language and culture and service to the Hawaiian community;
3. Grade point average of 3.0 or better in the last 60 credits of coursework taken (including coursework taken after the bachelor's degree);
4. 30 credits of study in Hawaiian language or a program approved combination of Hawaiian language and a metropolitan language, Anthropology or Linguistics with no grade lower than a "B" and a 3.0 average;
5. 9 credits of study in the Hawaiian culture or a program approved combination of Hawaiian culture and related social science courses such as Anthropology and Sociology with no grade lower than a "B" and a 3.0 average;

6. Teaching experience either paid or volunteer;
7. Complete taped interview either in person or by telephone;
8. Graduate Record Exam (GRE) scores;
9. In the case of second language speakers of English, passing scores on the TOFEL as determined by the College or other evidence of English fluency.
10. Prior completion of the Kahuawaiola Indigenous Teacher Education Program or prior completion of any other teacher education program accredited in the State of Hawai'i* and successful completion of HAW 490 Base-level Fluency exam for Hawaiian Medium Education.

*For those who have completed a different teacher education program accredited by the State of Hawai'i, achievement of high level scores on the Kahuawaiola teaching performance evaluation (to be administered by the M.A. program faculty).

Further information on the details of fulfilling admission requirements are available from the program. The College may, under some circumstances, provisionally accept students to the program.

Graduation Requirements

Practicing Indigenous Education Track (Non-thesis) (31 credits)

1. 13 credits in group specific indigenous language medium education
 - KEd 620 Foundations for Hawaiian Medium Education (3)
 - KEd 621 Language Arts in Hawaiian Medium Education (2)
 - KEd 623 Social Studies in Hawaiian Medium Education (2)
 - KEd 625 Physical Education in Hawaiian Medium Education (1)
 - KEd 626 Science in Hawaiian Medium Education (2)
 - KEd 627 Math in Hawaiian Medium Education (2)
 - KEd 628 Arts in Hawaiian Medium Education (1)
2. 6 credits in field study
 - KEd 642 Hawaiian Medium Field Experience I Seminar (3)
 - KEd 644 Hawaiian Medium Field Experience II Seminar (3)
3. 3 credits in KEd 630 Research Methods in Indigenous Language and Culture Education
4. 3 credits in KEd 693 Applied Research in Indigenous Education
5. 6 credits in appropriate 600 level education, multilingual societies or linguistics electives taken from any two of the following:
 - HAW 632 Teaching Hawaiian as a Second Language
 - KEd 660 Indigenous Culture-Based Education in Theory and Practice
 - KEd 661 Curriculum Development in Maui Ola-based Schools
 - KEd 662 Cultivating Native Well-being Through Education
6. Completion of the Kahuawaiola Indigenous Teacher Education Program
 - KEd 641 Hawaiian Medium Field Experience I
 - KEd 643 Hawaiian Medium Field Experience II
 - or both waived upon approved equivalent**

For those who have completed a different teacher education program accredited by the State of Hawaii, achievement of high level scores on the Kahuawaiola teaching performance evaluation (to be administered by the M.A. program faculty) will be accepted in lieu of completion of KEd 641 and KEd 643.

MA in Hawaiian Language and Literature

Coordinator:

Hiapo K. Perreira, Ph.D. (hiapokey@hawaii.edu)
Hale'ōlelo (3355) Room 164
University of Hawai'i at Hilo
200 West Kāwili Street, Hilo, Hawai'i 96720-4091

Phone: 932-7432 or 932-7360

Faculty:

Larry Kimura, Ph.D.
Hiapo K. Perreira, Ph.D.
Kalena Silva, Ph.D.
William H. Wilson, Ph.D.

Program Description

The M.A. in Hawaiian Language and Literature was UH Hilo's first graduate program and the first focusing on a Native American language in the United States. The program is designed for students who have already achieved fluency in spoken Hawaiian and competency in reading modern and historical Hawaiian texts. Student cohorts are accepted every three years. Currently, the college offers only a Plan A degree, which requires a thesis.

Graduates of the program will be able to:

- Demonstrate oral and written comprehension and grammatically correct use of Hawaiian at a level appropriate to graduate work.
- Identify and explain major aspects of the grammatical structure of a sample of Hawaiian.
- Describe the history of Hawaiian language and literature and know how to access Hawaiian language resources of various kinds (written and oral, electronic and traditional).
- Read and analyze important Hawaiian language texts (literary, cultural and historical) from the nineteenth and early twentieth century. Describe the most important of those texts.
- Demonstrate both knowledge of and skill in performance of Hawaiian chant
- Write an effective academic paper in Hawaiian (clear, concise, effectively organized, accurate in content, analytical and/or synthetic in nature).
- Apply various research methods appropriate to Hawaiian language and literature and carry out rigorous research in field.
- Demonstrate understanding of indigenous and/or endangered language in other contexts through personal experience with speakers and communities of those languages.

Admission Requirements

1. B.A. or B.S. degree from an accredited college or university;
2. 30 upper division credits in HAW or HWST courses with no grade lower than a "B" and a minimum 3.5 grade point average;
3. Graduate Record Examination scores;
4. Sample undergraduate academic paper (by preference written in Hawaiian);
5. Three letters of recommendation;
6. Interview and successful completion of an examination in Hawaiian language and culture conducted by the Hawaiian Studies faculty, held in the Spring semester prior to Fall admission.

Graduation Requirements

Complete all nine of the following requirements for a total of 36 semester hours:

1. Earn 12 semester hours from the following 4 courses: HAW 603, 630, 631; and HWST 663.
2. Earn 3 semester hours from HWST 473 or 662.
3. Earn 3 semester hours from HWST 664, 665 or KANT 486.
4. Earn 3 semester hours from HAW 453, 454, or 654.
5. A minimum of 24 credits must be earned in 600- or 700-level courses, excluding HAW 700. Only six credits may be counted in 400-level classes.
6. Earn 3 semester hours from either HAW 690 or HWST 690 (course must be approved by program chair). Students typically study for at least six weeks with an endangered language community.
7. Earn 6 additional semester hours in upper division and graduate Hawaiian Language or Hawaiian Studies courses from the following list. (remember that not more than 6 hours in total may be counted at the 400 level):
HAW or HWST 400-498, 600-699V (except HAW 490)
KED 600-699V (except KEd 641-644)
KANT 486
KIND 601-602
Up to six credit hours taken at another university with prior approval from the program chair and then transferred to the University of Hawai'i at Hilo
8. Earn 6 semester hours in HAW 693 or 700.
9. Earn no grade lower than a "B."

Under certain circumstances a student may request a transfer from the Masters in Hawaiian Language and Literature to the Ph.D. in Hawaiian and Indigenous Language and Culture Revitalization after completing a minimum of 18 credits of graduate work determined appropriate by the program faculty.

Please note: The Graduate Division policy is that **no more than 6 credits of 400-level courses may count towards the Master's degree.** Any 400-level courses taken must be approved by both the department and the Graduate Division.

PhD in Hawaiian and Indigenous Language Culture Revitalization

Coordinator:

Scott Saft, saft@hawaii.edu
Kanaka'ole Hall 215 ; (808) 932-7221

Web: olelo.hawaii.edu/khuok/laeula.php

Faculty:

Kauanoë Kamanā, Ph.D.
Larry Kimura, Ph.D.
Yumiko Ohara, Ph.D.
Hiapo Perreira, Ph.D.
Scott Saft, Ph.D.
Kalena Silva, Ph.D.
William H. Wilson, Ph.D.

Affiliate Instructional Faculty:

John Charlot, *University of Hawai'i at Mānoa, Professor of Religion*
Larry Kaplan, *University of Alaska Fairbanks, Professor of Linguistics and Director of Alaska Native Language Center*
M. Puakea Nogelmeier, *University of Hawai'i at Mānoa, Associate Professor, Kawaihuelani Center for Hawaiian Language*

Admission Requirements

1. Master's degree from an accredited college or university with a minimum 3.0 GPA in an approved field of study (e.g., Hawaiian Language and Literature, Indigenous Studies, Anthropology, Languages, etc);
2. Proficiency in and academic knowledge of the applicant's indigenous language of focus, as demonstrated by a taped speech and written essay, with English translation. (The level of proficiency and academic knowledge required will depend on the status of the indigenous language, in terms of how endangered it is and how much linguistic description has been done.)
3. A letter requesting admission to the program which describes the applicant's :
 - academic objectives and research interests;
 - experience in educational service to his or her indigenous language of focus;
 - diverse experience with the contemporary status of an indigenous or threatened language and culture besides the student's own indigenous language of focus. The social and political environment of this additional language should be different from that of the student's language of focus.
 - future plans regarding work to revitalize his or her indigenous language and culture.
4. A sample of written work (usually the master's thesis).
5. Course work of at least 6 credits in general linguistics, linguistic analysis, and sociolinguistics
6. Complete taped interview either in person or by telephone.
7. Three letters of recommendation, at least one of which must focus on the applicant's background in the language and culture of an indigenous people and service to that indigenous community.
8. For second language speakers of English, passing scores on the TOFEL or other evidence of English fluency.

Further information on the details of fulfilling admissions requirements are available from the Director of Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language.

Graduation Requirements

1. KIND 730 Research Methods In Hawaiian And Indigenous Language And Culture Revitalization (3)
2. **Eight Credits** in Advanced Study of Language of Focus:
 - KLAN 701 Semantics and Pragmatics in Indigenous Languages (1)
 - KLAN 702 Stylistics and Domains in Indigenous Languages (1)
 - KLAN 703 Semantics and Pragmatics of an Indigenous Language (3)
 - KLAN 704 Stylistics And Domains Of An Indigenous Language (3)

These credits are directed toward improved analytical and fluency skills in the student's language of focus and its culture. KLAN 701/702 are seminars taken by all students to develop common understandings and for form the basis for KLAN 703/704, which focus specifically on Hawaiian or other indigenous languages depending on student interests.

3. Additional Language Requirement:

For students whose language of focus is Hawaiian, the additional language requirement will be met by demonstrated fluency and academic knowledge of any approved second language equivalent to the 102 level as taught at UH Hilo.

For students whose language of focus is other than Hawaiian, the additional language requirement will be met by demonstrated fluency and academic knowledge of Hawaiian equivalent to the 102 level as taught at UH Hilo.

4. Two Areas of Specialization:

Students will focus on **two** of the four areas of specialization provided in the program:

- (a) Indigenous Language and Culture Education,
- (b) Indigenous Language and Culture In Society,
- (c) Language Planning, and
- (d) Hawaiian Language and Culture.

Specific research themes to be addressed within these broad areas are diverse in order to allow maximum application to student dissertation interests. Examples of such areas are literacy in indigenous languages, indigenous language media, spirituality and religion in traditional Hawaiian thought, lexicon development, indigenous language testing and evaluation, colonialism and neocolonialism as factors in indigenous language and culture revitalization, technology in indigenous language revitalization, diversity in indigenous languages and societies, ecological planning for indigenous language and culture survival, etc.

The amount of course work in the two areas of specialization is dependent on the student's graduate committee, who will determine when the student is sufficiently prepared to take comprehensive examinations in the two areas. *At a minimum the student must complete **two** of the following courses (together with the prerequisites) listed below:*

- KED 794 Indigenous Language and Culture Education (3)
(Pre: KED 660, 662 or equivalent)
- KIND 794 Indigenous Language and Culture In Society (3)
(Pre: KIND 601, 602 or equivalent)
- KLIN 794 Language Planning (3)
(Pre: KIND 601, 602 or equivalent)
- HWST 794 Hawaiian Language and Culture (3)
(Pre: HAW 631, 654, HWST 663, 665 or instructor's consent)

5. Students may take up to six semester credits (or equivalent) at another accredited university in courses pre-approved by the program chair and transfer the credits to the University of Hawai'i at Hilo in place of any of the listed program courses.
6. Completion of all graduate courses with a grade no lower than "B."
7. Successful completion of a comprehensive examination consisting of oral and/or written questions, after the student's Graduate Committee determines the student has had sufficient preparation in the field of study to begin work on the dissertation.
8. Submission and approval of a portfolio which documents the student's work to improve public opinion and/or government policy concerning the revitalization of the student's language and culture of focus. The portfolio may include newspaper or periodical articles or oral presentations aimed at the student's indigenous community or the larger public; it may include written material or oral testimony given at government forums concerned with indigenous language and culture revitalization.
9. Successful completion of a dissertation, with enrollment in a minimum of six credits of KIND 800 (V) during the writing of the dissertation. A final oral examination in defense of the dissertation is then required upon completion of the dissertation.

Doctor of Nursing Practice (DNP)

Program Coordinator:

Alice Davis, Ph.D., APRN (aedavis@hawaii.edu)
University of Hawai'i at Hilo, School of Nursing (UH Hilo SON)
200 West Kāwili Street, Hilo, Hawai'i 96720-4091

Phone: 932-7067; **Fax:** (808) 932-7066

Web: hilo.hawaii.edu/depts/nursing/ or
hilo.hawaii.edu/studentaffairs/admissions/dnp.php

Admission Requirements

Acceptance is granted at the discretion of the Doctor of Nursing Practice. Admissions Committee based on the criteria below:

- UH Graduate Application
- Application fee
- SON Supplemental Application
- Transcripts from all accredited colleges
- Min GPA of 3.0
- Current Hawai'i RN License, in addition to current RN license where you intend to practice
- 3 recommendations (two from faculty, one employer/professional)
- Professional Goal essay
- Interview with graduate faculty
- Current CV/Resume
- Background check (at the time of acceptance into the program)
- Health Clearance: Tuberculosis clearance documentation, documentation for tetanus/diphtheria vaccination received within the last ten years; documentation for hepatitis-B vaccination series or serological evidence of immunity; serological evidence of immunity to mumps, rubella, rubeola, and varicella (at the time of acceptance into the program).

Foreign applicants must also submit:

1. International Graduate Student Supplemental Information Form
2. Official TOEFL score report
3. Completion of the CGFNS Qualifying exam

Program Entry Points

Students have two program entry points to earn the Doctor of Nursing Practice degree:

- The Post Baccalaureate DNP entry point is intended to allow entry into the DNP program for nurses who are not already advanced practice registered nurses (APRNs). The program will educate registered nurses to be Family Nurse Practitioners (FNP) with foci in Gerontological Nursing, Transcultural Nursing, and Rural Health Care.
- The Post Masters DNP entry point offers nurses with advanced degrees in nursing specialty areas (e.g. education, administration, practice, information systems management, leadership etc...) a doctoral program, which expands their level of practice expertise.

Further information on the details of fulfilling admissions requirements are available from the DNP Program Admissions office (808) 932-7067, or hilo.hawaii.edu/depts/nursing/ or hilo.hawaii.edu/studentaffairs/admissions/dnp.php

Graduation Requirements

- Completion of all graduate courses for the specific entry point enrolled (BSN-DNP or MSN-DNP);
- Minimum accepted GPA of 3.0 in all graduate courses;
- Successful completion of 1000 practice hours or portion thereof based on previous practice experience;
- Successful completion of Family Nurse Practitioner (FNP) competencies (BSN-DNP entry point only);
- Successful completion of a Practice Inquiry Project;
- Successful presentation of the Practice Inquiry Project at an oral defense;
- Compliance with UH Hilo rules and regulations for graduation.

Course Sequencing

Post-BSN to FNP/DNP Recommended Class Scheduling

Semester 1 (Fall Year 1) Total: 9 credits

NURS 618 Epi/Environmental Health (3)
NURS 601 Social Aspects of Health (3)
NURS 602 Information Systems/Technology (3)

Semester 2 (Spring Year 1) Total: 10 credits

NURS 603 Advanced Clinical Pharmacology (3)
NURS 604 Advanced Clinical Pathophysiology (3)
NURS 605 Advanced Health Assessment (4)

Semester 3 (Summer Year 1) Total: 6 credits

NURS 606 Rural Health Promotion (3)
NURS 606L Rural Health Promotion L (3)

Semester 4 (Fall Year 2) Total: 12 credits

NURS 607 Primary Care of Adults (3)
NURS 607L Primary Care of Adults L (3)
NURS 608 Primary Care of Older Adults (3)
NURS 608L Primary Care of Older Adults L (3)

Semester 5 (Spring Year 2) Total: 11 credits

NURS 609 Primary Care of Women (2)
NURS 609L Primary Care of Women L (2)
NURS 610 Primary Care of Children (2)
NURS 610L Primary Care of Children L (2)
NURS 611 Advanced Research Methods (3)

Semester 6 (Summer Year 2) Total: 6 credits

NURS 612 Evidence Based Practice (3)
NURS 613 Program Development/Evaluation (3)

Semester 7 (Fall Year 3) Total: 10 credits

Elective* (3)
NURS 614 System-Based Leadership (3)
NURS 615 Health Policy: Local to Global (4)

Semester 8 (Spring Year 3) Total: 9 credits

NURS 616 Health Economics (3)
NURS 617 Practice Inquiry/Project (6)

Program Total: 73 credits

*A graduate elective is required.

Non-practice MSNs who wish to follow the FNP/DNP entry-point will follow the Post-BSN to FNP/DNP course schedule. Possible waivers of specific courses will be determined on a case by case basis.

Post-MSN to DNP Recommended Class Scheduling**Semester 1 (Fall Year 1) Total: 9 credits**

- NURS 618 Epi/Environmental Health (3)
- NURS 601 Social Aspects of Health (3)
- NURS 602 Information Systems/Technology (3)

Semester 2 (Spring Year 1) Total: 12 credits

- NURS 611 Advanced Research Methods (3)
- NURS 614 System-Based Leadership (3)
- NURS 616 Health Economics (3)
- Elective* (3)

Semester 3 (Summer Year 1) Total: 6 credits

- NURS 612 Evidence Based Practice (3)
- NURS 613 Program Development/Evaluation (3)

Semester 4 (Fall Year 2) Total: 10 credits

- NURS 615 Health Policy: Local to Global (4)
- NURS 617 Practice Inquiry/Project (6)

Program Total: 37 credits

*A graduate elective is required. It is strongly recommended that the student take a course in Education Teaching Strategies

Doctor of Pharmacy (PharmD)

Dean: John M. Pezzuto, Ph.D.

Associate Dean: Edward Fisher, Ph.D. R.Ph.

Chair, Department of Pharmaceutical Sciences: Kenneth Morris, Ph.D.

Co-Chairs, Department of Pharmacy Practice:

Carolyn Ma, Pharm.D., BCOP, CHTP/I and Patricia Uber, Pharm.D.

UH Hilo, Daniel K. Inouye College of Pharmacy
34 Rainbow Drive, Hilo, HI 96720

Email: pharmacy@hawaii.edu

Phone: (808) 933-2909

Web: pharmacy.uhh.hawaii.edu/

Admission Requirements

To be eligible for admissions into the University of Hawai'i at Hilo College of Pharmacy, students must meet the following requirements:

Completion of the prerequisite courses including:

Pre-Requisite Category	Credits
General Biology I and II with Labs	8
Microbiology with Lab	4
General Chemistry I and II with Labs	8
Organic Chemistry I and II with Labs	8
Human Anatomy & Physiology I and II with Labs	8
Calculus	3
English (including 3 credits composition)	6
Humanities	6
A course that includes a world/cultural diversity component	3
Social/Behavioral Sciences	6
Economics	3
Communications (with a public speaking component)	3
Total	66

Please Note: The most current listings of prerequisite courses can be found at pharmacy.uhh.hawaii.edu/admissions/. Prerequisites are subject to change at the end of each application cycle.

- Completion of the PCAT (www.pcatweb.info) and submission of official scores to PharmCAS (www.pharmcas.org). Applicants are encouraged to take the PCAT in July or September of the application year or earlier.
- Completion and submission of the PharmCAS application (www.pharmcas.org) including two professional letters of recommendation and applicable fees.
- Completion and submission of the supplemental application to be requested via email by UH Hilo CoP.
- International applicants must also complete a minimum of 30 semester hours of coursework in the United States at any regionally-accredited college or university. Of the 30 required semester hours, 15 semester hours must be allocated to non-remedial science courses.

Note: Meeting the minimum qualification requirements does not guarantee admission. All eligible applications are reviewed by the UH Hilo CoP Admissions Committee which applies multiple criteria for the assessment of applications and selection of candidates to be interviewed.

UH Hilo CoP annually accepts 80-90 students for Fall admissions.

Application Procedure

UH Hilo CoP operates on a competitive, rolling admissions process. Early submission is strongly recommended. Applicants are responsible for tracking the progress of their application and verifying that all necessary documents have been received by the UH Hilo Office of Student Services. The application review process begins in August 2013 and continues until all seats are filled. Upon receipt of all required application components noted above, the complete file and applicant profile will be reviewed by the UH Hilo CoP Admissions Committee. At that time, the committee will decide to invite the candidate for an interview, place the candidate on hold for further review, or reject the applicant. Eligible students will be invited for a personal interview and are contacted via email. UH Hilo CoP conducts closed file interviews. In closed file interviews, the interviewer is not provided with any information about the candidate except for their name. This approach was selected by the Admissions Committee as it helps remove preconceived biases based on students' experiences, grades, test scores, personal statements, etc. Interviews are conducted from December 2013 through May 2014 with additional interviews as needed. Complete applications and interview scores are reviewed by the Admissions Committee for final admission decisions. Accepted students will be notified by email.

Doctor of Pharmacy Program Requirements**Professional Year 1 Fall Courses**

- PHPP 501 Introductory Pharmacy Practice Experiential (IPPE) I (1)
- PHPS 504 Pharmaceutical Immunology (3)
- PHPS 501 Biochemistry—biomolecules (3)
- PHPS 505 Pharmaceutics I (3)
- PHPP 511 Culture & Inter-professional Health Care (2)
- PHPS 503 Pharmaceutical Calculations (2)
- PHPS 512 Introduction to the Pharmaceutical Sciences (3)

Professional Year 1 Spring Courses

- PHPP 502 Introductory Pharmacy Practice Experiential (IPPE) II (1)
- PHPP 508 Introduction to Biostatistics (3)
- PHPS 509 Pathophysiology (4)
- PHPS 502 Biochemistry—metabolism (3)
- PHPS 506 Pharmaceutics II (3)
- PHPP 510 Foundation of Integrated Therapeutics and OTC drugs (3)

Professional Year 2 Fall Courses

- PHPP 503 Introduction Pharmacy Practice Experiential (IPPE) III (1)
- PHPP 506 IPPE Retail Rotation (1)
- PHPP 514 Evidence-Based Medicine (3)
- PHPP 515 Integrated Therapeutics I (7)
- PHPS 511 Pharmacokinetics (3)
- PHPP 527 Drug Information (2)
- PHPP 528 Communications for Pharmacy (2) 50% of Cohort Elective (2). Choose two credits of electives - 50% of Cohort

Professional Year 2 Spring Courses

PHPP 504 Introduction Pharmacy Practice Experiential (IPPE) IV (1)
 PHPP 520 Pharmacy Law and Ethics (3)
 PHPP 523 Wellness, and Disease Prevention (2)
 PHPP 516 Integrated Therapeutics II (7)
 PHPP 528 Communications for Pharmacy (2) – 50% of Cohort
 PHPP 519 Health Care Systems (2)
 Elective (2) Choose two credits of electives - 50% of Cohort

Professional Year 3 Fall Courses

PHPP 505 Introduction Pharmacy Practice Experiential (IPPE) V (1)
 PHPP 522 Pharmacy Practice Management and Marketing (2)
 PHPP 517 Integrated Therapeutics III (7)
 PHPP 525 Complementary Medicine (3)
 Electives (3). Choose three credits of electives

Professional Year 3 Spring Courses

PHPP 524 Pharmacoeconomics (3)
 PHPP 518 Integrated Therapeutics IV (7)
 PHPP 521 Applied Pharmaceutical Care (3)
 PHPS 591 Basic and Applied Toxicology (3)

Professional Year 4 Courses

Fourth Year (P-4) - Advanced Professional Practice Experiences: 42 weeks

PHPP 540 Advanced Pharmacy Practice Experiential: Ambulatory Care (6)
 PHPP 541 Advanced Pharmacy Practice Experiential: Community Practice (6)
 PHPP 542 Advanced Pharmacy Practice Experiential: Medicine (6)
 PHPP 543 Advanced Pharmacy Practice Experiential: Hospital Pharmacy (6)
 PHPP 544 Advanced Pharmacy Practice Experiential - Elective I (6)

PHPP 545 Advanced Pharmacy Practice Experiential - Elective II (6)
 PHPP 546 Advanced Pharmacy Practice Experiential – Elective III (6)

Electives - 2 Credits

- PHPP 550 History of Pharmacy (2)
- PHPS 550 Genetics in Medicine (2)

Variable 1 or 2 Credits

- PHPP 555 Veterinary Medicine

Electives – 1 Credit

- PHPP 553 Current Topics in Health Care
- PHPP 557 Personal Finance
- PHPP 554 Zoonotic Diseases
- PHPP 564 Advanced Managed Health Care
- PHPS 553 Radioactivity in Pharmacy
- PHPP 560 Pharmacy Leadership
- PHPS 554 Herbal Medicine and Hawaiian Medicinal Plants
- PHPS 555 Geographic (Tropical) Medicines
- PHPS 559 Environmental Toxicology
- PHPS 562 Discovery & Development of Blockbuster Drugs
- PHPS 563 Current Advances in Neuropharmacology
- PHPS 565 Genetics & Pharmacology of Malaria
- PHPS 561 Emerging Trends of Drug Discovery
- PHPS 567 Pharmacogenetics
- PHPS 568 Antibiotic Mechanisms
- PHPS 569 Cancer Prevention
- PHPP 561 Pharmacy & Therapeutics Comp

PhD in Pharmaceutical Sciences

Program Director:

Anthony Otsuka, Ph.D. (jotsuka@hawaii.edu); (808) 981-8011
 Daniel K. Inouye College of Pharmacy (DKICP)
 722 S. A'ohoku St. Hilo, HI 96720

Admissions Office:

University of Hawai'i at Hilo DKICP
 Office of Student Services (OSS); Ph.D. Program Admissions
 200 W. Kāwili Street, Hilo, HI 96720

Phone: 932-7697; **Fax:** (808) 933-3889

Email: pharmacy@hawaii.edu

Web: pharmacy.uhh.hawaii.edu/

Faculty:

Julie Ann Luiz Adrian, D.V.M. *Assistant Professor*
 André S. Bachmann, Ph.D. *Chair; Associate Professor*
 Forrest Batz, Pharm.D. *Assistant Professor*
 Leng Chee Chang, Ph.D. *Assistant Professor*
 Mahavir Chougule, Ph.D. *Assistant Professor*
 Linda Connelly, Ph.D. *Assistant Professor*
 Edward Fisher, Ph.D. *Professor; Associate Dean for Academic Affairs*
 Daniela Gündisch, Ph.D. *Assistant Professor*
 Aaron Jacobs, Ph.D. *Assistant Professor*
 Susan Jarvi, Ph.D. *Associate Professor; Director, Pre-Pharmacy Program*
 Tamara P. Kondratyuk, Ph.D. *Assistant Specialist; Laboratory Manager*
 Dana-Lynn Koomoa-Lange, Ph.D., *Assistant Professor*
 Russell J. Molyneux, Ph.D. *Affiliate Faculty*
 Kenneth R. Morris, Ph.D. *Professor; Chair*
 Anthony Otsuka, Ph.D. *Instructor*
 John M. Pezzuto, Ph.D. *Professor; Dean*
 Dianqing Sun, Ph.D. *Assistant Professor*
 Ghee T. Tan, Ph.D. *Assistant Professor*
 Gary R. Ten Eyck, Ph.D. *Assistant Professor*
 Supakit Wongwiwatthananut, Pharm.D., Ph.D. *Associate Professor*
 Anthony D. Wright, Ph.D. *Associate Professor*

Admission Requirements

Acceptance is granted at the discretion of the Pharmaceutical Science Ph.D. Admissions Committee based on the criteria below.

1. Successful completion of the Ph.D. in Pharmaceutical Sciences Application process.
2. Applicants must have a B.S., M.S., Pharm.D. and/or equivalent degree.
3. Applicants must have a minimum Grade Point Average of 3.0 out of 4.0 or the equivalent in the last 60 semester credits of undergraduate and in all post-baccalaureate work.
4. Applicants must have successfully completed with a grade "C" or higher: General Biology I and II for Science Majors with Labs, General Chemistry I and II for Science Majors with Labs, Organic Chemistry I and II for Science Majors with Labs, Calculus 1 or Advanced Calculus.
5. A personal statement of objectives is required which includes applicant's background, professional goals and academic and research interests.
6. Resume.
7. Official Graduate Record Examination (GRE) scores sent directly from ETS: minimum 153 verbal, 144 quantitative, and 4.5 for analytical.
8. Three Letters of Recommendation using the "Ph.D. Letter of Recommendation Form". The letters should be written by people who can speak to the applicant's educational ability, motivation, and character, and/or leadership experiences. At least one of your letters MUST be written by a Professor of one of the Natural or Physical Sciences. Please allow the Recommenders plenty of time to complete this form, and have them mail the letter directly to:
 UH Hilo Daniel K. Inouye College of Pharmacy,
 Office of Student Services, PhD Program Admissions,
 200 W. Kawili Street; Hilo, HI 96720-4091.
9. Completed SKYPE or equivalent electronic interview.

Foreign applicants must also submit:

1. Official TOEFL score report.
2. International Graduate Student Supplemental Information Form hilo.hawaii.edu/admissions/forms/documents/sup-form.pdf.

Further information on the details of admissions requirements are available from the Ph.D. Program Admissions Office, pharmacy@hawaii.edu, and at pharmacy.uhh.hawaii.edu/academics/graduate/admissions.php.

Graduation Requirements

1. Successful achievement of candidate status after year one of the student's program.
2. Regardless of any previous graduate experience, a minimum of 24 graduate didactic credit hours must be taken at UH Hilo before the Ph.D. degree can be granted.
3. Completion of all first year graduate courses with no grades lower than a "B" and all subsequent courses with an average grade of no less than "B".
4. Completion of one seminar each year; a minimum grade of "B" should be achieved for this presentation.
5. No later than the third year of the program successful completion of a comprehensive oral examination following a seminar presentation of the candidate's plans for their dissertation. In this examination the student's Graduate Committee will determine if the student is sufficiently prepared in the selected field of study to continue with their dissertation.
6. Successful completion of a dissertation, with enrollment in a minimum of 56 credits of PHPS 800. Upon completion of the dissertation a final oral dissertation defense will follow.
7. Completion of at least 96 combined credits of graduate courses and dissertation; PHPS 600, PHPS 700 and PHPS 800.
8. Compliance with UH Hilo rules and regulations for graduation.

PhD in Pharmaceutical Sciences

To successfully complete the PhD degree candidates must complete; qualifying year 1 (Minimum GPA = 3.0), a minimum of 24 graduate level didactic credits; after first year courses must be completed with GPA average of no less than 3.0; a minimum 56 credits of Dissertation; a minimum of 96 credit hours overall (Minimum average GPA = 3.0).

PhD Year 1 (Qualifying Year) Fall Courses (Total of 11 credits)

- PHPS 750 PhD Overview of the Pharmaceutical Sciences (3)
- PHPS 751 PhD Biochemistry I– Biomolecules (4)
- PHPS 755 Advanced Pharmaceutics I, including Dosage Form Design and Processing (3)
- PHPS 718 Research Laboratory Rotation and Graduate Seminar (1)

PhD Year 1 (Qualifying Year) Spring Courses (Total of 13 credits)

- PHPS 800 Dissertation Research and Graduate Seminar (6)
- PHPS 752 PhD Biochemistry I– Biomolecules (4)
- PHPS 756 Advanced Pharmaceutics II, including Dosage Form Design and Processing (3)

PhD Year 1 Summer Courses (Total minimum of 6 credits)

- PHPS 800 Dissertation Research (Minimum 6)

PhD Year 2 Fall Courses (Total minimum of 12 credits)

- PHPS 800 Dissertation Research and Graduate Seminar (Minimum 6)
- Electives (No minimum)

PhD Year 2 Spring Courses (Total minimum of 12 credits)

- PHPS 800 Dissertation Research and Graduate Seminar (Minimum 6)
- Electives (No minimum)

PhD Year 2 Summer Courses (Total minimum of 6 credits)

- PHPS 800 Dissertation Research (Minimum 6)

PhD Year 3 Fall Courses (Total minimum of 12 credits)

- PHPS 800 Dissertation Research and Graduate Seminar (Minimum 6)
- Electives (No minimum)

PhD Year 3 Spring Courses (Total minimum of 12 credits)

- PHPS 800 Dissertation Research and Graduate Seminar (Minimum 6)
- Electives (No minimum)

PhD Year 3 Summer Courses (Total minimum of 6 credits)

- PHPS 800 Dissertation Research (Minimum 6)

PhD Year 4 Fall Courses (Total minimum of 12 credits)

- PHPS 800 Dissertation Research and Graduate Seminar (Minimum 6)
- Electives (No minimum)

PhD Year 4 Spring Courses (Total minimum of 12 credits)

- PHPS 800 Dissertation Research and Graduate Seminar (Minimum 6)
- Electives (No minimum)

PhD Year 4 Summer Courses (Total minimum of 6 credits)

- PHPS 800 Dissertation Research (Minimum 6)

PhD Year 5 and beyond are taken on an as-required basis.

(Total minimum of 12 credits)

- PHPS 800 Dissertation Research and Graduate Seminar (Minimum 6)
- Electives (No minimum)

Electives (listed alphabetically)

Alpha/Number	Course Title	Credits
PHPS 701	Apoptosis and Angiogenesis in Disease Processes and Drug Development	1
PHPS 702	Biological Evaluation of Natural Products	3
PHPS 703	Cancer Biology	2
PHPS 704	Combinatorial Chemistry and High Throughput Technologies in Drug Discovery	2
PHPS 705	Designing Clinical Research	3
PHPS 706	Environmental Toxicology	2
PHPS 707	Genetics in Medicine	2
PHPS 708	Isolation methods for natural product discovery	2
PHPS 709	Instrumental methods and structure elucidation of mainly natural products	2
PHPS 710	Laboratory Animal Care, Management and Medicine I	2
PHPS 711	Laboratory Animal Care, Management and Medicine II	2
PHPS 712	Medical Cell Biology	2
PHPS 713	Medicinal Chemistry I	2
PHPS 714	Medicinal Chemistry II	2
PHPS 715	Medicinal Chemistry III	2
PHPS 716	Medicinal Chemistry IV	2
PHPS 717	Medicinal Chemistry of CNS Drugs and Development of in vivo CNS Tracers	2
PHPS 719	Molecular Biology Techniques and Applications for Healthcare Professionals	2
PHPS 720	Natural Products and Cancer Chemoprevention	2
PHPS 721	Neuropsychopharmacology	2
PHPS 722	Pharmaceutical Marketing	2
PHPS 723	Pharmacognosy	2
PHPS 724	Pharmacology I	3
PHPS 725	Pharmacology II	3
PHPS 726	Pharmacology III	3
PHPS 727	Pharmacology IV	3
PHPS 728	Phytochemistry of Terrestrial Plants	2
PHPS 729	Receptor Theory and Signal Transduction	2
PHPS 730	Sample collection, documentation & preservation	1
PHPS 731	Toxicants and Toxicity	3
PHPS 732	Toxic plant natural products and their therapeutic potential	2

MS in Clinical Psychopharmacology

Contacts and Program Director:

Edward Fisher, (808) 933-2865, fishere@hawaii.edu
University of Hawai'i at Hilo, College of Pharmacy
200 W. Kawili Street, Hilo, HI 96720

Email: pharmacy@hawaii.edu; **Fax:** (808) 933-3889

Program Description

The University of Hawai'i at Hilo Daniel K. Inouye College of Pharmacy (UH Hilo-DKICoP) Master of Science in Clinical Psychopharmacology (MSCP) is a two-year educational and experiential program through which students pursue the Master of Science degree. UH Hilo's CoP MSCP program prepares the student for professional advancement to become a clinical psychopharmacologist. During the two years at UH Hilo-DKICoP, students will complete a total of 33 semester hours of credit (all required).

Admission Requirements

Students need to submit all of their application materials to the UH Hilo CoP MSCP Program Admissions Committee, who will select entrants into the program. The admission criteria and procedures conform to the UH Graduate Division's standards post-graduate programs. The MSCP program accepts 4-10 students into the program each year.

Degree requirements: Degree requirements for the MSCP comply with UH Hilo Graduate study requirements outlined at <http://hilo.hawaii.edu/catalog/candidates-for-masters-degrees.html>. Those requirements that are specific to the MSCP are elaborated below.

Minimum Qualifications for Acceptance: Each applicant must hold a baccalaureate degree and a graduate (PhD or PsyD) degree in psychology from a regionally accredited U.S. college or university, or its equivalent from a recognized non-U.S. institution of higher learning. The standards of the degree in question must be equivalent in scholarship requirements to those maintained in the undergraduate program at the University of Hawai'i at Hilo.

Grade Point Average (GPA): The applicant must have a GPA of 3.0 or the equivalent from the last 60 semester credits (or equivalent) in the undergraduate degree completed, or must hold a graduate degree with a GPA of 3.0 or better in his/her graduate program. Under special circumstances, a GPA of 2.75 or higher will be considered based on the applicant's other qualifications and subject to the petition process noted above.

The principal requirements for the MSCP degree are successfully passing every didactic course with a minimum of a grade of B and received a grade of P in the practicum. Students must participate in the clinical practicum for a minimum of 400 hours, see a minimum of 100 separate patients, and at the final evaluation must receive from their clinical supervisor a minimum of meeting the expected level of performance in all 15 clinical learning outcomes described in the course syllabus.

Note: Prerequisites are subject to change at the end of each application cycle. In addition, meeting the minimum qualification requirements does not guarantee admission.

Student Learning Outcomes

Each learning outcome addresses at least one of the following eleven content areas: 1) Integrating clinical psychopharmacology with the practice of psychology; 2) Neuroscience; 3) Nervous system pathology; 4) Physiology and pathophysiology; 5) Biopsychosocial and pharmacologic assessment and monitoring; 6) Differential diagnosis; 7) Pharmacology; 8) Clinical psychopharmacology; 9) Research; 10) Professional, legal, ethical, and inter-professional issues; 11) Clinical practice. Upon completing the MSCP program, successful students will be able to:

1. define, identify and recognize key concepts of terminology in all content areas;
2. review and explain at a high level of proficiency, both orally and in writing, the most current theories of the pathophysiology, etiology, signs and symptoms underlying mental health disorders and their psychopharmacologic treatment;
3. choose the appropriate diagnosis and effectively apply psychopharmacological knowledge to resolve clinical psychopathological cases using "Subjective, Objective, Assessment and Planning" (SOAP) notes and case presentations, and differentiate mental disorders that are drug-induced or caused by somatic disease;
4. analyze, interpret, integrate and evaluate pharmacologically-based clinical findings in psychological settings through literature review, class presentations and written analysis.

5. M.S. in Clinical Psychopharmacology

Total semester hours required: 33

Fall Year 1:

- PHPS 450 The Biochemical Basis of Therapeutics – I Biomolecules (3)
- PHPS 451 The Biochemical Basis of Therapeutics – II Metabolism (3)
- PHPS 606 Human Physiology (3)

Spring Year 1:

- PHPS 601 Integrated Pharmacotherapy I (7)

Summer Year 1:

- PHPS 602 Integrated Pharmacotherapy II (5)

Fall Year 2:

- PHPS 603 Integrated Pharmacotherapy III (4)
- PHPS 604 Advanced Psychopharmacology I (2)
- PHPS 607 Practicum (2)
- PHPS 608 Law and Psychopharmacology (2)

Spring Year 2:

- PHPS 605 Advanced Psychopharmacology II (2)
- PHPS 607 Practicum (2)

Summer Year 2:

- PHPS 607 Practicum (2)

Note: Credits for the Practicum are granted at its completion.

MS in Tropical Conservation Biology and Environmental Science

Program Director: Donald Price, Ph.D., donaldp@hawaii.edu

Natural Sciences Division Office:

Life Sciences 2, University of Hawai'i at Hilo
200 West Kāwili Street, Hilo, HI 96720

Phone: (808) 932-7506

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Jim Beets, Ph.D., Marine Science, beets@hawaii.edu
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Patrick Hart, Ph.D., Biology, pjhart@hawaii.edu
Maria Haws, Ph.D. Aquaculture, haws@aol.com
Kevin Hopkins, Ph.D., Aquaculture, hopkins@hawaii.edu
Susan Jarvi, Ph.D., Biology, jarvi@hawaii.edu
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William J. Mautz, Ph. D., Biology, mautz@hawaii.edu
Karla McDermid, Ph. D. Marine Science, mcdermid@hawaii.edu
Armando Garcia Ortega, Ph.D. agarciao@hawaii.edu
Jon-Pierre Michaud, Ph. D., Chemistry, jonpierr@hawaii.edu
Jene Michaud, Ph.D., Geology, jene@hawaii.edu
Peter Mills, Ph.D. Anthropology, millsp@hawaii.edu
Cam Muir, Ph.D., Biology, cmuir@hawaii.edu
Rebecca Ostertag, Ph.D., Biology, ostertag@hawaii.edu
Adam Pack, Ph.D. Psychology & Biology, pack@hawaii.edu
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Jonathan Price, Ph.D., Geography, jpprice@hawaii.edu
Michael Shintaku, Ph.D., Plant Pathology, shintaku@hawaii.edu
Elizabeth Stacy, Ph.D., Biology, estacy@hawaii.edu
Misaki Takabayashi, Ph.D., Marine Science, misakita@hawaii.edu
Jason Turner, Ph.D., Marine Science, jpturner@hawaii.edu
Tracy Wiegner, Ph.D., Marine Science, wiegner@hawaii.edu

Application Process

Applications will be examined beginning February 1 for admission the following Fall semester. After February 1 applications will be accepted on a space available basis until May 1. The UH Hilo Graduate Office of Admissions receives applications and supporting documents and maintains the applications through final notification. If you do not hear from the Graduate Office of Admissions within 30 days of submission of your application, please contact the office at (808) 932-7446.

Applications that meet the requirements will be forwarded to the Tropical Conservation Biology and Environmental Science Admissions Committee for a comprehensive review. Admission decisions made by the committee will be forwarded to the Graduate Office of Admissions which sends the final notification to the applicant.

Admission Status: The applicant's admission status is valid only for the semester to which the applicant is accepted. Applications for students who do not register or who withdraw from the University are voided but retained for a period of one (1) year. Students may reapply for admission to the next year by notifying the Graduate Office of Admissions and submitting the application fee.

Admission Requirements

1. A baccalaureate degree from a regionally-accredited U.S. institution or from a nationally-recognized foreign institution.
2. Communicate with a potential advisor(s) from the list of participating faculty with similar research interests. In the personal statement, list advisor(s) from the TCBES faculty who agrees to sponsor the application and to serve as primary advisor upon acceptance to the program.
3. A minimum combined verbal and quantitative score of 1000 on the General Graduate Record Exam (GRE).
4. Three letters of recommendation submitted by references who have observed or supervised the applicant's performance and are able to comment on the quality of the applicant's academic achievement, ability to pursue graduate study, and general character.
5. Grade point average of 3.0 (on a scale where A = 4.0) or the equivalent in the last four semesters of approximately 60 semester credits of undergraduate work and/or in all post-baccalaureate work.

Note: In special circumstances acceptance may be granted at the discretion of the selection committee for those students who meet some, but not all, the above requirements.

Note: Recommended Baccalaureate Courses for Admission to the Program:

- 2 years of chemistry
- 1 year of calculus
- 1 course in geographic information or remote sensing
- 1 course in statistics
- 2 courses in life sciences
- 2 additional courses in physical sciences

Transfer of Credits

Requests for transfer of graduate credits must be made during the first semester in which the student is enrolled in the program. Only credit hours with a grade of B or better from accredited universities are transferable. Transfer credit hours must have been completed within five years preceding the date upon which the advanced degree is to be conferred by UH Hilo. The TCBES program will decide which credits will be transferred.

International Credentials

A statement describing minimum academic qualifications expected of international applicants may be obtained from the Graduate Office of Admissions. These qualifications must be completed prior to enrollment.

MS in TCBES Check List

(Reminder: Priority application deadline is February 1)

- ✓ Completed UH Hilo Graduate application form
- ✓ Personal statement of objectives
- ✓ Application fee
- ✓ Official transcripts from all colleges or universities (must be received directly from the institution, or in a sealed envelope if submitted with your application)
- ✓ General Test, Graduate Record Exam
- ✓ Three Letters of Recommendation received at UH Hilo by February 1
- ✓ Official TOEFL score report, if required
- ✓ Verification of financial status (for international applicants) [hilo.hawaii.edu/forms/]

M.S. in Tropical Conservation Biology and Environmental Science

Total Credits Required:

Plan A = 30 credits

Plan B = 36 credits

Core Courses (8) credits required for all M.S. TCBS students:

- CBES 600 Conservation Biology and Environmental Science (3)
- CBES 601 TCBS Field and Laboratory Methods (3)
- CBES 602 Research Seminar in TCBS (1)
- CBES 603 Natural Resource Management Seminar (1)

Elective Courses*:

Plan A: 16 elective credits of 600-level CBES courses.

Plan B: 25 elective credits of 600-level CBES courses.

*A maximum of 6 credits of 400-level courses may count toward these elective credits.

- CBES 609 Principals of Landscape Ecology (3)
- CBES 610 Environmental Chemical Analysis (3)
- CBES 615 Global Environmental Change (3)
- CBES 620 Research Techniques in Molecular Conservation Biology (3)
- CBES 630 Near shore Monitoring and Analysis (3)
- CBES 633 Biodiversity (3)
- CBES 635 Physical Environment of Ecosystems (3)
- CBES 640 Advanced Remote Sensing and Digital Image Processing (3)
- CBES 643 Ecological Physiology (3)
- CBES 645 Applying Social Science to Marine and Coastal Resource Management (3)
- CBES 650 Oceanographic Monitoring and Analysis (3)
- CBES 665 Environmental Toxicology (3)
- CBES 660 Molecular Ecology (3)
- CBES 670 Advanced Techniques in Geographic Information Systems (3)
- CBES 675 Conservation Genetics (3)
- CBES 677 Quantitative Ecology (3)
- CBES 680 Advanced Statistical Analysis and Research Design (3)
- CBES 681 Spatial Data Analysis and Modeling (3)
- CBES 685 Behavioral Ecology and Evolutionary Analysis (3)

Other Courses:

- CBES 690 (3) Internship (Plan B: 3 credits required)
- CBES 694 (1-3) Special Topics in Tropical Conservation Biology and Environmental Sciences
- CBES 699 (1-3) Directed Research
- CBES 700 (1-6) Thesis Research (Plan A: 6 credits required)

Certified Faculty:

These faculty serve on graduate committees, occasionally teach graduate courses, seminars or workshops, and can co-chair graduate committees with a UH Hilo faculty member.

- Lisa Adams, M.S. Biology Laboratory Coordinator, Hawai'i Community College
- Carter Atkinson, Ph.D., Project Leader, USGS Pacific Island Ecosystems Research Center
- George Balazas, M.S. Zoologist and leader, Marine Turtle Research Program
- Paul Banko, Ph.D., Project Leader, USGS Pacific Island Ecosystems Research Center
- Lawrence Basch, Ph.D., Marine Ecology and Science Advisor, National Park Service
- Chad Kālepa Baybayan Associate Director, 'Imiloa Astronomy Center of Hawai'i
- Francis L. Benevides Jr., Ph.D., Manager/Engineer/Technician, Federal Aviation Administration
- Charles Birkeland, Ph.D. Unit Leader Hawai'i, Cooperative Fishery Research Unit
- Barbara Block, Ph.D. Professor, Department of Biological Sciences, Stanford University
- Frank Bonaccorso, Ph.D., Research Ecologist, USGS Pacific Island Ecosystems Research Center
- Brian Bowen, Ph.D., Research Professor, HIMB UH Mānoa,
- Holly Bowers, PhD, Research Specialist, University of Maryland Biotechnology Institutes,
- Eric Brown, Ph.D., Marine Ecologist, Kalaupapa National Historical Park
- John Burns, M.S., Marine Ecologist, UH Mānoa
- Frank Chapman, Ph.D., Associate Professor, University of Florida
- Matthew J. Church, Ph.D. Assistant Professor, Oceanography Dept., UH Mānoa
- David Clausnitzer, Ph.D. Pacific Islands Area Forest Ecologist, USDA-NRCS,
- Susan Cordell, Ph.D., Research Ecologist, USDA Forest Service
- Carla D'Antonio, Ph.D., Professor, Ecology, Evolution and Marine Biology, UC Santa Barbara
- Todd Dawson, Ph.D., Professor, Department of Integrative Biology, UC Berkeley
- Julie Denslow, Ph.D., Research Ecologist, USDA Forest Service
- Bruce Dudley, Ph.D. Post-doctoral Researcher, University of Hawai'i at Hilo
- Chris Farmer, Ph.D., USGS Pacific Island Ecosystems Research
- Linda Shea Flanders, Executive Director, Cape Kumukahi
- Peter Follett, Ph.D., Research Entomologist, USDA, Pacific Basin Agricultural Research Center
- David Foote, Ph.D., Research Ecologist, USGS, Pacific Island Ecosystems Research Center,
- James Boyd Friday, Ph.D. Extension Forester, UH Mānoa
- Alan Marc Friedlander, Ph.D., Hawai'i Cooperative Fishery Research Unit,
- Ruth Gates, Ph.D., Assistant Research Professor, HIMB UH Mānoa
- Grant Gerrish, Ph.D., Instructor, Biology Dept., UH Hilo
- Scott Geib, Ph.D. Research Scientist, USDA Agricultural Research Services Hilo
- Kenneth Gordon Gerow, Ph.D. Professor, Statistics Dept., University of Wyoming
- Christian Giardina, Ph.D., Research Ecologist, USDA Forest Service
- William Gilmartin, M.S. , Director of Research, Hawai'i Wildlife Fund

- Charles Greene, Ph.D. Professor,
Dept. of Earth and Atmospheric Science, Cornell
- Arnold Hara, Ph.D., Professor,
UH Mānoa CTAR - Beaumont Center
- David Helweg, Ph.D., Deputy Director,
USGS, Pacific Island Ecosystems Research Center
- Steven Hess, Ph.D. Research Wildlife Biologist,
USGS-BRD, Hawai'i Volcanoes National Park
- Tara Holinski, M.S. Analytical Laboratory Manager, UH Hilo
- Darcy Hu, Ph.D., Ecologist and Science Advisor,
US National Park Service,
- Flint Hughes, Ph.D., Research Ecologist, USDA Forest Service
- Nicole Hynson, Ph.D., Assistant Professor, Botany, UH Mānoa
- David Itano, M.S. Research Associate, UH Mānoa
- James Jacobi, Ph.D., Research Botanist,
USGS, Pacific Island Ecosystems Research Center
- Jack Jeffery, Senior Wildlife Biologist, US Fish and Wildlife Service,
- Tracy Johnson, Ph.D., Research Entomologist, USDA Forest Service,
- Les Kaufman, Ph.D., Professor, Biology Dept., Marine Program &
Center for Ecology and Conservation Biology, Boston University
- Lisa Keith, Ph.D., Research Plant Pathologist Biology,
USDA, Pacific Basin Agricultural Research Center
- Randall Kosaki, Ph.D. Deputy Superintendent,
Pahahanaumokuakea Marine National Monument
- Stacy Kubis, M.S. Marine Turtle Research Biologist, NOAA - JIMAR
- Dennis Lapointe, Ph.D., Ecologist,
USGS, Pacific Island Ecosystems Research Center
- Harilaos Lessios, Ph.D., Staff Biologist,
Smithsonian Tropical Research Institute
- Gregg Levine DVM, Veterinarian, Dolphin Quest Hawai'i,
Waikoloa, Hawai'i
- Rhonda Loh, Ph.D., Hawai'i Volcanoes National Park Service
- Fred Mackenzie, Ph.D., Professor Emeritus,
Department of Oceanography, UH Mānoa
- Richard MacKenzie, Ph.D., Research Ecologist,
USDA Forest Service
- Karl Magnacca, Ph.D. Post-doctoral Researcher, UH Hilo
- Nicholas Manoukis, Ph.D. Research Biologist,
USDA Agricultural Research Services Hilo
- Colby McNaughton, M.S. Field Experience Coordinator,
Education Dept., UH Hilo
- Lisa Muehlstein, Ph.D., UH Hilo Biology and
Marine Science Department
- Kate Nishijima, M.S. Plant Pathologist, USDA
- Robert Nishimoto, Ph.D., Aquatic Biologist,
Division of Aquatic Resources, DLNR
- Ann Kaleilokelani Nu'uhiwa,
Kamehameha Schools-Keauhou/Kahalu'u Educational Group
- Eben Paxton, Ph.D., Avian Research Ecologists,
USGS, Pacific Island Ecosystems Research Center
- Kennedy Paynter, Jr. Ph.D., Associate Professor,
Chesapeake Biological Laboratory, University of Maryland
- Brian Perry, Ph.D., Assistant Professor, Biology Department,
California State East Bay
- Sheldon Plentovich, Ph.D. Coastal Program Coordinator,
Pacific Islands Fish and Wildlife Office
- Beth Polidoro, Ph.D. Senior Research Associate and
Program Officer, IYCN Global Marine Species Programme
- William Pitt, Ph.D., Field Station Leader
USDA, National Wildlife Research Center
- Thane Pratt, Ph.D., Project Leader,
USGS, Pacific Island Ecosystems Research Center
- Richard Pyle, Ph.D., Associate Zoologist,
Database Coordinator, Bishop Museum
- Richard Pyle, Ph.D., Associate Zoologist,
Database Coordinator, Bishop Museum
- Lora Reeve, M.S., J.D., Consultant
- Michelle Reynolds, Ph.D., Project Leader
USGS, Pacific Island Ecosystems Research Center
- Robert Robichaux, Ph.D. Professor,
Ecology and Evolutionary Biology, University of Arizona
- Mike Robinson, M.S. Property Management Agent,
Hawaiian Homelands
- David Schofield, M.S.
Marine Mammal Response Network Coordinator, NOAA
- Craig Severance, Ph.D., Retired
UH Hilo Faculty in Anthropology and TCBES
- Kerry Shaw, Ph.D. Professor,
Neurobiology and Behavior, Cornell University
- Laura Shiels, M.S. Botany Department, UH Mānoa
- David Shively, Ph.D., Assistant Professor of Geography,
University of Montana,
- Robert P. Smith, M.S. Fish and Wildlife Service, Retired
- Richard Switzer, M.S. Associate Director, Applied Animal Ecology,
San Diego Zoo Institute for Conservation Research
- Robert Toonen, Ph.D., Assistant Research Professor,
HIMB UH-Mānoa
- Jesse Trushenski, Ph.D., Associate Professor, Center For Fisheries,
Aquaculture and Aquatic Sciences, Southern, Illinois University
- William Walsh, Ph.D., Division of Aquatic Resources,
Hawai'i Department of Land and Natural Resources (DLNR)
- Laura Warman, Ph.D., USDA Forest Service,
Institute of Pacific Island Forestry
- Debbie Weeks, Ph.D., Chemist
- Virginia Weis, Ph.D. Professor, Zoology Department,
Oregon State University
- Sharon Ziegler-Chong, M.S. Associate Director, PACRC;
Coordinator, Hawai'i Cooperative Studies Unit

Graduate Courses

How to Read Course Descriptions

Courses are described using the following format:

CRS NUM Title (cr.) (hrs/wk) (freq.)
Full course description. Pre: pre-requisites. (Same as X-List)

Course subject
Course number
Course title
Number of semester hours (credits)
Contact hours per week if non-lecture
(if applicable) Expected frequency course is offered:
(S) Every semester
(Y) Yearly
(AY) Alternate years
(IO) Infrequently offered
(Summer) Summer sessions only

Full description of the course.
(if applicable) Prerequisites, co-requisites, recommended preparation or other requirements
(if applicable) Cross-listed courses (equivalent courses offered through another subject heading)

Special notations used are as follows:

- (1-3), for example = the number of semester hours, in this example, may be 1, 2, or 3, as determined by the instructor at the time of offering.
- (Arr.) = the number of semester hours is arranged by the instructor.

Certain number endings are reserved for particular types of courses:

- "94" courses are Special Topics Courses.
- "95" courses are Seminars.
- "96" courses are Internship Courses.
- "97" and "98" courses are Experimental Courses offered only for one year on that basis ("97" is usually offered in the Fall and "98" in the Spring).
- "99" courses are Research and Directed Studies Courses.

China-U.S. Relations (CHUS)

College of Arts and Sciences

CHUS 500 Master's Plan Studies (1) Used for continuous enrollment purposes. Must be taken as CR/NC. Does not count toward fulfillment of degree requirements. Pre: Master's or Doctoral candidacy and instructor's consent.

CHUS 600 Approaches & Perceptions: Unders (3) Critical analysis of issues and problems in American studies of China and Chinese perceptions of America. Historical and comparative survey of traditional Chinese culture and American civilization.

CHUS 610 Probs & Iss of Contemp China (3) Multidisciplinary examination of problems and issues affecting lives and institutions of contemporary China: economic development, population growth, urbanization, political and social change.

CHUS 621 Seminar in Chinese Philosophy (3) Examines major philosophical ideas in the development of Chinese culture from the modern and the post-modern perspectives, and studies their impact upon the life of peoples in the Pacific and the U.S.

CHUS 622 Chinese Religions and the West (3) Exploration of the ways Chinese religious/philosophical traditions have influenced/been influenced by Western religious, philosophical, and scientific thought. Emphasis on traditions of Confucianism and Taoism, with some attention to Buddhism.

CHUS 623 Chinese Immigrants in U.S. (3) Examines the experience of Chinese immigrants in North America. Studies the formation of Chinese immigrant communities and basic processes of ethnic self-identification.

CHUS 624 Ethnography of Modern China (3) An attempt to understand the culture of China by reference to ethnographic description of the everyday lives of average Chinese in rural settings. Kinship and family, religious belief and practice, agriculture and economic adaptation, and community relations, in historical context. Emphasis on the lives of peasants in the ethnographic present, with attention to regional variability.

CHUS 630 Compar Iss in Business Ethics (3) This course will explore differences and similarities between Eastern and Western approaches to ethical decision-making, particularly with regard to improving governance of relationships between business, government, and civil society. Special emphasis will be placed on the compatibility of Eastern holistic moral philosophies with system-based management concepts and practices such as sustainable development, corporate social responsibility, global corporate citizenship, multi-stakeholder dialogue, social and environmental auditing, and triple bottom line accountability.

CHUS 640 Chnse & US Economies: Comparat (3) An economic analysis of the Taiwanese, the P.R.C. and the U.S. economies. The economic analysis is supplemented by utilizing a historical, comparative and interdisciplinary approach.

CHUS 641 Seminar US-China Environmtl Is (3) U.S. and Chinese environmental attitudes and policies in comparative context. Comparative domestic policies over a wide range of environmental issues and bilateral cooperation and conflict in international environmental affairs.

Pre: GEOG 326 or graduate standing.

CHUS 643 Adv Study Contemp Chns Politic (3) Examines contemporary Chinese political issues and problems in the post-Deng transitional period for China. Focus will be on informal-elite politics, institutional development, erosion of ideology, military role, central-provincial tension, and regionalism. May be repeated once for credit. Pre: POLS 351.

CHUS 650 Intercult Comm: China and US (3) This course provides an overview of major theories of intercultural communication between the Chinese and U.S. Americans and engages in theory-based comparisons of culture and communication in Chinese and U.S. societies.

CHUS 661 Comparative Poli Econ: US & Gre (3) The political economy of the U.S., Peoples Republic of China (P.R.C.), Hong Kong and Taiwan. Emphasis will be on U.S. and Greater China economic relations and the effect of the political relations on international trade of these two countries.

CHUS 670 Chinese & Chinese Lit Amer (3) This course will evaluate and analyze the image of the Chinese in America, especially in literary and film representation. The class will begin with images from the turn of the 19th century (i.e. posters, cartoons, advertisements) and such works as Harte and Twain's play "Ah Sin." We will then move on to how Chinese American writers themselves engaged in portraying their own culture and people here in the United States, including novels about immigration and Chinatown.

CHUS 680 Chinese Culture Study Tour (3) A living experience and an academic study of Chinese thought and culture inside and outside China.

CHUS 695 Seminar Comparative Study C&US (3) Comparative study of Chinese and American cultures employing perspectives arising out of two basic core courses. Focus may be on past or current events, ancient or modern texts, or some other phenomena.

CHUS 700 Thesis Research (1-6) Graduate level thesis research, theoretical development, and writing. Students may register for 1 to 6 credit hours per semester for a maximum of 6 credits for M.A. Plan A. Pre: instructor's consent, thesis committee, and program chair; completion of "Thesis Form for Master's Degree".

CHUS x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

CHUS x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. Pre: instructor's consent.

Psychology (PSY)

College of Arts and Sciences

PSY 500 Master's Plan Studies (1) Used for continuous enrollment purposes. Must be taken as CR/NC. Does not count toward fulfillment of degree requirements. Pre: Master's or Doctoral candidacy and instructor's consent.

PSY 601 Applied Multivariate Statistic (4) Advanced statistical techniques used in psychological research and assessment. Strategies of multivariate data screening, transformation, analysis, and interpretation. Computerized statistical packages designed for multivariate analyses.

PSY 602 Research Meth & Prgm Evaluatn (3) Basic research methodology including quantitative, qualitative, action research, and context-based research. Theoretical knowledge and practical experience in program design and evaluation. Strong emphasis will be given to the importance of research and program evaluation and the opportunities and difficulties encountered when conducting these in the counseling profession. *Pre:* PSY 601.

PSY 603 Psychological Assessment (4) Principles of psychological assessment. Historical perspective on psychological assessment. Assessment methods. Scales used in psychological assessment: assessment of personality, abilities, achievement, interests, and values. Assessment of environment. Quality of assessment. Assessment design and implementation. Interpretation of the assessment results. Cross-cultural aspects of assessment. Legal and ethical issues. Hands-on training to effectively utilize various assessment tools and write comprehensive assessment reports. *Pre:* PSY 601.

PSY 604 Profssnl Identity, Ethics (3) Ethical issues in counseling and psychological research. Ethical decision making, confidentiality, and ethical obligations. Research ethics and psychologists in the legal system. Ethical standards and guidelines.

PSY 611 Lifespan Human Development (3) Psychological, social, and physical development over the life span. Interaction among genetic make-up, human activity, and context in the process of development. Stages and mechanisms of development. Normative development and deviations from the norm. Theories of development. Research on developmental processes in various domains. Cross-cultural perspectives on human development. Current research issues.

PSY 612 Career Development (3) Work and work-related behavior over the life span. Relationships between life style and career development. Theories of vocational development. Career development of women and minorities. Occupational information and decision making. Impact of changing technology and job market. Application to career counseling with diverse populations.

PSY 613 Psychopathology over Lifespan (3) Abnormal development across the lifespan. DSM-IV classification of disorders and methods of appraisal. Etiology, diagnosis and treatment of child, adult, and geriatric disorders.

PSY 614 Family System (3) Family as an open system. Family structure, processes, and context. Family dynamics. Interaction among psychological, social, economic, and biological aspects of family functioning. Reciprocal relationships in the family. Interactions between families and their contexts. Cross-cultural differences in family organization and functioning. Problems in the family and ways of coping.

PSY 620 Counseling Theories (3) A pre-practicum course designed to help students gain an in-depth understanding of various counseling theories. Through readings, discussions, in-class exercises and homework assignments, students will learn the theories.

PSY 621 Counseling Theory and Skills (3) Theories and techniques of counseling, including processes, applications and outcomes.

PSY 622 Group Work & Counseling (4) (lec., lab) Group purpose, type, development, dynamics; leadership and diversity; group work and counseling theories, methods and skills; evaluation of group work and counseling; application of group work and counseling in a family, school and workplace settings. Students participate in an experiential learning group over the course of the semester.

PSY 623 Social & Cultural Foundations (3) Interaction between society and the individual. Socio-economic status, ethnicity and culture as determinants of behavior. Characteristics of multicultural and diverse societies and their effects on individual and group behavior.

PSY 624 Counseling Skills (3) A pre-practicum course designed to help students develop effective counseling skills. Through readings, discussions, in-class exercises and homework assignments, students will learn therapeutic skills.

PSY 640 Practicum (6) Supervised experience in a counseling setting, including 100 hours of supervised client contact. Repeatable if different field placement. *Pre:* PSY 602, 603 and instructor's consent.

PSY 641 Schl Behavr, Adjustmt, Prblms (3) School adjustment in children at all school levels. Factors contributing to academic success and effective social interaction. At-risk children. Coping processes. School adjustment among culturally diverse children and children with special needs. The role of school, family, and community in the child's academic performance and school behavior. Prevention and intervention strategies.

PSY 642 Educatnl & Vocatnl Assessment (3) Principles and goals of educational and vocational assessment and counseling applications. Assessment settings, populations, and procedures. Educational assessment methods. Vocational assessment methods. Interpretation and use of the assessment results. Cross-cultural, social, legal, and ethical issues. *Pre:* PSY 601, 603.

PSY 643 Schl & Career Guidance & Consu (3) History, principles, and goals of guidance and consultation in educational and work settings. Academic and career guidance. Individual and group guidance. Problem-specific, cultural, and developmental approaches to guidance and consultation. Guidance settings, populations, and procedures. School guidance and K-12 curriculum. Career services. Computerized guidance systems. Social, legal, and ethical issues. *Pre:* PSY 612, 641, or consent of the instructor.

PSY 651 Theories Of Family Counseling (3) Theoretical approaches used by systemic family therapists to assess and treat family problems.

PSY 653 Treating Families in Crisis (3) Historical roots of family stress theory and basic theoretical approaches used by family therapists to assess and treat family stress and its symptoms.

PSY 654 Gender & Culturl Issues in Fam (3) Gender and cultural issues in the family system; historical aspects of gender; gender systems; gender issues related to marriage and family therapy; development of culture; cultural similarities and differences in human development; multi-cultural and multiracial families.

PSY 655 Systemic Sex Therapy (3) Human sexuality from the systems perspective. Common sexual attitudes and behavior problems. Analysis and intervention with sexual dysfunctions. Sex therapy with diverse populations of clients.

PSY 656 Child Maltreatment (3) An overview of child maltreatment, including abuse and neglect. Topics include the incidence and prevalence of child maltreatment; scientific theories and findings about the causes and consequences of maltreatment; forensic and clinical assessment; mandated reporting requirements; other legal issues; and psychosocial interventions for maltreated children and their families.

PSY 659 Internship (9) Supervised clinical experience in community practice counseling settings, including 200 hours of supervised client contact. *Pre:* PSY 640 and instructor's consent.

PSY 693 Adult Cog Behavior Therapy (3) No prerequisites, corequisites, crosslisting, special grading options. Not repeatable for credit. History, theory, research, and practice of Cognitive Behavior Therapy applied to adults mental disorders and symptoms. Theory and Treatment applications of Cognitive Behavior Therapy for anxiety and mood disorders, stress disorders, couple issues, substance abuse, and personality disorders. Discussions and Practice of the third wave behavior therapy including Acceptance and Commitment Therapy and Mindfulness Base Stress Reduction.

PSY 700 Thesis Research (1-6) Supervised research, data analyses, literature review, and writing up of an original empirical study designed to develop and demonstrate the ability to do research and competence in scholarly exposition. Students are expected to work on their thesis under the supervision of their faculty and have their work reviewed by their thesis committee.

PSY x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

PSY x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

Education (ED)

College of Arts and Sciences

ED 500 Master's Plan Studies (1) Used for continuous enrollment purposes. Must be taken as CR/NC. Does not count toward fulfillment of degree requirements. *Pre:* Master's or Doctoral candidacy and instructor's consent.

ED 600 Ed Of Ethnic Groups in Hawaii (3) Survey of social-psychological learning characteristics, heritage, identity problems of Hawai'i ethnic groups, study of prejudice and inter-ethnic hostilities as related to education and teaching.

ED 602 Technology in Education (3) Selection, evaluation and utilization of instructional materials for systematic achievement of curriculum goals; investigation of innovative technological advances for use in teaching and training. *Pre:* acceptance into the M.Ed. program or instructor's consent.

ED 608A Fund Of Educatn Research I (1) Systematic study of the purposes of educational research, evaluation and use of research, and introduction of research design principles with emphasis on classroom applications. *Pre:* acceptance into the M.Ed. program or instructor's consent.

ED 608B Fund Of Educatn Research II (1) Principles of research design, methodology, and analysis as applied to field research. *Pre:* successful completion of ED 608A or instructor's consent.

ED 608C Fund Of Educatn Research III (1) A synthesis and application of research skills which culminates in an original research proposal. *Pre:* successful completion of ED 608A and B or instructor's consent.

ED 610 Foundations Of Education (3) Social and intellectual history of education. Historical and contemporary relationships between schools and society. Foundations of the major philosophies of education. Contemporary educational theory and practice as related to major historical, philosophical and social factors in American culture. *Pre:* acceptance into the M.ED. program or instructor's consent.

ED 611 Adv Educ Psychology (3) Foundations of educational psychology through the vehicle of an exploratory study. Inquiry approach stresses learning theory, measurement techniques, and research skills in education.

Pre: acceptance into the M.Ed. program or instructor's consent.

ED 612 Literature Review in Education (3) Advanced academic study and writing processes for analyzing and evaluating current educational research articles, literature reviews and graduate student publications. Development of scholarly educational research skills with a focus in content area discipline. Investigation of theoretical and methodological issues of research.

Pre: acceptance into the M.Ed. program or instructor's consent.

ED 616A Assess & Evaluation in Ed I (1) Systematic study of the theory and technology of measurement, assessment and evaluation in educational settings, emphasizing the development and use of traditional techniques.

Pre: acceptance into the M.Ed. program or instructor's consent.

ED 616B Assess & Evaluation in Ed II (1) Systematic study of the theory and technology of alternative assessment and evaluation in educational settings with emphasis on field-based applications.

Pre: successful completion of ED 616A or instructor's consent.

ED 616C Assess & Evaluation in Ed III (1) Synthesis and application of measurement, assessment and evaluation in the use, adaptation, and/or creation of appropriate techniques in an original research proposal or thesis.

Pre: successful completion of ED 616A & B.

ED 620 Indiv Differences: Learner (3) Systematic study of the conceptual framework of inclusive education which consists of special education, gifted and talented education and compensatory programs. Emphasis will be placed upon individual student characteristics and strategies for effective instruction.

Pre: acceptance into the M.Ed. program or instructor's consent.

ED 622 School Curriculum (3) Development and improvement of curriculum. Explanation of contemporary curricular issues which impact teaching and learning in the classroom. Emphasis on school reform and renewal.

Pre: acceptance into the M.Ed. program or instructor's consent.

ED 625 Seminar in Teaching Fld (3) Study in trends, research, and problems of implementation in interdisciplinary teaching.

Pre: acceptance into the M.Ed. Program or instructor's consent.

ED 635 Adv Instructional Strategies (3) An examination of various instructional strategies including information processing, social interaction, and personal development. Theory and research in the development, selection, implementation and evaluation of instructional models.

Pre: acceptance into the M.Ed. program or instructor's consent.

ED 640 Learner Development (2) Introduction to theories of learner development, including cognitive, linguistic, emotional, personality, and moral/prosocial development of students (grades K-12). Exploration of developmentally appropriate and challenging learning experiences.

Pre: Admission to MAT program.

ED 641 Learning Differences I (2) Introduction to legislation for students with disabilities. An overview of areas of exceptionality, the basic principles and practices of inclusive instruction, and how to address the special needs of diverse learners.

Pre: Admission to the MAT program and ED 640.

ED 642 Learning Differences II (1) Application of inclusive instruction that acknowledges the influence of individual experiences, talents and prior learning, as well as language, culture, family and community values on student learning.

Pre: Admission to the MAT program and ED 641.

ED 643 Learning Environments I (1) Introduction to theory and practice of classroom management at the elementary and secondary school level. Exploration of student motivation and communication techniques as related to the establishment of a positive learning environment.

Pre: Admission to the Master of Arts in Teaching program.

Co-req: ED 640, 650, 660, and 670.

ED 644 Learning Environments II (1) Introduction to theory and practice of classroom management at the elementary and secondary school levels. Exploration of student motivation and effective communication techniques as related to the establishment of a positive and caring learning environment.

Pre: Admission to the MAT program and ED 643.

ED 645 Learning Environments III (2) Exploration of student behavior and related interventions to promote caring and effective classroom environments. Application of responsible management of student learning.

Pre: Admission to the MAT program and ED 644.

ED 650 Planning for Instruction (1) Introduction to instructional practice, including effective planning, content knowledge, and assessment of student learning experiences. Exploration of specialized professional association standards as the basis for instructional planning.

Pre: Admission to the Masters of Arts in Teaching program.

Co-req: ED 640, 643, 660, and 670.

ED 651 Elem Instructional Practice (2) Introduction to a variety of instructional strategies to support and expand student learning outcomes. Exploration of instructional planning based on knowledge of content areas, cross-disciplinary skills, learners, the community and pedagogy toward elementary student attainment of rigorous learning goals. Required for elementary candidates.

Pre: Admission to the MAT program.

ED 652 Elem LA/SS Pedagogy (2) Exploration of the central concepts, tools of inquiry, and multicultural perspectives related to the study of Language Arts and Social Studies. Development of learning experiences that promote learner access and understanding in these disciplines in the elementary classroom. Required for elementary candidates.

Pre: Admission to the MAT program.

ED 653 Elem MT/SC Pedagogy (2) Exploration of the central concepts, tools of inquiry, and differing perspectives related to the study of Math and Science. Development of learning experiences that promote learner access and understanding of these disciplines in the elementary classroom. Required for elementary candidates.

Pre: Admission to the MAT program.

ED 654 Tech Instruction & Assessment (2) Introduction to the application of educational multimedia technology in 21st century teaching and learning. Development of relevant learning experiences and authentic assessments incorporating contemporary tools and resources to maximize content learning in varied contexts. Required for both elementary and secondary candidates. *Pre:* Admission to the MAT program.

ED 655 Sec Instructional Practice (2) Introduction to a variety of instructional strategies to support and expand student learning outcomes. Exploration of instructional planning based on knowledge of content areas, cross-disciplinary skills, learners, the community and pedagogy toward secondary student attainment of rigorous learning goals. Required for secondary candidates. *Pre:* Admission to the MAT program.

ED 656 Sec LA/SS Pedagogy (2) Exploration of the central concepts, tools of inquiry, and multicultural perspectives related to the study of Language Arts and Social Studies. Development of learning experiences that promote learner access and understanding of these disciplines in the secondary classroom. Open to secondary candidates.

Pre: Admission to the MAT program.

ED 657 Sec MT/SC Pedagogy (2) Exploration of the central concepts, tools of inquiry, and differing perspectives related to the study of Math and Science. Development of learning experiences that promote learner access and understanding of these disciplines in the secondary classroom. Open to secondary candidates.

Pre: Admission to the MAT program.

ED 658 Sec Content Literacy (2) Exploration of the study of literacy processes and strategies for use with 7-12 students within multiple content areas. Required for secondary candidates.

Pre: Admission to the MAT program.

ED 659 Professional Practice (3) Demonstration of ongoing use of evidence for continual evaluation of practice particularly as related to impact on student learning. Documentation of acquired dispositions and skills of critical reflection that support life-long professional meaning. Required for elementary and secondary candidates.

Pre: Admission to the MAT program.

ED 660 Professional Responsibility I (1) Overview of professional licensure standards and professional attributes. Professional development through field experiences in local schools.

Pre: Admission to the MAT program.

ED 661 Professional Responsibility II (1) Professional development through field experiences in local schools. Critical reflection on classroom instruction and student engagement.

Pre: Admission to the MAT program and ED 660.

ED 662 Prof Responsibility III (1) Professional development through field experiences in local schools. Preparation to meet licensure and employment requirements.

Pre: Admission to the MAT program and ED 661.

ED 670 Field Experience I (1) Practical application of theories of learner development, learning environments, and instructional planning in local schools. Introduction to schools as learning communities.

Pre: Admission to the Master of Arts in Teaching program. *Co-req:* ED 640, 643, 650, 660.

ED 671 MAT Field Experience II (2) Practical application of theories and teaching methods and strategies in local schools. Supervised observation and teaching with emphasis on lessons and unit planning and instruction. *Pre:* Admission to the MAT program and ED 670.

ED 672 Clinical Practicum (3) Supervised student teaching and professional development experiences in local schools. Supervised observation and teaching with an emphasis on advanced unit and lesson planning and instruction. *Pre:* Admission to the MAT program and ED 671.

ED 680 Teacher as Researcher I (3) Introduction to teacher research as a basis for demonstrating impact on student learning. Exploration of effective instructional practices and assessments, IRB approval, and research study elements, including critical analysis of relevant literature and methodology. *Pre:* Completion of Phase I of the MAT program.

ED 681 Teacher as Researcher II (3) Further exploration of teacher research, resulting in an original classroom-based action research project and presentation of findings. Critical reflection on instructional practice based on research findings. Pre: Completion of Phase I of the MAT program and ED 680.

ED x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

ED x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. Pre: instructor's consent.

Hawaiian Language (HAW)

Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language

HAW 500 Master's Plan Studies (1) Used for continuous enrollment purposes. Must be taken for CR/NC. Does not count toward fulfillment of degree requirements. Pre: Master's or Doctoral candidacy and instructor's consent.

HAW 603 Grad Level Hawn Lang (3) Further development of Hawaiian language ability from the B.A. level to a level appropriate for graduate work. B.A. base reviewed with correction of any problem areas. Introduction of additional patterns, vocabulary, and styles in both oral and written form. Use of resources from late monarchy and early territorial periods. Pre: Admission to MA program in Hawaiian Language and Literature.

HAW 630 Research Methods in Hawn Lang (3) Seminar in which students explore and choose thesis topics.

HAW 631 History of Hawaiian Lang & Lit (3) Hawaiian language and literature since contact with Europeans. Styles of language and types of literature. Relationships between Hawaiian and other languages, especially Hawai'i Creole English. Pre: HWST 452 or 453. Recommended: LING 331, 421, and 437.

HAW 632 Hawaiian As Second Language (3) Teaching Hawaiian to speakers of other languages, particularly Hawaiian Creole English. This includes problems faced by students in acquiring native-like Hawaiian and history of Hawaiian language teaching. Pre: HAW 453 and 454. Recommended: HAW 431 and LING 351.

HAW 654 Advanced Hawn Grammar (3) Advanced aspects of Hawaiian grammar. Pre: HAW 453, 454; LING 321.

HAW 690 Study in Hawn Spkng Community (3) Off-campus field work experience. Pre: HAW 453, 454, and 631.

HAW 693 Thesis and Proposal Writing (3) Seminar for writing and presentation of master's thesis proposal or a section of the master's thesis. Pre: Permission of instructor (conditioned on completion of all required course work prior to writing the thesis).

HAW 700 Thesis Research (1-6) Research and writing of thesis. Pre: HAW 630

HAW x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

HAW x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. Pre: instructor's consent.

Hawaiian Studies (HWST)

Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language

HWST 661 Advanced Hawn Music (3) Examination of indigenous and foreign forms found in acculturated Hawaiian music. Pre: HWST 471 and 473.

HWST 662 Applied Hawaiian Chant (3) Applied study of the performance of various Hawaiian chant styles. Pre: HWST 462, 473, 474. Recommended: HWST 453.

HWST 663 Traditional Hawn Literature (3) Focuses on indigenous oral and written literature forms and their relationship to folk tales. Pre: HWST 463, 454 or instructor's consent.

HWST 664 European Influenced Hawn Lit (3) Hawaiian literature developed on European models such as biographies, late nineteenth-century histories and journals. Pre: HWST 453 and HAW 425.

HWST 665 Ethnological & Hist Narratives (3) Descriptions written in Hawaiian regarding traditional Hawaiian culture and history. Cultural topics range from religion and court life to farming and fishing. Conducted in Hawaiian. Pre: HAW 453, HWST 663. Recommended: ANTH 385, 386 and HWST 213.

HWST 690 Study in Overseas Ind Lg Comm (3) Individual off-campus field work experience in an overseas endangered indigenous language community. Participant-observation and interviewing to learn about endangered status of the language and ongoing revitalization work. Comparison to Hawaiian as an endangered language.

HWST x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

HWST x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. Pre: instructor's consent.

Ke'elikōlani Education (KED)

Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language

KED 550 Coop Tchg Sem Maui Ola (2) Indigenous teacher education issues for providing effective professional leadership for new teachers. Content focuses on teacher development and support strategies, assessment of performance, and conducting effective conferences for the student teacher. Must be taken CR/NC. Conducted in Hawaiian. Pre: teaching license with a minimum of one year Hawaiian language immersion, Hawaiian Studies, or Hawaiian language teaching experience; minimum of three years college-level Hawaiian language course work; and permission from the College.

KED 554 Maui Ola: Learning & Teaching (4) A systematic approach to develop, implement and assess culture-based learning and teaching for the maui ola environment. Content includes understanding of the natural learning cycle; lesson design and delivery; application, alignment, infusion, and assessment of standards; and curriculum cohesiveness. Conducted in Hawaiian.

KED 620 Foundations for Hawn Medium Ed (3) Goals of Hawaiian medium education and their cultural, philosophical, historical and legal bases. Basic tools for planning, developing, delivering and evaluating instruction of Hawaiian-speaking children, including techniques for management and age-appropriate development from a Hawaiian cultural base. Conducted in Hawaiian. Pre: Permission from College.

KED 621 Lang Arts in Hawn Medium Educ (2) Literacy in Hawaiian and associated comprehension and speaking skills. Teaching other languages, including English, to Hawaiian-literate students. Use and teaching of oral and written literature in dramatized presentations. Conducted in Hawaiian. Pre: Permission from the College.

KED 623 Social Studies Hawn Medium Ed (2) Major global and local social processes that affect the lives of Hawaiian-speaking children and their families. Integration of social studies and practical arts with a Hawaiian historical and cultural perspective. Conducted in Hawaiian. Pre: Permission of the College.

KED 625 Phys Ed in Hawn Medium Ed (1) Group and individual expression to convey thoughts and emotions through various media including music, fine arts, dance, fitness and computer technology. Understanding and appreciation of such expressions and their integrations into Hawaiian tradition. Conducted in Hawaiian. Pre: Permission from the Academic Studies Division, Ka Haka 'Ula O Ke'elikōlani College.

KED 626 Science in Hawn Med Education (2) Scientific concepts within a Hawaiian cultural and environmental framework. Techniques for teaching content, problem-solving, and critical thinking to Hawaiian children. Conducted in Hawaiian. Pre: Permission from the Academic Division, Ka Haka 'Ula O Ke'elikōlani College.

KED 627 Math in Hawn Medium Education (2) Mathematical concepts within a Hawaiian cultural and environmental framework. Techniques for teaching content, problem-solving and critical thinking to Hawaiian-speaking children. Conducted in Hawaiian. Pre: Permission from the Academic Division, Ka Haka 'Ula O Ke'elikōlani College.

KED 628 Arts in Hawaiian Medium Educ (1) Group and individual expression to convey thoughts and emotions through various media including music, fine arts and dance. Understanding and appreciation of such expressions and their integration in Hawaiian tradition. Conducted in Hawaiian. Pre: Permission from Academic Division, Ka Haka 'Ula O Ke'elikōlani College.

KED 630 Res Meth in Indigenous Lang (3) Seminar in which students explore and choose a thesis topic or applied project topic.

KED 641 Hawaiian Medium Field Exp I (9) Practical experience and application of teaching methods and strategies in content areas in Hawaiian medium schools. Must be taken CR/NC. Conducted in Hawaiian. Pre: KED 620, 621, 622, 623, 624; concurrent enrollment in KED 642 and permission from the College.

KED 642 Hawaiian Med Fld Exp I Seminar (3) Problems in application of theory in the delivery of instruction in Hawaiian medium classrooms. The interface between Hawaiian medium and English medium classrooms of an individual school. Must be taken CR/NC. Conducted in Hawaiian. Concurrent registration in KED 641 and permission from the College.

KED 643 Hawaiian Medium Fld Exp II (9) Supervised teaching in Hawaiian medium schools. Must be taken CR/NC. Conducted in Hawaiian. Pre: concurrent registration in KED 644 and permission from College.

KED 644 Hawaiian Med Fld Exp II Sem (3) Issues in the delivery, administration, and support of Hawaiian medium education. Must be taken CR/NC. Conducted in Hawaiian. Pre: concurrent registration in KED 643 and permission from the College.

KED 660 Indigenous Culture-based Educ (3) Understanding appropriate education of indigenous peoples, through a review of practices that have been described and theories that have emerged from a variety sources.

KED 661 Curr Dev Maui Ola-based Sch (3) Seminar in the development of an integrated curriculum from the earliest to the highest levels of Hawaiian language medium schooling, using international research and standards of excellence within a Hawaiian language and culture context and world view.

KED 662 Indigenous Well-being Thru Edu (3) Psychological and cultural perspectives of human development and well-being of indigenous peoples. Designed to promote, nurture, explore and understand the influence of culture on the indigenous person. Of special interest to educators in schools serving indigenous students regarding cultural understandings and change in a historical and contemporary context.

KED 693 Applied Rsrch in Indigenous Ed (3) Seminar in which students develop projects providing direct application to an aspect of indigenous language and culture education.

KED x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

KED x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. Pre: instructor's consent.

Ke'elikōlani Indigenous Language (KLAN)

Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language

KLAN 701 Semantic/Pragmatic Indig Lang (1) Seminar study of meaning and connotations as conveyed by the morphemes and vocabulary of a language, by its idioms and set metaphors and by other features. Focus on the indigenous languages being studied by the enrolled students.

KLAN 702 Stylistics/Domains Indig Lang (1) Seminar study of identity, levels of formality, and art as conveyed in languages. Informal peer group language to highly formal language. Highly traditional usages to the most contemporary of usages. Focus on the indigenous languages being studied by enrolled students.

KLAN 703 Semantics-Prag of Indig Langua (3) Meaning and connotations as conveyed in a specific indigenous language through morphemes and vocabulary, idioms and set metaphors, and through other features. Alpha varies according to the language, e.g. Hawaiian, Blackfoot, Rapanui. May be repeated if content is different. Pre: KLAN 701.

KLAN 704 Stylistics-Domain of Indig Lan (3) Identity, levels of formality and art as conveyed in a specific indigenous language from the informal peer group language to highly formal artistic usages and from very traditional rooted situations to the most contemporary of usages. Alpha varies according to the language, e.g., Hawaiian, Blackfeet, Rapanui. May be repeated if the content is different. Pre: KLAN 702.

KLAN x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

KLAN x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. Pre: instructor's consent.

Ke'elikōlani Indigenous Studies (KIND)

Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language

KIND 601 Language Maintenance and Shift (3) Introduction to the study of social, historical, political, cultural and economic factors leading to language shift.

KIND 602 Meth/Resou Indig Lang Comm Blg (3) Detailed overview of the various challenges to language and culture revitalization and approaches to solving those challenges, including issues of leadership, goal setting prioritizing and resourcing.

KIND 690 Fld Stdy Indigenous Community (3) Off-campus field work experience in an indigenous language other than Hawaiian. Pre: Graduate status in Ka Haka 'Ula O Ke'elikōlani and permission of the instructor. See graduate program chair for overseas minority language study option as substitute for this course.

KIND 700 Master's Thesis Research (1-6) Research and writing of thesis. Pre: Permission of college and instructor.

KIND 730 Rsch Meth Hwn Ind Lang Culture (3) Seminar in which students explore and choose a dissertation topic.

KIND 800 Doctoral Dissertation Research (1-6) Research and writing of dissertation. Pre: Permission of college and instructor.

KIND x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

KIND x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. Pre: instructor's consent.

Ke'elikōlani Linguistics (KLIN)

Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language

KLIN 601 Genrl Ling Indigenous Context (3) A broad overview of contemporary linguistics with a focus on indigenous languages.

KLIN 603 Sociolinguistic Anal Indig Lan (3) Expansion from KLIN 601 in the study of the relationship between language and society. Topics covered include varieties of languages (e.g., standard languages, varieties/ dialects/pidgins/creoles/registers/styles) and types of speech communities (e.g., bi/multilingual, diglossia) and functions of language. Focus on application to indigenous language contexts. Pre: KLIN 601.

KLIN x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

KLIN x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. Pre: instructor's consent.

Nursing (NURS)

College of Arts and Sciences, School of Nursing

NURS 601 Social Aspects of Health (3) Complex interactions among the physical and social environment; health status; education; culture; and human capital in urban and rural communities are examined. Issues related to quality of life as the outcome of micro and macro-determinants of health, consequences of health that operate at the individual, family, neighborhood, community, national and global levels, and the influence of sociopolitical agendas and community organizations are addressed through a multidisciplinary framework.

NURS 602 Information Systems/Technology (3) Examines emerging health information resources including: 1) the theory and conceptual base for healthcare information systems and technology; 2) design, selection, and use of current and developing health information technology applications; and 3) approaches to evaluating the effectiveness of health information systems used in health care systems, for patient care and in education.

NURS 603 Adv Clinical Pharmacology (3) Focus on the pharmacotherapeutic principles of drugs most commonly used by advanced practice nurses. Emphasis on the process of selecting appropriate agents for therapy, and monitoring adverse drug reactions or interactions with prescription, over-the-counter and alternative therapies. Emphasis on integration of pharmacy, physiology and physical assessment in developing evidence-based primary clinical management skills for patients across the lifespan with regard to their medication use. Foundations of prescriptive authority will be addressed.

NURS 604 Advanced Clin Pathophysiology (3) Advanced pathophysiological concepts and clinical manifestations of diseases necessary to support clinical decision-making of advanced practice nurses in the management of common acute and chronic diseases of adults, older adults and children are presented. Internal and external causative factors for disease expression including genetic, autoimmune, environmental, and biochemical will be addressed and rational therapies to prevent or control illness will be offered. Analysis of the interrelated effects of genes, environment, and lifestyle on patterns of disease in populations will be an integral part of developing evidence-based care. Relevant screening and diagnostic laboratory evaluation methods will be presented.

NURS 605 Advanced Health Assessment (4) (lec., lab) Focus of this course is on the integration and synthesis of knowledge from natural and behavioral sciences, humanities and nursing in order to conduct a comprehensive history and physical examination. Diagnostic reasoning for the purpose of clinical decision-making and problem solving will be stressed. Interview techniques will address developmental, psychosocial, cultural and occupational concerns as well as symptoms. Advanced examination skills and analysis of pertinent diagnostic data will support critical thinking and selection of accurate differential diagnoses. Faculty and preceptors facilitate laboratory and clinical experiences in a variety of settings (90 clock hours).

NURS 606 Rural Health Promotion (3) Focus is on the responsiveness of organizational health services to health needs of populations, individuals, and families in rural communities. The impact of political, ecological, economic and cultural factors on community health in rural areas will be analyzed. Utilization of evidence-based processes and collaborative leadership in designing and structuring health promotion services to address rural community needs are emphasized.

NURS 606L Rural Health Promotion Lab (3) (lab) This is a supervised advanced practice practicum focusing on health promotion and clinical management of the health concerns of adult clients as commonly encountered in diverse and rural primary care settings. Emphasis will be placed on culturally appropriate evidence-based practice, consultation, research and evaluation. Three (3) semester hours of supervised practicum hours (135 clock hours) are required.

NURS 607 Primary Care of Adults (3) Course focus is on primary care of adults addressing the evidence-based strategies for health promotion and disease prevention. Integration and application of advanced pathophysiology and pharmacology will aid in addressing the management of common acute, episodic and chronic health problems. Transcultural and biobehavioral assessments are used in the diagnosis and evidence-based management of health problems and are integrated into patient education and evaluation of care.

NURS 607L Primary Care of Adults Lab (3) (lab) This supervised advanced practice practicum focuses on health promotion and clinical management of the health concerns of adult clients as commonly encountered in diverse and rural primary care settings. Emphasis will be placed on culturally appropriate evidence-based practice, consultation research and evaluation. Three (3) semester hours of supervised practicum hours (135 clock hours) are required.

NURS 608 Primary Care of Older Adults (3) Building on the management of acute and chronic illness of the adult, this course emphasizes special needs of the older adult. The focus on quality of life will be supported utilizing theories of aging, management of complex chronic health problems, polypharmacy, dementia and frailty. Evidence-based management plans incorporating transcultural and functional assessments are used to address issues of self-care, family care giving, surrogate decision-making and end of life care.

NURS 608L Prim. Care of Older Adults Lab (3) (lab) This supervised advanced practice practicum focuses on promotion and clinical management of the health concerns of older adult clients as commonly encountered in diverse and rural primary care settings. Emphasis will be placed on culturally appropriate evidence-based practice, consultation, research and evaluation. Three (3) semesters of supervised practicum hours (135 clock hours) are required.

NURS 609 Primary Care of Women (2) The provision of comprehensive and culturally competent primary care to women including the maturation process from menarche, through pregnancy, childbearing period and menopause is presented. Emphasis is on evidence-based health assessment, diagnosis, health education, health promotion, disease prevention, perinatal care, clinical management and evaluation of common gynecologic and obstetric health care needs of women commonly encountered in diverse and rural settings.

NURS 609L Primary Care of Women Lab (2) (lab) This supervised advanced practice practicum focuses on health promotion and clinical management of the health concerns of female clients as commonly encountered in diverse and rural primary care settings. The health and wellness, perinatal care, gynecologic aspects of care and occupational health concerns of women will be specifically addresses. Emphasis will be placed on culturally appropriate evidence-based practice, consultation, research and evaluation. Two (2) semester hours of supervised practicum hours (90 clock hours) are required.

NURS 610 Primary Care of Children (2) Using normal development and physiology as the foundation of care, evidence-based management of the health and social needs of children will be addressed. Management of acute and episodic illnesses in children commonly encountered in diverse primary care settings is emphasized. Health education, health promotion and disease prevention of children are addressed.

NURS 610L Primary Care of Children Lab (2) (lab) This supervised advanced practice practicum focuses on health promotion and wellness for infants, children and adolescents. Students will focus on clinical management of common acute and chronic health conditions encountered in diverse and rural primary care settings related to infants, children and adolescents. Emphasis will be placed on culturally appropriate evidence-based practice, consultation, research and evaluation. Two (2) semesters hours of supervised practicum hours (90 clock hours) are required.

NURS 611 Advanced Research Methods (3) This course focuses on the systematic examination and application of the qualitative, quantitative, and outcome processes used in nursing research. The interrelationships among research theory, research ethics and evidence-based nursing practice are explored. Uses of culturally appropriate research database tools consistent with specific patients or populations are included.

NURS 612 Evidence Based Practice (3) Focus is on culturally appropriate evidence-based practice (EBP) used to produce best outcomes for diverse populations. Steps of the EBP process, implementation and evaluation of EBP, practical strategies and information systems approaches are explored. Proposal development for the practice inquiry project will be a primary objective of the course and will address issues and practices relevant to culturally diverse and rural populations.

NURS 613 Program Develop/Evaluation (3) This course builds on the synthesis of evidence-based knowledge for a specific culturally diverse clinical target population/practice. Students will identify and propose appropriate strategies for organizational/practice program development and evaluation. An innovative policy action plan for a population of interest based on an understanding of the cultural, financial, legal, and human resource needs of the health care environment is developed.

NURS 614 System-Based Leadership (3) Leadership and management concepts used to address complex microsystem and macrosystem issues within selected health organizations are explored. The role of the DNP within complex health organizations will be addressed using the interrelationships of special theoretical frameworks and models of care. Emphasis is on the application of advanced communication skills necessary to serve on collaborative and interdisciplinary teams within health care organizations.

NURS 615 Health Policy: Local to Global (4) Emphasis will be on exploration and analysis of health policy from the perspective of evidence development, analysis, and socio-economic context. The leadership role of the DNP in developing and implementing health policy is examined. Social justice, access equity, and delivery of health care services will be discussed. Opportunities are provided to participate in the political processes impacting nursing and health care policy. Includes two semester hours of a specialty focused practicum (90 clock hours).

NURS 616 Health Economics (3) Basic economic theory, market drivers and restraints, cost/benefit analysis, and reimbursement are analyzed. Theory and application are integrated with a focus on the role of the DNP in complex healthcare organizations, the delivery of healthcare in rural settings, and the DNP as entrepreneur. Issues of equity, fairness, ethics, and efficacy in health care resource allocation and management are explored.

NURS 617 Practice Inquiry/Project (6) Emphasis is on the synthesis, critique and application of evidence to support quality clinical or organizational practices in complex health care organizations. Students will implement an evidence-based clinical study or project on a topic of practice interest targeting a culturally diverse and vulnerable population, present an oral presentation of the study or project, and submit a scholarly paper from the study or project. Includes six semester hours of cognate residency.

NURS 618 EPI/Environmental Health (3) Epidemiological concepts and quantitative research techniques used in modern epidemiology will be examined as well as the health effects on the general population associated with selected environmental exposures. The course emphasizes analytical studies, quantitative measures of association, and critical readings of current literature. Epidemiology approaches estimating the burden of disease and evaluation of primary, secondary and tertiary prevention strategies are presented.

NURS 619 Mentorship in Nursing Educ (3) Supervised practicum in instructional planning and teaching in nursing education. Students may choose between two pathways: mentorship and teaching in a didactic course or clinical practicum.

NURS 620 Contemp Health Care Ethics (3) Contemporary Health Care Ethics provides a thorough grounding in ethical principles and theories as evidenced in current healthcare issues and policies. Introduction of various frameworks for ethical decision-making and policy analysis, as well as current trends in the political, economic and legal spheres of the contemporary health care arena.

NURS x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

NURS x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. Pre: instructor's consent.

Pharmacy Practice (PHPP)

Daniel K. Inouye College of Pharmacy

PHPP 501 Intr Pharm Prac Experiential I (1) First year pharmacy students will spend a semester in either the retail pharmacy setting or hospital pharmacy setting to observe pharmacy practice. Graded: P/NP. (GenEd/IntReq: GCC)

PHPP 502 Int Pharm Prac Experiential II (1) The second course in the IPPE sequence will build on the skills and the knowledge of PHPP 501 to develop pharmaceutical care practice. Graded: P/NP.

PHPP 503 Intr Pharm Prac Experien III (1) Second year students will begin to develop their patient interview, chart gathering and case development and presentation skills. Students will spend one semester in community health care clinics and one semester in a long term care facility. Students will present actual patient care cases in a seminar format throughout the semester. Graded: P/NP. (GenEd/IntReq: GCC)

PHPP 504 Intr Pharm Prac Experien IV (1) Second year pharmacy students will begin to develop patient interview, chart gathering and case development and presentation skills. Students will spend the semester either in a community health care clinic or in a long term care facility. Student will present actual patient care cases in a seminar format throughout the semester. Graded P/NP.

PHPP 505 Intr Pharm Prac Experiential V (1) This course is the fifth course in a sequential series. Content encompasses exposure to institutional hospital pharmacy. Pre: Acceptance in the UH Hilo CoP. (GenEd/IntReq: GCC)

PHPP 508 Intro to Biostatistics (3) This course serves as the structural framework for a career that relies heavily on the ability to understand, evaluate and communicate medical information. The student will learn basic statistical and epidemiologic skills critical for the evaluation of medical literature and for conceptualizing what constitutes truly evidence-based medicine.

PHPP 509 Adv Pharm Pract Exp: Medicine (5) This six week rotation will place students in a hospital or other acute care facility to learn about pharmaceutical care in an inpatient environment. Students will work closely with physicians and clinical pharmacists to provide services to acutely ill patients and provide clinical pharmacy services. Students may round with medical teams or be partnered with other physicians to learn more about the interface between medicine and pharmacy.

PHPP 510 Fnd Int Therapeut/OTC Drugs (3) This course continues the introduction to the integrated therapeutics sequence of courses begun in the PHPP 511 Culture/OTC. The integrated therapeutics series is the core of the pharmacy curriculum, combining therapeutic knowledge with the application of pharmaceutical care. This course continues the in-depth review of over-the-counter medications, development of Top 200 prescription drug knowledge and provides a foundation for understanding and interpreting laboratory test values.

Pre: Admission to Pharm D program.

PHPP 511 Culture & Inter-Prof Hlth Care (2) The concept of health care teamwork is not new but also not well-understood. The purpose of this course is to provide a framework for optimizing teamwork in health care. Examples of how team conflicts can be minimized or avoided will be discussed. In addition, the impact of culture on pharmaceutical care and teamwork will also be discussed, stressing the importance of recognizing potential differences between individuals.

PHPP 514 Evidence-Based Medicine (3) In this course, students will learn about research methods and biostatistics necessary for the critical evaluation of medical literature. Students will be exposed to descriptive statistics, inferential statistics, probability, Type I and Type II errors, bias and confounding, sample size and statistical power, absolute and relative risk, intention-to-treat analyses, number needed to treat and confidence intervals. Students will learn how to critically evaluate medical literature and recognize errors in study design or statistical methodology and determine the internal and external validity of published research trials.

Pre: PHPP 508 (Biostatistics).

PHPP 515 Integrated Therapeutics I (7) This is the first course in a sequence of four courses. Pathophysiology, medicinal chemistry, pharmacology and therapeutics will be integrated into one discipline in this course that will examine pharmacotherapy based on organ systems of the body. Students will learn to blend their factual knowledge of basic sciences and apply this knowledge to drug treatment of specific disorders in disparate patients. Beginning in this course the pharmacotherapy of all major diseases states covered by organ system.

PHPP 516 Integrated Therapeutics II (7) Continuation of the medicinal chemistry, pharmacology, pathophysiology and therapeutic use of drugs which was started in Integrated Therapeutics I. An integrated approach to the following topics will be covered: gastrointestinal, genitourinary, endocrine, renal, and pulmonary diseases.

PHPP 517 Integrated Therapeutics III (7) Continuation of pharmacotherapy of disease states by organ systems which was started in PHPP 515, Integrated Therapeutics I, and continues in PHPP 516, Integrated Therapeutics II. An integrated approach to the following topics will be covered: disease states associated with the endocrine and central nervous systems.

PHPP 518 Integrated Therapeutics IV (7) This course is a continuation of PHPP 515, 516, and 517. It will cover the topics of infectious disease and oncology in an integrated fashion.

PHPP 519 Health Care Systems (2) This course is designed to give students a history and overview of the American health care system. Roles of the major drivers in health care including government, employer groups, HMO's, hospitals, providers and payors will be examined. Market components of prescription drug utilization will be discussed in detail. Additionally, the European health care model will be compared to the American system.

Pre: second year standing in COP.

PHPP 520 Pharmacy Law and Ethics (3) The evolution of the practice of pharmacy has led to pharmacists facing an overwhelming number of legal issues. In addition to the standard coverage of the FD&C Act, the Controlled Substances Act and regulations of the Federal Trade Commission, this course will help student understand legal issues such as HIPAA privacy issues in the pharmacy, electronic prescribing, medication error reporting, professional liability insurance and Medicaid/Medicare issues. Current and past cases in the law will be used as practical examples of these concepts. In addition, students will participate in discussions and debates of ethical issues facing pharmacists in today's health care environment.

PHPP 521 Applied Pharmaceutical Care (3) This course will consist of workshop and case presentations to incorporate physical assessment skills and multi-disease state cases. Students will work in large and small sized groups to review patient cases and present in the SOAP format. This course will be the capstone course for the Pharmacy Practice curriculum before the Advanced Pharmacy Experiential rotations and will emphasize critical thinking and evaluation for multi-disease state patient cases as well as patient education.

PHPP 522 Pharm Practice Mgmt & Mktng (2) The first part of the course, marketing of pharmacy services, programs or products, is intended to use the marketing skills learned, to effectively collaborate in groups to develop a two market plan for innovative pharmacy services, programs or products. In developing these market plans, topics covered in lecture including consideration of economic, environmental, marketing and financial factors are stressed along with the use of appropriate outcome measures to determine success of the plans. Group interaction and activities will further help build upon principles learned in the course and ultimately culminate in the completion of a formal business proposal which will be presented to an executive committee. The second part of this course deals with practice management and is designed to introduce concepts and encourage further development of essential managerial skills, specific areas of focus includes personnel management, dealing with conflict in the work place, and continuous quality improvement. Communicating, understanding, and collaborating with fellow employees or colleagues are vital to any practice and are demonstrated through activities over the duration of the course. This section also includes certain standard practice that is carried out as managerial responsibilities in the health care setting.

Pre: Admission to PharmD.

PHPP 523 Wellness & Disease Prevention (2) This course provides students with an overview of what constitutes a healthy lifestyle and how it contributes to the prevention of chronic disease. Pharmacists are key providers in helping to educate patients about wellness and disease prevention. Disease State Management (DSM) is an organized, coordinated process to manage specific disease states over the entire course of the disease to improve clinical and economic outcomes for the patient. Students will be exposed to important DSM models such as the Asheville Project in North Carolina and utilize this information in creating a disease management program.

PHPP 524 Pharmacoeconomics (3) This course introduces pharmacy students to the basic concepts, terminology, and applications of pharmacoeconomics and its usefulness in making informed decision in health care. Students will learn types of outcome evaluation and outcome measures, the appropriate uses and applicability of cost-of-illness, cost-minimization, cost-effectiveness, cost-benefits, cost-utility, and decision analyses. Evaluation of the humanistic outcomes associated with drug therapy and the provision of pharmaceutical care on quality of life including the utilization of sensitivity analyses, decision analysis models, and discounting will also be reviewed. Emphasis is placed upon the reading, interpretation, and critical evaluation of different types of published pharmacoeconomic studies in the medical literature. The goal of this course is to nurture the student an appreciation for the role of pharmacoeconomics in health care.

PHPP 525 Complementary Medicine (3) This course is designed as an overview of complementary medicine. Students will be presented a balanced unbiased view of the theory and practice of some of the more popular complementary therapies such as acupuncture, traditional Chinese medicine, homeopathy, herbal medicine, and other dietary supplements. (GenEd/IntReq: HPP)

PHPP 527 Drug Information (2) Pharmaceutical care requires pharmacists to become the primary source of drug knowledge. Effective drug information and searching, interpreting, synthesizing and disseminating skills are a vital part of routine pharmacy practice. In preparation for practice and life-long learning, it is critical that all pharmacy students receive adequate training in drug information and drug literature/resource evaluation as a fundamental core upon which to build their clinical skills.

Pre: Admission to the PharmD.

PHPP 528 Pharmacy Communications (2) This course is design to support student pharmacists in learning the skills needed to effectively communicate with patients and other health care providers. Students will practice various communication skills by role playing. These skills include but are not limited to improvement of patient care and commitment, development of relationships with patients, choosing to see patients as living beings, improvement of listening skills and empathetic responding, patient counseling, management of the angry patient, helping patients cope with change, interaction with other health care providers, effective communicating and appropriate responding, and cultural competence and sensitivity.

Pre: Admission to the Pharm D.

PHPP 540 Adv Pharm Prac Exp: Ambulatory (6) This six week rotation focuses on pharmaceutical care in the ambulatory care environment where students will interface with their pharmacist preceptor, physicians, nurses and other health professional to provide services to ambulatory care patients. Some examples of ambulatory care practices will include hypertension clinics, anticoagulation clinics, hyperlipidemia clinic, medication therapy management (MTM) services and disease state management.

PHPP 541 Adv Pharm Prac Exp: Community (6) This six week rotation focuses on pharmaceutical care in the community pharmacy setting where students will work with pharmacy preceptors to learn about dispensing techniques, pharmacy databases, community pharmacy management, patient counseling, over the counter (OTC) medications, medication therapy management (MTM), and disease state management.

PHPP 542 Adv Parm Prac Exp: Medicine (6) This six week rotation will place students in a hospital or other acute care facility to learn about pharmaceutical care in an inpatient environment. Students will work closely with physicians and clinical pharmacists to provide services to acutely ill patients and provide clinical pharmacy services. Students may round with medical teams or be partnered with other physicians to learn more about the interface between medicine and pharmacy.

PHPP 543 Adv Pharm Pract Exp: Hospital (6) Six week rotation will place students in a hospital pharmacy where they will learn about unit dose systems, automated dispensing units, parenteral drugs, intravenous mixture systems, sterile produce preparation, hospital pharmacy computer systems, physician order entry, crash cart systems and DRG/ICD-9 systems used in tracking patient diagnoses and reimbursement for services.

PHPP 544 Adv Pharm Pract Exp: Elect I (6) Six-week rotation will place students in the many different areas of pharmacy practice including: adult medicine, pediatrics, geriatrics, infectious disease, critical care, oncology, cardiology, psychiatry, ambulatory care, community practice, drug information, pharmacy compounding, home health care, clinical or basic sciences, research and pharmacy administration.

PHPP 545 Adv Pharm Pract Exp: Elect II (6) This six week rotation will place students where they may spend time in the many different areas of pharmacy practice including: adult medicine, pediatrics, geriatrics, infectious disease, critical care, oncology, psychiatry, ambulatory care, community practice, drug information, pharmacy compounding, home health care, clinical or basic sciences research, and pharmacy administration.

PHPP 546 Adv Pharm Practice Experience (6) This course is an advanced pharmacy practice experience elective that directly involves patient care activities. Types of patients encountered—patients of all ages in the acute, ambulatory and community setting. Level of student responsibility - all students must have a current Hawaii Pharmacy Intern License, successfully completed the APhA immunization delivery course and accept all accountability for patient care. Disease State/conditions student may encounter: see PHPP 540, 541, 542, 543 syllabi. Pre: fourth year standing.

PHPP 550 History of Pharmacy (2) This elective is of value to appreciate the origin of pharmacy and the manner in which ancestors of the field practiced their art. These historical aspects will be discussed as well as techniques, tools, symbols, and art in pharmacy.

PHPP 553 Current Topics in Healthcare (1) Healthcare is no longer defined as a patient seeking the service of a provider. Healthcare inflation is exacerbated by the cost of government programs such as Medicare, unemployment, fraud, defensive medicine and changing technology in healthcare. Pending healthcare reform promises to change some of the healthcare delivery system as we know it today. This course will focus on the healthcare issues facing providers of healthcare with a focus on pharmacy, payers of healthcare, and users of the healthcare delivery system. Current events will be the basis of topics for discussion. Pre: PHPP 519.

PHPP 554 Zoonotic Diseases (1) This course is designed to introduce students to the definition, history, origin and transmission of zoonoses; commonly encountered zoonotic diseases as well as those commonly encountered in Hawaii. Covered are bacterial, tick-borne bacterial, fungal, parasitic, viral and prion zoonoses. Emphasis will be made on those that are life-threatening to humans, for example, leptospirosis, rabies, transmissible spongiform encephalopathies, etc. Pre: acceptance and second year standing in the College of Pharmacy.

PHPP 555 Intro to Veterinary Medicine (1–2) This course is designed to introduce students to the profession of veterinary medicine and how it is dependent on pharmacology. Lectures include veterinary medical education; and practicing small animal medicine, large animal medicine (equine and food animal), and exotic animal medicine, inclusive of the daily challenges encountered in practicing medicine. Introductions to diseases, whether infectious or non-infectious, of various etiologies will be made. The realms of veterinary medicine, for example, diagnostic tools (physical examination, imaging, clinical pathology, etc.), treatment options (medicinal, surgical, physical therapy, conservative, etc.) and career opportunities will be emphasized. Pre: Acceptance and second year standing in College of Pharmacy.

PHPP 556 Adv Topics in Hypertension (1) High blood pressure affects over 70 million people in the United States today. This disease carries significant morbidity and mortality which will only increase with our aging population. The treatment of hypertension is highly complex and frequently changes based on new clinical evidence. Students will discuss in depth the diagnosis and various treatments (both pharmacologic and non-pharmacologic) of hypertension. Pre: PHPP 515.

PHPP 557 Personal Finance (1) This course will provide an introduction to the basic principles and skills of personal financial management, including saving, borrowing, insurance, investment, and budgeting. Special emphasis will be given to the issues most relevant to new pharmacists, such as student loan repayment, financial implications of career mobility, and retirement options based on type of healthcare employer.

PHPP 559 Spanish for Healthcare Profess (1) This course provides a unique opportunity in developing culturally aware clinical language skills for the Spanish speaking patient population, optimizing all aspects of medication therapy management for this patient population. Pre: Second year standing in College of Pharmacy.

PHPP 560 Pharmacy Leadership (1) Leadership skills is one of the determining factors in the success of many new pharmacy graduates. This course will incorporate current literature, management theory and viewpoints of academic and practice community leaders to understand leadership at different levels in pharmacy practice environment. This course will focus on raising awareness of leadership and exercising core leadership skills in pharmacy students. Pre: admission to PharmD.

PHPP 561 Pharmacy and Therapeutics Comp (1) This course is designed to inform

pharmacy students about the importance and functions of Pharmacy and Therapeutics Committees. All hospitals and managed care organizations use P and T committees to make therapeutically appropriate pharmacoeconomic decisions about their formularies. This course will serve to navigate the mechanics of a P and T. All students will present a drug to the committee with a rationale for its inclusion or exclusion from a formulary. A competition will be held at the end of the course. Pre: Admission to the Pharm D.

PHPP 564 Advanced Managed Health Care (1) This course will provide an introduction to the basic principles and alphabet soup of managed healthcare, to include MCO's, PBM's, PPO's, HMO's, CDH, VA, and DoD. We will present and discuss topics of particular interest to the future of Pharmacy management including Pay-for-Performance, Medicare, and Medicaid along with a discussion on the Obama Health Care Reform. Special emphasis will be given to providing students a better understanding of the financial drivers of healthcare management within each segment. A discussion of taxonomy and functional differences between managed health care segments provide the framework for the operational differences. Pre: Acceptance in the College of Pharmacy and second or third year standing.

PHPP x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

PHPP x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. Pre: instructor's consent.

Pharmaceutical Science (PHPS)

Daniel K. Inouye College of Pharmacy

PHPS 501 Biochemistry - Biomolecules (3) The course will lay the biochemical foundation for the understanding of medicinal chemistry, pharmaceuticals, pharmacology and pathophysiology. The course will cover protein, DNA, and RNA function, in addition to their regulation and repair. The ultimate goal of this course is to present principles critical for understanding the biochemical basis for disease states and drug action.

PHPS 502 Biochemistry - Metabolism (3) "Biochemistry - Metabolism" will delve into metabolism and the interrelationships of metabolic processes. The biochemistry of metabolism focuses on glycolysis, the tricarboxylic acid cycle, the electron transport chain and oxidative phosphorylation, gluconeogenesis, and the synthesis and breakdown of biomolecules (carbohydrates, lipids, and amino acids). Metabolic control and regulation of pathways will be emphasized, including a discussion on the fundamentals of signal transduction in relation to hormone action. Clinical correlates and metabolic diseases will be examined.

PHPS 503 Pharmaceutical Calculations (2) In this course, students will learn the fundamentals of pharmaceutical calculations, including use of the SI system of units, methods of measurement and expressions of concentration. In addition they will learn what constitutes an accurate, understandable and legal prescription or medication order. Through a series of lectures and exercises based on intensive problem solving, students will learn to perform the calculations required for the preparation of a range of pharmaceutical dosage forms as well as for their proper administration to the patient. Emphasis will be placed on accuracy and prevention of medication errors.

PHPS 504 Pharmaceutical Immunology (3) Basic concepts of immunology, including innate immunity, antigen recognition, lymphocyte development and adaptive immunity will lay the groundwork for understanding immunity in a clinical context. Students will learn the role of the immune system in allergy, auto-immune disease, graft rejection and tumor immunogenicity. Methods of manipulating the immune system pharmacologically will be discussed as well as biotechnology applications.

PHPS 505 Pharmaceutics I (3) (lec., lab) Students will be introduced to issues, theory, and practice involved in the rational choice of drugs, dosage forms, and drug delivery systems, and the legal and professional issues in drug compounding. Discussion of Good Manufacturing Practices and Good Compounding Practices will carry over into the lab portion of the class. Students will become comfortable with equipment, procedures, and records used in the compounding of various dosage forms, and will practice clinical dispensing skills vital to shaping a truly professional pharmacist.

PHPS 506 Pharmaceutics II (3) (lec., lab) Students will be introduced to issues, theory and practice, involved in the rational choice of drugs, dosage forms and drug delivery systems, and the legal and professional issues in drug compounding. Discussions of Good Manufacturing Practices and Good Compounding Practices will carry over into the lab portion of class. Students will become comfortable with equipment, procedures and records used in the compounding of applications.

PHPS 507 Fnd of Int Therapeut/OTC drugs (3) This course serves as an introduction to the integrated therapeutics sequences of courses. The integrated therapeutics series is the core of the pharmacy curriculum. Material presented will emphasize topic areas that are foundational to the integrated therapeutics sequence of courses. Additionally, an in-depth review of over-the-counter medications will be presented.

PHPS 509 Pathophysiology (4) This course will begin with a review of basic physiological topics that are of special importance to pharmacy, e.g. the autonomic nervous and cardiovascular systems. Following this will be an introduction to the discipline of pathology.

PHPS 511 Pharmacokinetics (3) Students will learn about the time course a drug occupies in the human body. Topics to be covered include drug bioavailability, drug absorption, distribution, metabolism and elimination, pharmacokinetics of various dosage forms, routes of administration and drug effects over time. The effects of patient weight, gender and age on drug pharmacokinetics will be discussed along with the therapeutic variation that occurs with these patient parameters. Students will use pharmacokinetic calculations to be able to solve problems in clinical pharmacokinetics. Emphasis will be placed on using pharmacokinetic principles to decrease the risk of toxicity and improve therapeutic outcomes using a variety of commonly used medications.

PHPS 512 Intro to the Pharm Sciences (3) This course is designed to introduce first year pharmacy students to the areas included in Pharmaceutical Sciences. Areas that will be presented are Introduction to Pharmacology, Medicinal Chemistry and Pharmacognosy. This course will allow students to successfully transition into the integrated Therapeutics sequences of courses taught in years 2 and 3.

PHPS 550 Genetics in Medicine (2) This elective course will introduce the student to the basics of genetics and molecular mechanisms of inheritance as they apply to the treatment of disease and to the response of patients to drug therapy. Students will learn how genetics may lead to new strategies in drug development and treatment, how genetics may be used to predict patient response to specific treatments, and how responses are mediated. Emphasis will be placed on clinical and research applications.

PHPS 551 Substances of Abuse/Addiction (2) This elective course will provide an in-depth review of the neuropharmacology of substances of abuse including stimulants, depressants, hallucinogens and anabolic steroids. Other types of addiction will be discussed including gambling addiction. Special emphasis will be given to basic pharmacokinetic and pharmacodynamic mechanisms as they relate to the effects of the individual substances of abuse. Current theories of addiction and tolerance will be discussed.

PHPS 552 Dietary Supplements (1) A wide range of products are used in the United States and other parts of the world as aids for better health rather than as therapeutics for the treatment of disease. These products range from vitamins and minerals to herbal supplements used for a variety of purposes. In this course, the rationale for the use of these products will be examined as well as their safety and efficacy.

PHPS 553 Radioactivity in Pharmacy (1) Radiopharmaceuticals are playing a more and more important role worldwide. Particularly, the development of radiolabeled compounds for in vivo biochemical imaging tools like PET (positron emission tomography) and SPECT (single photon emission computed tomography) increased considerably.

PHPS 554 Herb Med & Hawaiian Med Plants (1) This elective course will cover the most popular herbal medicines, their chemistry (natural products), information resources, part(s) of plant origin, use, efficacy, safety, and potential drug interactions. A small student-centered research project is assigned with approval by the chair of the department.

PHPS 555 Geographic (Tropical) Medicine (1) This elective course will cover: policy makers and public health experts who have emphasized the growing need for global health literacy and global health capacity among U. S. healthcare professionals. The Institute of Medicine defines global health as health problems, issues, and concerns that transcend national boundaries, may be influenced by circumstances or experiences in other countries, and are best addressed by cooperative actions and solutions.

PHPS 556 Drugs from Natural Sources (1) This elective course will discuss original drugs used by man for the treatment of himself and his animals were all of natural origin and in some parts of the world the natural environment still provides the majority, if not all, of medications used on a day to day basis for the treatment of common and not so common ailments. Today the natural world is still the source of over 50% of pharmaceuticals either as direct products, derivatives thereof, or as lead structures.

PHPS 558 Drug Development & Regulation (1) The mechanism by which drug products are developed and approved for use in a global market is an evolving process. Concepts of quality by design employed in other industries such as aerospace are being adapted for pharmaceuticals with the intense encouragement of major regulatory agencies.

PHPS 559 Environmental Toxicology (1) This elective is designed to introduce students to the field of environmental toxicology. This course will focus more on ecotoxicology, rather than classical toxicology, and include topics such as xenobiotics, toxic and radioactive metal, toxicity of solvents and pesticides, halogenated aromatic compounds, environmental endocrine disruptors, and pharmaceuticals and personal care products in the environment.

Pre: Acceptance and second or third year standing in the College of Pharmacy.

PHPS 561 Emerging Trends Drug Discovery (1) This one credit elective course is designed to enhance the student's knowledge of emerging drug targets and related efforts in the drug discovery and development process. The emphasis of the course is on unique and emerging drug targets and is intended to reveal: how novel drugs will complement existing treatment options for various disease states.

Pre: Admission to PharmD.

PHPS 562 Disc & Dev of Blockbuster Drug (1) There is a critical point and an interesting story behind each pioneering breakthrough in medicine, when decisions were made as to whether to continue or terminate the development of a promising new drug. Throughout the lectures, the historical discovery and development of representative blockbuster drugs, which changed the world and saved millions of lives, will be discussed.

Pre: Acceptance and second year standing in the College of Pharmacy.

PHPS 563 Curr Adv in Neuropharmacology (1) This elective is designed to cover the current literature and latest discoveries in neuropharmacology. Course topics are from a variety of areas and can have a clinical or basic science emphasis but must cover the most recent findings in that field. The effect of a drug on the brain is a paramount concern for pharmacists. The action of drugs on the nervous system is the science of neuropharmacology. It comprises several areas of investigation of critical importance to science and medicine. Neuropharmacology involves studies aimed at understanding the mechanism by which drugs alter brain function. These include medications used to treat a wide range of neurologic and psychiatric disorders as well as drugs of abuse. Neuropharmacology uses this information to develop new medications with ever-improving efficacy and safety for diseases of the nervous system. Neuropharmacologic agents are valuable tools with which to probe the molecular and cellular basis of nervous system functioning.

Pre: Acceptance and third year standing in the College of Pharmacy.

PHPS 565 Genetics & Pharm of Malaria (1) This course will provide students with a better understanding of the role that genetic variation plays in disease susceptibility at both the individual and population levels. Genetic variation of human hosts and parasites will be covered with an emphasis on co-evolution. Drug action and mechanisms of drug resistance will be explored. The contemporary role of molecular genetic techniques in the detection of genetic variation, with applications toward vaccine development, will also be covered.

Pre: Second year standing in the College of Pharmacy.

PHPS 566 Emerging Trends Drug Discovery (1) This 1 credit elective course is designed to enhance the student's knowledge of emerging drug targets and related efforts in the drug discovery and development process. The emphasis of the course is on the drug development process, focusing on the phases of target identification and validation. This elective is intended to reveal: a) how novel drug modalities will complement existing treatment options for various disease states; b) scientific basis for the selection of a particular target; c) the validation of target choice through experimental methods; and, d) methods to integrate a novel target into the drug development pipeline.

Pre: Acceptance into the College of Pharmacy and concurrent registration in PHPP 518.

PHPS 567 Pharmacogenetics (1) This elective is designed to introduce students to the field of pharmacogenetics, the study of the genetic basis for variation in drug response. This course will discuss the development of pharmacogenetics, genetics and epigenetics within pharmacogenetics, age-related and ethnic factors in pharmacogenetics, some genomic tools used in pharmacogenetic research, cancer and HIV treatment and pharmacogenetics, and the future of pharmacogenetics research and discoveries.

Pre: Acceptance and third year in the College of Pharmacy.

PHPS 568 Antibiotic Mechanisms & Applic (1) This course will provide an exposition of the fundamental mechanisms of antibiotic action. The basic differences between prokaryotes and eukaryotes that provide for specific antibiotic targets will be emphasized. Mechanisms of antibiotics will include those that affect cell wall biosynthesis and metabolism, membrane structure and function, nucleotide biosynthesis, DNA replication and other nucleic acid transactions, transcription, and protein synthesis, as well as novel mechanisms. For each biological mechanism, the biological process, for example protein synthesis, will be reviewed to provide a framework for understanding the role of the antibiotic. Classes of antibiotics will include, but are not limited to, β -lactams, β -lactamase inhibitors, glycopeptides, isoniazid, aminoglycosides, tetracyclines, macrolides, lincomycin, streptogramins, oxazolidinones, fluoroquinolones, nitroimidazoles, rifamycins, sulfonamides, DHFR inhibitors, and polymyxins. Antibiotics from natural sources as well as synthetic antibiotics will be addressed. In addition, mechanisms by which microbes develop antibiotic resistance will be discussed.

Pre: Second or third year standing in the College of Pharmacy.

PHPS 569 Cancer Prevention (1) This course will discuss the 1) generic risk profiles and early detection (biomarkers) and 2) the prevention of cancer by reducing risk behavior (sun exposure, alcohol consumption, cigarette smoking, heavy metals in environment, physical exercise) as well as chemoprevention and vaccination against cancer-inducing viruses (HPVB, HBV). Completion of this course will provide the Pharm D. student with a comprehensive understanding of the current status in preventative cancer medicine.

Pre: Second or third year standing in Pharm D.

PHPS 591 Basic & Applied Toxicology (3) This course will provide a general foundation in the understanding of basic toxicological principles. The mechanisms of toxicity and contemporary treatment plans for the most common chemical, environmental and pharmaceutical agents are presented. Additionally this course will provide an in-depth review of the neuropharmacology of substances of abuse including stimulants, depressants, hallucinogens and anabolic steroids.

Pre: Second year standing in the College of Pharmacy.

PHPS 601 Integrated Pharmacotherapy I (7) In this first of a series of three courses, pathophysiology, pharmacology, toxicology, and therapeutics will be integrated into one discipline that will examine pharmacotherapy based on organ systems of the body. The course will begin with a discussion of SOAP notes and an introduction to pharmaceutical principles. Students will learn to blend their factual knowledge of the basic sciences and apply this knowledge to drug treatment of specific disorders in disparate patients. Synchronous video chats will tie in the pharmacotherapy discussed in lecture with the treatment of CNS disorders. On-site workshops will occur at various times during the semester.

Pre: Acceptance into the program.

PHPS 602 Integrated Pharmacotherapy II (7) This course is the second of a series of three courses. This course will begin with a discussion of pharmacoepidemiology and resources to obtain drug information. The major focus of this course will be a detailed coverage of the pathophysiology, pharmacology, toxicology, and therapeutics of CNS disorders that require pharmacotherapy. Students will learn to blend their factual knowledge of the basic sciences and apply this knowledge to drug treatment in disparate patients. On-site workshops will be provided at various times during the semester. During the semester students will submit six SOAP notes covering patients with both somatic and CNS related disorders. Synchronous video chats will be employed to relate the pharmacotherapy of somatic disorders with treatment of CNS disorders. A research paper covering the current and future pharmacotherapy of a CNS related disease state selected by the student and approved by the Course Coordinator. The course will culminate with each student presenting their research paper.

Pre: Acceptance into the Program.

PHPS 603 Integrated Pharmacotherapy III (4) The course will begin with an overview of Toxicology, then proceed to conclude the discussion of the pharmacotherapy based on organ systems of the body by integrating the pathophysiology, pharmacology, toxicology, and therapeutics. Students will learn to blend their factual knowledge of the basic sciences and apply this knowledge to drug treatment of specific disorders in disparate patients. Additional topics discussed will be professional, legal, ethical, and interprofessional issues that relate to ethics, standards of care, laws, and regulations relevant to the practice of psychology involving psychopharmacology. During the semester students will submit three SOAP notes covering patients with both somatic and CNS related disorders. The course will culminate with each student presenting their research paper.

Pre: Acceptance in the Program.

PHPS 604 Adv Psychopharmacology I (2) This course serves as the first of two capstone courses that will provide an in-depth coverage of psychopharmacology associated with the treatment of mental disorders. Students will present patient cases in weekly seminars that are based on patients seen in clinical settings from the Psychopharmacology Practicum course taught concurrently. This course will require students to demonstrate competence in medication therapy management specific to psychopathology. In addition, recent literature will be discussed that covers synergistic interactions between psychotherapy and pharmacotherapy and will examine the single practitioner vs. the split-treatment model.

Pre: Acceptance into the program. *Co-req:* PHPS 607.

PHPS 605 Adv Psychopharmacology II (2) Students will present patient cases in weekly seminars that are based on patients seen in clinical settings from the Psychopharmacology Practicum courses taught concurrently. This course will require students to demonstrate competence in medication therapy management specific to psychopathology. In addition, current and future pharmacotherapy of CNS disorders will be discussed: including methodology, standards and conduct of research of psychoactive substances. Drugs classes to be covered include: antipsychotics, antidepressants, mood stabilizers, anti-anxiety agents, sedative/hypnotic agents, narcotic analgesics, drugs used to treat the cognitive and behavioral effects of Alzheimer's disease, and drugs used to treat ADHD.

Pre: Acceptance into the program. *PHPS 604. Co-req:* PHPS 607.

PHPS 606 Human Physiology (3) This course is designed to provide an in-depth overview of topics in human physiology that provide a basis for understanding of pharmacology. The course will begin with a review of basic physiological topics including the autonomic nervous, central nervous, and the cardiovascular systems. Following this will be an introduction to the discipline of pathology with an emphasis on diseases of the nervous system. This course will be composed of recorded lectures, live workshops, and synchronous video chat sessions. There is also a requirement of a research paper on a topic of physiology chosen by the student with approval of the Course Coordinator.

Pre: Acceptance into the program.

PHPS 607 Psychopharmacology Practicum (2) Students will participate in a psychopharmacology practicum for eight hours per week for at least one-year. The total amount of hours per year is at least 400 hours. They will be supervised by a qualified clinical practitioner with demonstrated skills and experience in clinical psychopharmacology in accordance with the prevailing jurisdictional law. Clinical supervision will be for one hour per week or one hour per eight hours of patient contact. Students will be actively involved in consultation with physicians and/or appropriately credentialed psychologists regarding prescribing of psychoactive medications. The Clinical Psychopharmacology Practicum components will be consistent with APA Recommendations. The Psychopharmacology Practicum courses will require students to demonstrate competence in medication therapy management specific to psychopathology. Students will present cases from this practicum in the Advanced Psychopharmacology I and II courses taught concurrently. At the end of the training program, a capstone competency evaluation will be completed. Students will need to arrange their own practicum according to the guidelines listed in the course syllabus.

Pre: Acceptance into the program. *Co-req:* PHPS 604, 605.

PHPS 608 Law and Pharmacotherapy (2) This course will focus on the pathophysiology, pharmacology, toxicology and therapeutics of infections and respiratory processes. Students will learn the issues that relate to ethics, standards of care, laws and regulations relevant to the practice of psychology involving psychopharmacology.

PHPS 701 Apoptosis & Angiogenesis (1) The course will cover mechanisms of apoptosis, or programmed cell death, and angiogenesis, or new vessel growth, and mechanisms of their regulation in different cell types. Students will learn how unbalanced angiogenic and apoptotic responses contribute to a wide variety of disease conditions, including cancer, neurodegenerative, cardiac, inflammatory and autoimmune diseases. The course will discuss experimental techniques that are used in the studies of these processes. Part of the course is devoted to approaches to development of drugs that will modulate apoptotic and angiogenic processes, and discussions of critical signaling molecules in these pathways as potential targets for drug development efforts.

Pre: Approval of Major Professor.

PHPS 702 Bio Dev: Prin & Prac in Drug Disc (1) This course will explore the biological activities of secondary metabolites that are central to the process of drug discovery and development from nature. This course will emphasize the chemically-driven approach that seeks biological activities for purified compounds.

Pre: Approval of Major Professor.

PHPS 703 Cancer Biology (2) An introduction to cancer biology covering the processes involved in tumorigenesis (oncogenes, mutagenesis, proliferation, apoptosis, angiogenesis, invasion and metastasis). There will be discussion of active areas of interest such as cancer stem cells and the role of inflammation in cancer. Lectures will include descriptions of current therapeutics, describe efforts to design new drugs and recent clinical trials.

Pre: Approval of Major Professor.

PHPS 704 Com Chem & High Throughput Tec (2) This course is designed to teach students the essential elements of combinatorial chemistry and evolving high throughput technologies in drug discovery. Combinatorial chemistry and high throughput chemistries are dynamic, rapidly evolving fields that have an important role in drug discovery. Most pharmaceutical companies have now incorporated combinatorial and high throughput platforms into their drug discovery research program. Combinatorial chemistry is a relatively new approach to the synthesis of compound libraries in a highly efficient and automated fashion. The topics of this course will include, but not limited to, combinatorial chemistry and parallel synthesis; solid-phase organic synthesis; solution-phase synthesis with solid supported reagents and scavenger resin technology; diversity-oriented synthesis; dynamic combinatorial chemistry; high throughput screening of combinatorial libraries; microwave-assisted organic synthesis; fluoroscopy technology, fragment-based drug discovery; and automation and instrumentation.

Pre: Approval of Major Professor.

PHPS 705 Designing Clinical Research (3) The course introduces the science and methodological principles of undertaking clinical research. Emphasis is placed upon clinical trials of complementary and alternative medicine therapies. Topics include research question/problem/objective, research hypothesis, research processes, types of clinical research design, strengths and weaknesses of each design, measurements, concepts of reliability and validity, sampling designs, recruitment, sample size determinations, chance and bias, threats to the internal and external validity, monitoring safety and efficacy data, statistical tests and data management, ethical and regulatory considerations, translational research and funding agency. Students will be given the opportunity to identify a researchable idea/ question and design his/her own clinical or translational research project by preparing a written mini-proposal and then its presentation.

Pre: Approval of Major Professor.

PHPS 706 Environmental Toxicology (2) This course is designed to introduce students to the field of environmental toxicology. The emphasis will focus more on ecotoxicology, rather than classical toxicology. Topics that will be covered include toxic and radioactive metal, toxicity of solvents and pesticides, halogenated aromatic compounds, environmental endocrine disruptors, and pharmaceuticals and personal care products in the environment. The environmental impact of global warming will also be addressed. Course format will include student lead discussions and presentations, lectures, and general discussion.

Pre: Approval of Major Professor.

PHPS 707 Genetics in Medicine (2) This course will provide an exposition of the fundamental principles of human and medical genetics with emphasis on the genes and molecular mechanisms operating in human diseases. The contributions made by genetic variation to disease susceptibility and treatment outcomes will be discussed. Clinical cases will be used to demonstrate and reinforce the general principles of disease inheritance, pathogenesis, diagnosis, management, and genetic counseling. Students will learn how understanding genetics can lead to new strategies in drug development and treatment. A combined laboratory and seminar experience will provide students with hands-on experience and keep students abreast of recent developments in the field by presenting current literature.

Pre: Approval of Major Professor.

PHPS 708 Isolation Meth for Nat Pro Dsc (2) This course will examine the theory and practice of the various types of chromatographic and non-chromatographic methods that are commonly used for the isolation of biologically active natural products from plants, microorganisms and marine organisms on scales ranging from microgram to kilograms of pure compound. Starting with simple extraction methods, the course will progress through liquid-liquid interactions to liquid-solid interactions and then to gas-solid interactions. Completion of this course will provide the student an understanding of the application of each of the techniques discussed, as well as their relative advantages and disadvantages.

Pre: Approval of Major Professor.

PHPS 709 Inst Meth & Struct Elucidation (2) This course will introduce many of the pieces of spectroscopic equipment relevant to solving the three dimensional structure of organic molecules. Hands on use of the equipment to obtain spectroscopic data will be an emphasis of this course. The other emphasis of this course will be how to interpret the recorded information to enable a viable chemical structure to be proposed. During each session it is anticipated that prepared examples and examples arising from current research will be used to enhance participants' knowledge.

Pre: Approval of Major Professor.

PHPS 710 Lab Animal Care, Mgt & Med I (2) This course is part one of a two part lecture series and is designed to introduce students to the care and use of laboratory animals in accordance with the National Research Council and the Institutional Animal Care and Use Committee (IACUC). Included in this course are alternatives to traditional use of live animal species and the laws, regulations and guidelines important to laboratory animal research. Emphasis will be placed on the use of rats and mice, rodent anesthesia and analgesia and rodent surgery.

Pre: Approval of Major Professor.

PHPS 711 Lab Animal Care, Mgt & Med II (2) This course is part two of a two part lecture series and is designed to introduce students to the care and use of laboratory animals in accordance with the National Research Council and the Institutional Animal Care and Use Committee (IACUC). Included in this course is a review of Laboratory Animal Care, Management and Medicine I. Emphasis will be placed on rabbits, Mongolian gerbils, guinea pigs, Syrian hamsters, dogs and cats, and primates.

Pre: Approval of Major Professor.

PHPS 712 Medical Cell Biology (2) This course focuses on the scientific aspects of cell biology important to graduate students with primary focus on eukaryotic cell biology. The course will provide a basis to general cell biology principles in the context of organ systems and human and animal disease. Clinical cases will be used to build a framework for the basic concepts of medical cell biology and help reinforce conceptual understanding.

Pre: Approval of Major Professor.

PHPS 713 Organic Medicinal Chemistry I (2) Organic Medicinal Chemistry I provides the chemical and structural basis for the interdisciplinary field of therapeutics related to diuretics, autonomic nervous system and cardiovascular systems. The topics will include the drug discovery and development process of these important medicines, the chemical and structural basis for the pharmacological and therapeutic action drugs, structural classifications, molecular mechanism of actions, structure activity relationship and how the physicochemical properties of drug molecules affect their route of administration stability, and absorption, distribution, metabolism and excretion. Synthesis of important molecules from each drug class will also be presented.

Pre: Approval of Major Professor.

PHPS 714 Organic Medicinal Chemistry II (2) Organic Medicinal Chemistry II provides the chemical and structural basis for interdisciplinary field of therapeutics related to diabetes, thyroid/pituitary disorders, hormones/ osteoporosis/adrenal, asthma/COPD, and infectious diseases. The topics will include the drug discovery and development process of these important medicines, the chemical and structural basis for the pharmacological and therapeutic action of drugs, structural classifications, molecular mechanism of actions, structure activity relationship, and how physicochemical properties of drug molecules affect their route of administration, stability, and absorption, distribution, metabolism and excretion. Synthesis of important drug molecules from each drug class will also be presented.

Pre: PHPS 713.

PHPS 715 Organic Medicinal Chem III (2) Organic Medicinal Chemistry III provides the chemical and structural basis for interdisciplinary field of therapeutics related to antiviral agents, OA/RA/Gout, migraine, CNS agents including Parkinson/Alzheimer/Seizure. The topics will include the drug discovery development process of these important medicines, the chemical and structural basis for pharmacological and therapeutic action of drugs, structural classifications, molecular mechanisms of actions, structure activity relationship, and how the physicochemical properties of drug molecules affect their route of administration, stability, and absorption, distribution, metabolism and excretion. Synthesis of important drug molecules from each drug class will also be presented.

Pre: PHPS 714.

PHPS 716 Organic Medicinal Chemistry IV (2) Organic Medicinal Chemistry I provides the chemical and structural basis for the interdisciplinary field of therapeutics related to gastro-intestinal/genito-urinary, chemotherapy, pain management, radio-pharmaceuticals. The topics will include the drug discovery and development process of these important medicines, the chemical and structural basis for the pharmacological and therapeutic action of drugs, structural classifications, molecular mechanism of action structure activity relationship, and how the physicochemical properties of drug molecules affect their route of administration, stability, and absorption, distribution, metabolism and excretion. Synthesis of important drug molecules from each drug class will also be presented.

Pre: PHPS 715.

PHPS 717 Med Chem CNS Drugs & Develop (2) The course will focus on modern aspects of the design and development of compounds for the treatment of central nervous system disorders, and in addition on the development of PET (positron emission tomography) and SPECT (single photon emission computed tomography) tracers to monitor functional processes in vivo in the human body. Important properties and steps for profiling a drug to enhance the access to the brain will be discussed. The course will start with an overview about CNS targets and pharmacophore models for diverse compound families and will provide synthetic aspects of important drug templates. The production of relevant radionuclides, precursor and radiochemical synthesis, quality control and radiopharmaceutical aspects (in vitro, ex vivo, in vivo experiments) will be discussed.

Pre: Approval of Major Professor.

PHPS 718 Lab Visits & Supervisor Select (1) (lab) This one credit course is designed to enable all PhD candidates time to become familiar with the research being undertaken by possible dissertation supervisors. Each candidate will visit with and interview at least six possible dissertation supervisors and discuss with them dissertation research projects they will be offering. As required, individual candidates may want to spend a longer period in the laboratory of potential dissertation supervisors to actual gain some hands on experience as to what is going on in given laboratory to assist them in making their decision about whose group they would like to join. At the end of the interview process each candidate will submit a three page paper detailing the overall process they went through to eventually select a dissertation supervisor and dissertation topic.

Pre: admission into the PhD program in Pharmaceutical Science.

PHPS 719 Mol Biol Tech & Appl-Hlth Care (2) This course will provide students with basic and advanced information regarding DNA, RNA, and proteins, and describe current available techniques used in detecting genetic variation. Potential applications of these techniques to disease screening, drug resistance, and drug discovery and development will be reviewed. Isolation and purification of DNA samples from different cell types and tissues, DNA concentration techniques, restriction digestion and analysis, ligation of DNA to create recombinant molecules and designer genes will be discussed. Students will be provided with access to reference texts and selected on-line peer-reviewed articles in .pdf format by the instructor. The instructor will conduct lectures for sessions 1 and 15 and provide background materials. Each student will select a topic from the remaining sessions (2-14) and will lead the discussion for that selected topic on the assigned day. Students may work in pairs (or more if necessary), depending on student enrollment. Students will learn to retrieve information from a variety of sources, comprehend and critically evaluate it, and subsequently lead a discussion on the selected topic. There will be no laboratory component.

Pre: Approval of Major Professor.

PHPS 720 Nat Prod & Cancer Chemoprevent (2) The course will concentrate on the molecular aspects of chemoprevention as a viable strategy in the fight against cancer. The treatment of many diseases is dependent on natural products. Over half of the currently approved anti-cancer and anti-infective drugs are of natural origin. Active leads from different structural classes such as alkaloids, flavonoids, coumarins, and phenazines will be described. Since carcinogenesis is a multistage process, different approaches to monitor inhibition of cancer initiation, promotion and progression will be characterized. The course will provide the student with an understanding of detailed aspects of research processes leading to the discovery of promising natural as well as synthetic and semi-synthetic chemopreventive compounds. Special attention will be given to ensure students are aware that the science of chemoprevention research is well established and offers great research opportunities.

Pre: Approval of Major Professor.

PHPS 721 Neuropsychopharmacology (2) This course is designed as an intense, doctoral level class that amalgamates the disciplines of neuroscience, animal behavior, neurochemistry, and pharmacology. The course will cover the major topics of neuropharmacology such as cellular and molecular foundations of neuropsychopharmacology, behavioral pharmacology, receptor biology, major neurotransmitter systems and antidepressants, anxiolytics, antipsychotics, drugs of abuse, and cognitive and movement disorders. Further, this course will integrate some of the principle topics in behavioral neuroscience, including aggression, fear, stress, memory, internal state, and evolution of sex and mating systems, communication, feeding behavior, anti-predator behavior, and the evolution of behavior. Course format will consist of lectures and exams, student presentations, and require a capstone research review paper.
Pre: Approval of Major Professor.

PHPS 722 Pharmaceutical Marketing (2) This course has two major areas of emphasis in pharmaceutical marketing. The first part of the course will introduce the basic theory of pharmaceutical marketing and creative thinking behind product development. Students will learn the basic principles of consumer behavior and evaluation, environmental framework, social, and various other marketing theories to provide an understanding of how these concepts can influence product development in laboratories or drug industries. This section will also integrate these principles and concepts to understand issues related to the distribution and design of an innovative drug product development. The second part of the course is intended to use the principles and concepts learned in the first part to effectively develop a market plan for an innovative product.
Pre: Approval of Major Professor.

PHPS 723 Pharmacognosy (2) Pharmacognosy is a highly interdisciplinary field which is one of five major areas of pharmaceutical education. Its scope includes the study of the physical, chemical, biochemical and biological properties of drugs, drug substances, or potential drugs or drug substances of natural origin as well as the search for new drugs from natural sources. This course will focus on chemical aspects of Pharmacognosy. Natural products are normally classified according to their biosynthetic origins and chemical properties. Thus, the objective of the course is to familiarize students with an introduction to and classification of natural products (terpenoids, alkaloids, phenylpropanoids and allied phenolic compounds). The basic metabolic pathways and the origin of secondary metabolites such as the shikimic acid pathways, the acetatemonalate pathway, the mevalonate pathways will be discussed. It is a core course of Pharmacognosy and enable students to use this knowledge in the future to explore Advanced Pharmacognosy. A special emphasis will be placed on how chemical structure affects physiological function of various natural products.
Pre: Approval of Major Professor.

PHPS 724 Pharmacology I (3) In this 3 credit, 45 hour lecture course, students will learn pharmacology of specific drug groups. The course uses organ system approach. This course will begin with a discussion of diuretics followed by autonomic nervous system pharmacology and conclude with a discussion of drug groups used for the treatment of cardiovascular disorders. In the autonomic pharmacology unit, students will learn about adrenergic and cholinergic drugs that possess agonist and/or antagonist activities at different types and subtypes of receptors that are present in autonomic nervous system and other tissues in the body. Cardiovascular pharmacology will include drug groups that are used in the management of hypertension, hyperlipidemia, heart failure, disorders of coagulation, cardiac arrhythmias and ischemic heart disease.
Pre: Approval of Major Professor.

PHPS 725 Pharmacology II (3) In this 3 credit, 45 hour lecture course, students will learn pharmacology of specific drug groups. The course uses organ system approach. This course will begin with a discussion of endocrine disorders pharmacology followed by pharmacology of asthma and chronic obstructive pulmonary disease (COPD), and conclude with a discussion of drug groups used for the treatment of infectious diseases. In the endocrine pharmacology unit, students will learn about drug groups that are used in the treatment of diabetes, thyroid and pituitary disorders, osteoporosis, as well as corticosteroid drugs. Respiratory pharmacology unit will include pathophysiology and pharmacology of drug groups that are used in the treatment of asthma and COPD. Infectious disease pharmacology unit will include discussions of antibacterial, antifungal, antiviral, antiprotozoal and antihelminthic drugs.
Pre: Approval of Major Professor.

PHPS 726 Pharmacology III (3) This graduate-level course introduces the student to the basis of disease and pharmacology of drugs used to treat viral infections, osteoarthritis, rheumatoid arthritis, gout, and CNS disorders. Course material covers principles of drug action including drug-receptor interactions and mechanism of action, adverse effects, absorption, distribution, metabolism, elimination and pharmacogenomics. The focus of CNS lectures include therapeutics used to treat migraine, schizophrenia, depression, bipolar disorder, attention deficit hyperactivity disorder, sleep disorders, anesthesia, and neurodegenerative diseases. Students will be assigned a scientific article to read in advance of "Special Topics" lectures. For five of these assignments, the student will also be required to write a one-page summary of the article and its main findings.
Pre: PHPS 725.

PHPS 727 Pharmacology IV (3) This graduate-level course introduces the student to the basis of disease and pharmacology of drugs used to treat gastrointestinal and genitourinary disorders, fertility and contraception, as well as cancer and pain management. Course material covers principles of drug action including drug-receptor interactions and mechanism of action, adverse effects, absorption, distribution, metabolism, elimination and pharmacogenomics. Students will be assigned a scientific article to read in advance of "Special Topics" lectures. For five of these assignments, the student will also be required to write a one-page summary of the article and its main findings.
Pre: PHPS 726.

PHPS 728 Phytochem - Terrestrial Plants (2) This course will survey the chemical structures, spectroscopic properties, biosynthesis/biogenesis and biological activities of a wide range of major and minor chemical classes occurring in terrestrial plants. These compound classes will include alkaloids, terpenoids, steroids, coumarins, flavonoids, tannins and other polyphenols, pyrones, quinones, phenylpropanoids, lignans, depsides, depsidones, fats, waxes and lipids among others. Completion of this course will provide the student with a basic familiarity with the kinds of chemical structures found in plants enabling her/him to embark on a career in phytochemical research.
Pre: Approval of Major Professor.

PHPS 729 Receptor Theory & Signal Trans (2) This course is designed to provide the student with knowledge of the historical and practical aspects of receptor theory as it applies to drug action, and to introduce how drug actions are mediated through signal transduction cascades, based on specific examples. Lecture topics include: models for receptor-drug interactions; methods for receptor identification; structure-function analysis of GTP-binding proteins and ligand-operated ion channels; receptor tyrosine kinases; nuclear receptors; and receptor-induced signal transduction cascades. Laboratory component of the course is designed to complement lecture topics.
Pre: Approval of Major Professor.

PHPS 730 Sample Coll, Documnt & Presrv (1) Participants in this course will learn strategies for sample collection from both the terrestrial and marine environments and for both macro- and micro-organisms. The course will cover permit application, sample collection, and the various ways in which different sample types are preserved for long term storage and how taxonomic voucher specimens are prepared.
Pre: Approval of Major Professor.

PHPS 731 Toxicants and Toxicity (3) This course will provide a general foundation in the understanding of basic toxicological principles. The mechanisms of toxicity and contemporary treatment plans for the most common chemical, environmental and pharmaceutical agents will be presented. Additionally, this course will provide an in-depth review of the neuropharmacology of substances of abuse including stimulants, depressants, hallucinogens and anabolic steroids. Other types of addiction will be discussed. Special emphasis will be given to basic pharmacokinetic and pharmacodynamic mechanisms as they relate to the effects of the individual substances of abuse. Current theories of addiction and tolerance development will be discussed.
Pre: Approval of Major Professor.

PHPS 732 Tox Plant Nat Prod-Therap Pot (2) This course will draw on the basic principles of organic chemistry and biology to provide an understanding of the biosynthesis of toxic natural products in plants, their bioassay-directed fractionation and isolation, structural identification, and mode of action in mammalian systems. Toxins discussed will be those responsible for hepatotoxicity, teratogenicity, cardiotoxicity, lysosomal storage diseases, and reproductive defects. Students will integrate these principles to understand the importance of dose in discriminating between toxicity and therapeutic action, as well as the role of natural products as lead compounds in drug development. The major classes of toxic compounds occurring in plants will be discussed, with particular reference to those occurring in Hawaii. Discussions of proper experimental design, plant sampling and identification, and structural classification will carry over into the laboratory portion of the class. Students will become familiar with procedures for plant collection, extraction and isolation of pure compounds, and structural identification.
Pre: Approval of Major Professor.

PHPS 750 Overview of Pharm Sciences (3) This 3 credit, 45 lecture and written research assignment course will draw on the basic principles of chemistry, biology and physics to provide an introduction to the basics of the Pharmaceutical Sciences. Some of, but not all, the areas covered include: an overview of the subject as a whole, basic organic functional group chemistry, an introduction to Pharmacognosy, and introduction to Medicinal Chemistry, Combinatorial Chemistry and high throughput technologies in modern drug discovery, architecture of drugs, metabolic changes that occur to drugs, introduction to general Pharmacology, transport of drugs across the biological membranes, introduction to Pharmacodynamics and Pharmacogenomics, general mechanisms of drug action, and variations in drug action.
Pre: Enrollment in the College of Pharmacy PhD program.

PHPS 751 Biochemistry I - Biomolecules (4) This course is designed to provide a basic foundation for the understanding of medicinal biochemistry, pharmacology, and the structure and function of various biomolecules. Topics will include physical and chemical properties of amino acids, structural and physical properties of proteins, nucleic acids (DNA and RNA), lipids, and their relationship to their biological function, fundamentals of signal transduction, DNA replication, mutation, and repair, nucleotide biosynthesis, protein synthesis, and transcription. These principles will provide the basic concepts for understanding the biochemical basis for disease states and drug action.

Pre: Enrollment in the College of Pharmacy Pharmaceutical Sciences PhD program.

PHPS 752 Biochemistry II - Metabolism (4) Biochemistry II - Metabolism will delve into metabolism and the interrelationships/integration of metabolic processes. The biochemistry of metabolism focuses on glycolysis, the tricarboxylic acid cycle, gluconeogenesis, and the synthesis and breakdown of biomolecules (carbohydrates, lipids, and amino acids). Metabolic control and regulation of pathways will be emphasized. This includes a discussion of mechanisms and control of signal transduction pathways, and recurring motifs in metabolism. Clinical correlates and metabolic diseases will be examined, with a substantial emphasis on metabolic syndrome. A sampling of biochemical techniques will also be described.

Pre: Enrollment in the College of Pharmacy Pharmaceutical Sciences PhD Program.

PHPS 755 Advanced Pharmaceutics I (3) This course will draw on the basic principles of chemistry, biology and physics to provide an understanding of how drug physico-chemical properties at the molecular and macroscopic assembly level are manifest in dosage form properties and performance. Students will integrate these principles to understand issues in the rational selection of dosage forms and drug delivery systems as well as their role in drug product development. Discussions of Good Manufacturing Practices and Good Compounding Practices will carry over into the lab portion of the class. Students will become comfortable with equipment; procedures and records used in the compounding of various dosage forms, and will practice clinical dispensing skills vital to shaping a truly professional pharmacist.

Pre: Approval of Major Professor.

PHPS 756 Advanced Pharmaceutics II (3) This course will draw on the basic principles and developmental aspects of drug formulation to deliver the active pharmaceutical ingredient through biological membranes to exert the therapeutic effect at site of action. Understanding of physicochemical properties of active pharmaceutical ingredient and additives or excipients, pharmacological properties and processability of drug delivery systems can be utilized for optimal performance of the drug delivery systems. Understanding of active pharmaceutical ingredient and additive or excipients physico-chemical properties at the molecular and macroscopic assembly level are manifest in dosage form properties and performance. Students will integrate these principles to understand issues in the rational choice of dosage forms and drug delivery systems as well as their role in drug product development. Discussions of Good Manufacturing Practices and Good Compounding Practices will carry over into the lab portion of the class. Students will become familiar with procedures and records used in the compounding of various dosage forms, and will practice clinical dispensing skills vital to shaping a truly professional pharmacy professional scientist.

Pre: Enrollment in the College of Pharmacy Pharmaceutical Sciences PhD program.

PHPS 800 Resrch Dissertation-Phrm Sci (1-15) This course outlines the conduct of the dissertation project and preparation of the actual dissertation document for the Doctoral level student. The dissertation is a major undertaking that is a demonstration of mastery of a field of research in the Pharmaceutical Sciences and should represent an original and significant contribution to the field. The dissertation document will usually be no less than 150 pages in length and be based on a research project defined by the candidate's Primary Advisor. The project may take a variety of forms, for example, be quantitative, qualitative, or theoretical, the main criteria being that at the completion of the research the candidate can demonstrate mastery of and excellence in their chosen area of research.

Pre: Successful completion of the first, qualifying year of the PhD program progressing to Candidacy, and selection of a Primary Advisor, a Dissertation research topic and a Dissertation Committee.

PHPS x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

PHPS x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required. *Pre:* instructor's consent.

Tropical Conservation and Environmental Science (CBES)

College of Arts and Sciences

CBES 500 Master's Plan Studies (1) Used for continuous enrollment purposes. Must be taken as CR/NC. Does not count toward fulfillment of degree requirements.

Pre: Master's or Doctoral candidacy and instructor's consent.

CBES 600 Conservatn Biol & Environ Sci (3) Fundamental principles of ecology, evolution, and environmental sciences, with an emphasis on the conservation, management and restoration of organisms and ecosystems. Discussion will include the physical and biological factors that affect and shape tropical organisms and ecosystems: biodiversity, biogeography, climate, genetics, nutrient cycling, population viability, reproductive systems and topography. Tropical organisms and ecosystems world-wide will be compared with an emphasis on Hawaii.

CBES 601 CBES Field & Laboratory Method (3) A practical course in laboratory and field methods and techniques in conservation biology and environmental sciences. Students will be introduced to methods used for studying, monitoring and experimenting upon animals and plants in a diversity of habitats. Emphasis is placed on the choice of techniques for data collection, followed by rigorous analysis of results with the application of appropriate statistical analyses. Students will also become familiar with the biological and environmental diversity of the Island of Hawaii. The information collected will be more fully analyzed in CBES 605.

CBES 602 Research Seminar in TCBES (1) A research seminar in tropical conservation biology and environmental science. Presentations will focus on research related to conservation biology and environmental science. Following the seminar there will be a question and answer discussion session with the seminar speaker and students. Students will also give a short presentation of their research or internship projects. These seminars will be critiqued by the instructor and the students for both the content of the project and presentation style.

CBES 603 Natural Resource Mgt Seminar (1) Seminars given by TCBES faculty, visiting scientists from other universities, federal, state and non-profit agency personnel working in fields related to TCBES. The seminars will be focused on natural resource management issues. Following the seminar there will be an open question and answer discussion session with the seminar speaker and the students. Student will also give short presentations of their research or internship projects. These seminars will be critiqued by the instructor and the students for both the content of the project and presentation style.

CBES 609 Theory/Apps Landscape Ecology (3) This course explores the theory and application of landscape ecology as a framework for landscape research, analysis and management. Students will become well-versed in concepts, methods and applications of landscape ecology through reading classic and contemporary literature and performing independent research. Topics will include: characterizing landscape patterns and dynamics, application of landscape management, and emerging areas of research.

CBES 610 Environmental Chem Analysis (3) Basic concepts of chemical measurements in environmental media. Analysis in environmental matrices with emphasis on water, soil, air and tissue. Topics include basics of calibration and measurement, sample collection, sample lability, chemical interferences, matrix effects and reporting analyses of chemicals in the environment.

Pre: CHEM 124, 124D, 124L, 125, 125D, 125L, 241, 330, 330L. Recommended: CHEM 331.

CBES 615 Global Environmental Change (3) Discusses the natural and anthropogenic processes regulating the function of the Earth system. The history and mechanisms of global change processes and the means by which human activities alter Earth system function at local to global scales will be examined, along with potential consequences of and solutions to global change. Focuses on interrelationships of the atmosphere, hydrosphere, geosphere and biosphere. Provides students with an understanding of the role that multidisciplinary science and technology have on research of the Earth system.

CBES 620 Rrsch Techniq Molecular C Biol (3) (lab) Major advances in molecular biology important to conservation studies are examined. Molecular techniques that are applied to conservation studies are performed, including PCR, RFLP, AFLP, DNA sequencing, and microsatellite analysis. Data analysis is examined, including a number of popular genetics software packages that enable pairwise comparisons of large data sets and the construction of genetic distance matrices and networks.

Pre: BIOL 357L and 481L or equivalent, or instructor's consent.

CBES 630 Nearshore Monitoring & Analsi (3) (lec., lab) Theoretical and practical planning and implementation of data collection and analysis of the intertidal and shallow subtidal marine environments. Techniques include measuring geological, chemical, and physical environments and estimating the abundance and diversity of organisms.

Pre: MARE 350 & 350L, CBES 610; or instructor's consent.

CBES 633 Biodiversity (3) This lecture and discussion course will examine the primary theories and evidence for the origin and maintenance of species richness in hyper-diverse communities, using tropical rainforests and/or coral reefs as model systems. Topics will include historical biogeography, speciation, coevolution, neutral vs. non-neutral models for the maintenance of species richness, and biodiversity conservation. Methodological approaches will also be discussed.

CBES 635 Physical Environment of Ecosys (3) Examination of the influences of climate, hydrology, geology and soils on terrestrial and aquatic ecosystems. Emphasis on mechanisms of change, anthropogenic impacts and monitoring networks.

Pre: GEOL 100 or 111 or GEOG 101; BIOL 281 or GEOG 309 or equivalent; or instructor's consent.

CBES 640 Adv Remote Sensing/Digital Ima (3) (lec., lab) Digital image processing of satellite-derived remotely sensed data for earth resource analysis and applications. Specific applications include image enhancement, classification, post classification analysis, special transformations, and multi-temporal analysis for land cover change detection.

Pre: GEOG 470 or equivalent; or instructor's consent.

CBES 650 Oceanographic Monitoring & Ana (3) (lec., lab) Theoretical and practical planning and implementation of data collection and analysis of neritic and pelagic marine environment from an oceanographic vessel platform. Techniques include measuring geological, chemical and physical nearshore properties; estimating the abundance and diversity of plankton, nekton, and benthos; and use of modern data recording and analyzing systems.

Pre: MARE 350, 350L, and CBES 610 or instructor's consent.

CBES 655 Ecological Physiology (3) Physiological adaptations to environmental variation including physiological and biochemical mechanisms for food acquisition and digestion, thermal energetics, respiratory gas exchange, activity metabolism and osmoregulation.

CBES 657 Vegetation of the Hawaiian Isl (3) Develops a methodology for understanding processes shaping major types of vegetation in Hawai'i. Intensive plant taxonomy and identification, field methods in surveying and monitoring vegetation, and application of these to overall research design.

CBES 660 Molecular Ecology (3) This lecture and discussion course will examine the molecular genetic applications in current ecological research. Topics will include the fundamentals of molecular biology as they pertain to ecological systems. Theoretical background of modern molecular genetic techniques will also be discussed. The format of the course will include student-led seminar discussions of recent primary literature in molecular ecology. Some genetics background necessary.

CBES 665 Environmental Toxicology (3) Biochemical basis for toxicity. Chemical distribution and fate in the body; molecular mechanisms and effects of toxic action. Emphasis on environmental toxicants.

Pre: Upper division courses in biochemistry and physiology, or instructor's consent.

CBES 670 Geog Info Sys & Visualization (3) Key principles and concepts of Geographic Information Systems (GIS) that includes: a theoretical foundation, software training, real-world applications and techniques in visualization of spatial information relevant to conservation biology and environmental science research. This course is dual listed with GEOG 480.

CBES 675 Conservation Genetics (3) Basic concepts of population genetics and molecular evolution as it applies to conservation biology. Specific topics include population dynamics and inbreeding depression, and population genetic structure related to ecological parameters and requirements of an organism.

CBES 677 Quantitative Ecology (3) This course will consist of weekly lectures and computer-based in-class exercises. It will explore multiple regression, General Linear Models including Logistic and Poisson regression, Mixed effects models, and various other analysis of variance approaches, including repeated measures designs. Diagnostics and model selection procedures such as Akaike's Information Criteria (AIC) will be strongly emphasized. By the end of the course, students should have a good general understanding of the ways to design, analyze, and model many types of biological datasets.

CBES 680 Adv Stats Analysis & Rsrch Des (3) An advanced examination of statistics and research design in conservation biology and environmental science. Emphasis on specific applications and underlying assumptions, design of experiments, and observational schemes for research project. Extensive computer analysis is employed, including MINITAB and SAS statistical software.

Pre: CBES 610 or instructor's consent.

CBES 681 Spatial Data Analysis/Modeling (3) CBES 681 is an advanced course in spatial analysis and modeling specific to Geospatial Information Science. This course will emphasize the correct application of Geospatial software tools along with the underlying theories and opportunities for applied learning in terrain modeling, suitability modeling, predictive ecosystems mapping and data visualization. Further knowledge and skills will be developed by customization of GIS applications through interface design and automation of geospatial analysis procedures. This course is dual listed with GEOG 481.

CBES 685 Behavioral Ecol & Evol Analyse (3) Principles of behavioral ecology and evolution with a focus on conservation biology. Research techniques in behavioral ecology related to analyzing populations in geographically and age-structured populations. The importance of reproductive strategies, habitat selection, foraging behavior, parental care, social organizations, and the importance of migration and movement patterns on the regulation of population sizes and evolution. Population, quantitative and species genetics as it relates to evolution, speciation, and biodiversity.

Pre: CBES 610 or instructor's consent.

CBES 690 Internship (3) Internship for Plan B Masters students in TCBS with a federal, state or non-government agency with projects in Hawai'i or other Pacific Islands. Internship project will be developed and carried out in consultation with the host agency and the approval of the TCBS graduate committee. Development of the internship is formalized through a written proposal, periodic written reports and meetings with the graduate advisor and host agency representative. Final report and oral presentation are required at the end of the internship.

CBES 700 Thesis Research (1-6) Research in conservation biology and environmental sciences for Plan A Master's students.

CBES x94 Special Topics in Subject Matter (Arr.) (IO) Special topics chosen by the instructor. Course content will vary. May be repeated for credit, provided that a different topic is studied. Additional requirements may apply depending on subject and topic.

CBES x99 Directed Studies (Arr.) (IO) Statement of planned reading or research required.
Pre: instructor's consent.

Index

Index

A

Academic Calendar 4
 Academic complaints 20, 154
 Academic Computing Services 5
 Academic dishonesty 20, 154
 Academic expectations and responsibilities 15
 Academic regulations 15
 exceptions 19
 Accounting, BBA major in 84
 Accounting courses 95
 Accreditation 22
 Administration 5
 Administration of Justice, BA 41
 Administration of Justice courses 98
 Admissions 6
 auditors 8
 early admissions 8
 first-time freshmen 7
 graduate 145
 international students 8
 readmission 19
 residency regulations 6
 returnees 8
 transfer students 7
 unclassified, non-degree students 8
 undergraduate requirements 6
 Admitted students, info for 9
 Advising, academic 15
 Agribusiness courses 96
 Agricultural 96
 Agricultural Engineering courses 97
 Agriculture 97
 Agriculture courses 96
 Agriculture Development Program 9
 Agronomy courses 97
 Americorps 14
 Animal 33
 Animal Science, BS 33
 Animal Science courses 98
 Anthropology, BA 42
 Global Engagement Certificate 43
 Anthropology courses 98
 Aquaculture, BS 34
 Aquaculture courses 99
 Art, BA 44
 Art courses 100
 Assessment, university 20
 Astronomy, BS 45
 Astronomy courses 101

Auditors 8

B

Baccalaureate 25
 Bachelor's degrees
 list of 3
 requirements 25
 B.A. in Administration of Justice 41
 BA in Anthropology 42
 BA in Japanese Studies 63
 Bankruptcy, academic 19
 Beekeeping Certificate 38
 Biology, BA 46
 Cell and Molecular Track 47
 Ecology, Evolution and Conservation Track 48
 Biology, BS 49
 Biology courses 101
 Board of Regents and Administration 5
 Business Administration 83
 Business Administration Certificate 85
 Pre-Business Program 83
 Professional Business Program 83
 Business courses 104

C

Campus and Community Service 5
 Campus Recreation 5
 Career Development Services 5
 Certificates, list of 3
 Chemistry, BA 49
 Chemistry courses 104
 China-U.S. Relations (CHUS) 170
 Chinese 64
 Chinese courses 105
 Chinese Studies Certificate—
See Languages
 Civil Engineering courses 105
 Classification of students 16
 Clery Act 22
 Clery Act Statement 22
 Clinical Psychopharmacology, M.S. 166
 College of Agriculture, Forestry, & Natural Resource Management (CAFNRM) 31
 College of Arts & Sciences 40
 College of Business & Economics (CoBE) 83
 College of Continuing Education & Community Service
 tuition 11
 College of Continuing Education &

Community Service (CCECS) 93
 College of Hawaiian Language
 Contemporary Indigenous Multilingua Certificate 92
 graduate programs 158
 Hawaiian Culture Certificate 90
 Hawaiian Language Certificate 90
 undergraduate programs 88
 College of Pharmacy (COP)
 undergraduate program 87
 Communication 51
 Communication courses 105
 Computer Application Development Specialization Certificate 53
 Computer Science, BS 52
 Computer Science courses 106
 Conduct and Removal of Financial Support 154
 Conduct Violations Other than Academic Dishonesty 154
 Conference Center 94
 Contact information, services & resources 5
 Contemporary Indigenous Multilingua Certificate 92
 Counseling Services 5
 Courses
 graduate 170
 numbering system 17
 repeating 19
 undergraduate 95
 Credits 17

D

Dance courses 108
 Dance, Performing Arts BA 74
 Database Management Certificate 53
 Degrees & certificates 3
 Directed reading & studies 19
 Directory of services & resources 5
 Disabilities, students with
 grants 13
 notice to 22
 Disability Services 5
 Disclaimer, catalog 1
 Dismissal 19
 Distance Learning 5
 Doctoral degrees
 list of 3
 requirements 151
 Drama courses 108
 Drama, Performing Arts BA 75

E

E 53
 E-Commerce Technology & Business Certificate 53
 Economics, BA 86
 Economics courses 109
 Education 171
 Educational Rights & Privacy Act 23
 Educational Studies Certificate 54
 Education courses 110
 Education (ED) 171
 Education Program
 Education, MEd 156
 Teaching, MAT 157
 Education, School of 53
 Electrical Engineering courses 111
 Engineering 111
 Engineering Program 55
 English as a Second Language courses 114
 English as Second Language
 Teaching Certificate (TESOL) 56
 English, BA 55
 English courses 111
 English Proficiency Test 9
 Entomology 114
 Environmental 114
 Environmental Studies Certificate 58
 Environmental Studies/Science, BA/BS 56
 Environmental Studies/Science courses 114
 Examinations 17
 Exchange Programs 5

F

Faculty Lists 5
 Fees
 graduate 147
 undergraduate 10
 Filipino 64
 Filipino courses 115
 Filipino Studies Certificate—
See Languages
 Finance courses 115
 Financial Aid 12
 Federal Aid 14
 Opportunity Grants for Students of Hawaiian Ancestry 13
 Pacific Islander Scholarship 13
 Scholarships 14
 UH Hilo Opportunity and Achievement Grants 13
 Financial obligations 11
 Fitness for Life 94

Food Science and Technology courses 115
 Forest Resource Management and Conservation Certificate 38
 Forestry courses 116
 French courses 116

G

General Education Core: Area Requirements 26
 General Education Core: Basic Requirements 25
 General Education Requirements 25
 Geography, BA 58
 Geography courses 116
 Geology, BA 60
 Geology courses 117
 Global and Community Citizenship Requirement 29
 Global Engagement Certificate 43
 Grades 17
 Graduate courses 170
 Graduate programs admissions 145
 general information 145
 registration & degree requirements 147
 tuition & fees 147
 Graduate student rights and responsibilities 154
 Graduation requirements 20
 Grants 13

H

Hawaiian Culture Certificate 90
 Hawaiian Language Certificate 90
 Hawaiian Language courses 118
 Hawaiian Language (HAW) 173
 Hawaiian Language & Literature, MA 160
 Hawaiian Programs grants for Hawaiian Students 13
 Hawaiian Studies, BA 88
 Hawaiian Studies courses 121
 Hawaiian Studies (HWST) 173
 Hawai'i Pan-Pacific Requirement 29
 Health 50
 History, BA 61
 History courses 119
 Honors 20
 Honors courses 121
 Horticulture courses 121

I

Institutional Information and Policies 22
 Integrative Requirements 25
 Global and Community

Citizenship Requirement 29
 Hawai'i Pan-Pacific Requirement 29
 Interdisciplinary Studies courses 122
 International students admissions 8
 International Students achievement grants 13
 International Student Service 5
 International Studies Certificate 79
 Tourism Concentration 85

J

Japanese courses 122
 Japanese Studies, BA—
See Languages
 Japanese Studies courses 123

K

Ka Haka 'Ula O Ke'eliko'ani College of Hawaiian Language—
See College of Hawaiian Language
 Kahuawaiola Indigenous Teacher Ed Program 158
 Ke'elikelani Anthropology courses 124
 Ke'elikelani Education courses 124
 Ke'eliko'ani Education (KED) 173
 Ke'elikelani Hawaiian Language courses 125
 Ke'eliko'ani Indigenous Language (KLAN) 174
 Ke'elikelani Indigenous Studies courses 126
 Ke'eliko'ani Indigenous Studies (KIND) 174
 Ke'eliko'ani Linguistics (KLIN) 174
 Kilohana Academic Support Services 5
 Kinesiology & Exercise Science, BA 62
 Kinesiology & Exercise Science courses 126
 Kipuka Native Hawaiian Student Center 5

L

Languages 63
 Chinese Studies Certificate 50
 Japanese Studies, BA 62
 Languages courses 127
 Latin courses 127
 Liberal Studies 65
 Library, Edwin H. Mookini 5
 Licensure programs, list of 3
 Linguistics, BA 91
 Linguistics courses 128

M

Management courses 128
 Marine 68
 Marine Option Program Certificate 68
 Marine Science, BA 65
 Marine Science, BS 67
 Marine Science courses 129
 Marketing courses 131
 Master's degrees list of 3
 requirements 149
 Mathematics, BA 68
 Mathematics courses 131
 Math placement exam 9
 Medical clearance 9
 Medical Services 5
 Military Science courses 133
 Minority Access and Achievement Program 5
 Multidisciplinary Hawaiian Studies Certificate 91
 Music courses 133
 Music, Perform Arts BA 75

N

Native Hawaiian Serving Institutions Program 5
 Natural Resources courses 134
 Natural Science, BA 70
 New Student Programs 5
 Nondiscrimination Policy 22
 North Hawai'i Education & Research Ctr (NHERC) 93
 Nursing Nursing Practice, DNP 162
 Nursing, RN & BSN 71
 Nursing courses 135
 Nursing (NURS) 174

O

Opportunity Grants for Students of Hawaiian Ancestry 13
 Orientation, New Student 9

P

Pacific Internship Programs for Exploring Science 5
 Pacific Islander Scholarship 13
 Pacific Island Studies Certificate 74
 Performing 76
 Performing Arts, BA 74
 Performing Arts Certificate 76
 Pharmaceutical Science (PHPS) 177
 Pharmacy Doctor of Pharmacy, PharmD 163
 Pharmacy Studies, BA 87
 Pre-Pharmacy Program 80

Pharmacy Practice (PHPP) 175
 Philosophy, BA 77
 Philosophy courses 136
 Physics, BA 78
 Physics courses 137
 Placement exams math 9
 writing 9
 Planning Certificate 59
 Plant Pathology courses 138
 Plant Physiology courses 138
 Plant Tissue Culture Certificate 39
 Political Science, BA 79
 Political Science courses 138
 Pre-Business Program 83
 Pre-Pharmacy Program 80
 Probation, academic 19
 Professional Business Program 83
 Profile, admitted students 9
 Psychology Psychology, BA 80
 Psychology courses 139
 Psychology (PSY) 170

Q

Quantitative Business Analysis courses 141

R

Refund policy 11
 Registrar 5
 Registration graduate 147
 undergraduate 15
 Residency regulations 6
 Returnees, admission of 8
 Running Start/Early Admission Program 8

S

Scholarships 14
 Scholarships & Grants 13–14
 Pacific Islander Scholarship 13
 Sociology, BA 81
 Sociology courses 141
 Soil Science courses 142
 Spanish courses 142
 STEM Honors Certificate 69
 Student Affairs 5
 Student Conduct Code 23
 Student Organizations 5
 Student Support Services Program 5
 Study Abroad 5
 Summer Session admission 9
 tuition & fees 10

T

Teaching English as a Second
Language (TESOL) Certificate 56
Teaching, MAT 157
Tourism, Certificate in International
Studies & 85
Tourism courses 143
Transfer students 7
Travel Study Programs 93
Tropical Conservation and
Environmental Science (CBES) 182
Tropical Farming Certificate 39
Tropical Horticulture, BS 36
Tropical Plant Science &
Agroecology, BS 37
Tuition & fees
 deposit 9
 financial obligations 11
 graduate 147
 payments 11
 refund policy 11
 undergraduate 10

U

UH Hilo Opportunity and
Achievement Grants 13
Unclassified, non-degree students
 admission 8
University courses 143
Upper-Division Requirement 30
Upward Bound 5

V

Veterans, federal aid
 14

W

Withdrawals 15
 financial aid 13
Women's Center 5
Women's Health Clinic 5
Women's Studies Certificate 82
Women's Studies courses 143
Writing 29
Writing placement exam 9