

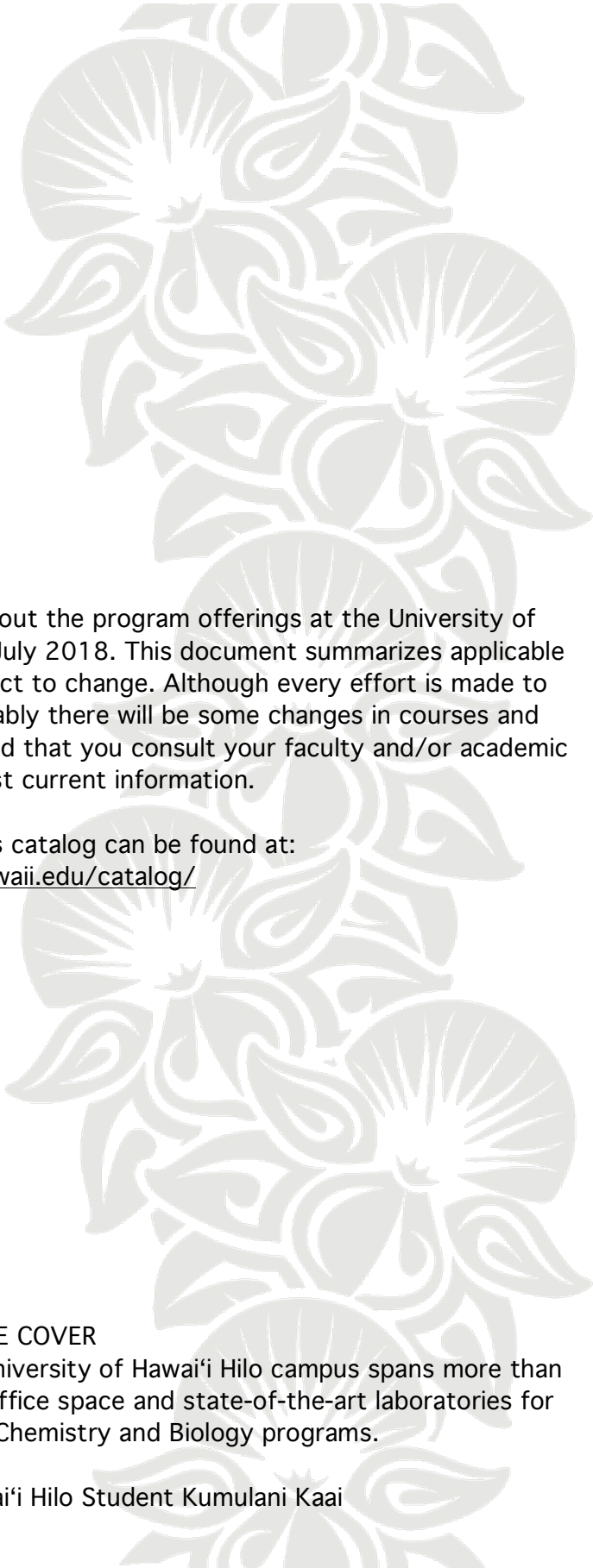
GRADUATE CATALOG

UNIVERSITY
of HAWAI'I®

HILO



CATALOG 2017-2018



This catalog contains general information about the program offerings at the University of Hawai'i Hilo for the period of August 2017 to July 2018. This document summarizes applicable policies and programs of UH Hilo, and is subject to change. Although every effort is made to keep this catalog correct and current, inevitably there will be some changes in courses and program requirements. It is highly recommended that you consult your faculty and/or academic advisors for the most current information.

An online version of this catalog can be found at:
<https://hilo.hawaii.edu/catalog/>

ON THE COVER

The Science and Technology building on the University of Hawai'i Hilo campus spans more than 42,000 square feet and houses classrooms, office space and state-of-the-art laboratories for UH Hilo's Physics, Astronomy, Chemistry and Biology programs.

Photo by University of Hawai'i Hilo Student Kumulani Kaai



About UH Hilo: Chancellors Message

The University of Hawai'i at Hilo is a growing university of 4,000 students that offers a wide range of liberal arts and professional programs, as well as a number of graduate and doctoral programs. We are looking to the future and preparing our students to make lifelong contributions to their communities and help build a prosperous future.

UH Hilo offers an exceptional campus and island setting in which to live and study. The university community enjoys a rich diverse student population, with a unique blend of local, mainland and international students, all living and learning together in a harmonious and safe environment. The surrounding island community, rooted in an agriculture history, is one of the most ethnically diverse in the country.

The island landscape, too, is extraordinarily diverse, with snow-capped mountains, windy deserts, lush rainforests, endangered coral reefs, protective estuaries, active volcanoes and more. Most importantly, we live in the home of our indigenous host culture, and everything we do supports the infusion of Hawaiian values of cultural knowledge and language.

The unique diversity in culture and geography makes Hawai'i Island the perfect "living laboratory" in which to teach, learn and do research:

- Our nursing, teaching and computer science, pharmaceutical sciences and other key programs are strong and growing.
- Our interdisciplinary STEM programs—astronomy, math, chemistry, biology, marine science and more—make our graduates much more flexible in taking advantage of limited opportunities.
- Our humanities disciplines are in sync with our local community's need for professionals in culture and the arts, language and communications.
- Our agricultural programs are addressing the pressing need for our state to move toward sustainable food systems.
- Our business and economics program offers one of only two AACSB-accredited business administration degree programs in the state of Hawai'i.

Further, our students get a big boost with applied learning experiences in internships, collaborative research with their professors, and community outreach. These are the kinds of practical experiences that make our graduates a cut above in a tight job market. When our students graduate, they have a diploma and a resume.

On behalf of the UH Hilo *'ohana* (family), I'm very pleased to welcome you to the UH Hilo campus community and wish you every success in your educational endeavors.

Marcia Sakai
Interim Chancellor



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Graduate Education General Information

UH Hilo Graduate Division College of Business and Economics
Building, Room 206
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Email: hilograd@hawaii.edu
Website: hilo.hawaii.edu/academics/graduate/

UH Hilo currently 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](#)
- [Registration and Degree Requirements](#)
- [Requirements for Candidates for Masters Degrees](#)
- [Requirements for Candidates for Doctoral Degrees](#)
- [Graduate Student Rights and Responsibilities](#)

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 (except for the app and fee) directly to the Graduate Division:

1. A completed application form and appropriate fee. The application form and fee information are available online from the Admissions Office.
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 three 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 consideration of 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), 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 [International Transcript Information](#) for more info.

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.**



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."

Provisional Admission

An applicant whose GPA in the last 60 credits (or equivalent) falls between 2.75 and 2.99 may be admitted under provisional status. To be accepted, the applicant must have program approval and otherwise meet program requirements. Some conditions may apply; the student will be notified at the time of acceptance of any conditions in place.

Denied Admission

Students whose academic records do not meet the minimum requirements, whose applications are incomplete, 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 Graduate Division](#) 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 Graduate Division. The form must be signed by the student, the primary advisor (if applicable), and the program chair.

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 and the graduate program chair 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 with Senior standing and with a GPA of at least 2.5, 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. Completion of graduate coursework does not guarantee future admission to a UH Hilo graduate program. Submit the completed form [Permission to Enroll in Graduate Coursework as an Undergraduate Student](#) to the Graduate Division.



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 Graduate Division 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 Graduate Division in consultation with the International Admissions Officer. Visa questions will be handled by this office.

Graduate Admission Procedures

The Graduate Division is responsible for accepting application materials for all graduate programs not administered by the College of Pharmacy. The Graduate Division screens each application for minimum qualifications and distributes 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.

For programs with summer or fall semester initial enrollment, the priority application deadline for receipt of all application documents varies by program, and ranges between December 1 and January 1. Applications that are complete as of the program's specific priority deadline receive priority consideration for acceptance. 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 Graduate Division 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. Specific priority deadlines are posted under the program's Checklist and on the [Graduate Program home page](#).

Official notification of acceptance or rejection generally is mailed by the Graduate Division between January 1 and May 30 for summer and 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 Graduate Division.

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.

Graduate Tuition and Fees

Tuition for the 2017-2018 Academic Year

Graduate students other than Pharmacy and Nursing

Classification	Per Credit Hour	Full Time
Resident	\$ 479	\$ 5,748/semester
Non-resident	\$ 1,097	\$ 13,164/semester

Pharmacy Doctoral Students

Classification	Per Credit Hour	Full Time
Resident	\$ 984	\$ 11,808/semester
Non-resident	\$ 1,690	\$ 20,280/semester

Graduate Nursing Students

Classification	Per Credit Hour	Full Time
Resident	\$ 781	\$ 9,372/semester
Non-resident	\$ 1,558	\$ 18,696/semester

Tuition for Summer 2018

To be announced in the spring semester following each summer session.

Fees for the 2017-2018 Academic Year (Per Semester)

Fee	1+ credits
Student Publications	\$ 28.50
Student Activities	28.50
Student Association	28.50
Campus Center	29.50
Media Broadcasting	24.00
Student Health	7.00



	Fee	1+ credits
Student Life Center		78.00
Total:		\$ 224.00

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 item(s) broken or lost

Registration and Degree Requirements

Registration

Entering graduate students register during the official registration period posted in the [registration timetable](#) for the relevant semester. Students may also register just prior to the start of fall classes, or in the case of programs that begin in the spring, or summer just prior to the beginning of the 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 or in the case where courses are evaluated as either credit/no credit, where credit is given. 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; 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 Graduate Division.

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 Council Chair as indicated on the [Student Overload Approval Form](#). After obtaining the approval of the graduate program chair's signature the form must be submitted to the Graduate Division for the Graduate Council Chair's signature; the form is then submitted to the Office of the Registrar. The Overload Form must be approved before the end of the add deadline, and will be retained in the student's file in the Graduate Division.

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. Incomplete grades should not be given to allow students to extra credit work to raise their grades. The student must request the Incomplete option from the instructor, but it is the instructor's decision whether or not to approve the request. 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 then the instructor who assigned the "I" can change it to the appropriate grade using the Change of Grade form, taking the completed work into consideration. In exceptional circumstances, the division chairperson or the dean can change an "I" grade using the Change of Grade form.

If the coursework is not completed by the deadline, the "I" grade for graduate students will become an "NC" or "No Credit". 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 time limit for Incomplete removal prevails whether or not the student maintains continuous enrollment. Some departments and programs may have more restrictive policies regarding incomplete grades.

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..

Updated 12/2017

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 primary advisor and 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 Graduate Division where the final signature will be obtained.

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 submit a [Returning Student Application](#) to the Graduate Division 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 full time 6 credits in Fall and Spring; 3 credits in Summer (if the student chooses to attend classes during the summer). 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 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 on 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 Masters 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) used to mark the student's progress through the graduate program; they are available online through the Office of the Registrar's website. 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.

All graduate level forms are submitted to the Graduate Division, with signatures as noted. The Graduate Division obtains final signature(s) and submits forms to the Office of the Registrar.

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 3: Thesis/Project/Dissertation Completion](#) to the Graduate Division by the required deadline. If submitting a thesis, this form should be submitted to the library for acknowledgement of submission of the thesis.

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 3: Thesis/Project/Dissertation Completion](#) 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 Office of the Registrar 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 Graduate Division.

- **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 Cashier's 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.
- **Student:** Obtains signatures of committee members, library, and Graduate Program Chair [Form 3: Thesis/Project/Dissertation Completion](#) and submits to the Graduate Division. The Graduate Division will obtain the final two signatures and submit the completed form 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 Graduate Division.
- **Student:** Submits [Form 2: Thesis/Dissertation Proposal](#) to the Graduate Division 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 Cashier's Office by the required deadline.
- **Student:** Defends and completes thesis.
- **Student:** Submits dissertation on [ETD Administrator](#).
- **Student:** Obtains signatures of committee members, initials of the Collection Development Librarian (or designee), and Graduate Program Chair on [Form 3: Thesis/Project/Dissertation Completion](#) then submits form to the Graduate Division for signature. The Graduate Division will obtain the final 2 signatures and submit the completed form to the Office of the Registrar by the required deadline in the [University calendar](#).

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.
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, approved 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. The nominee's academic credentials, including a vita, should be included if the nominee is not a UH Hilo faculty member.
 2. If the Graduate Council affirms the selection, the name will be sent forward to the VCAA for final approval.



- 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.

If at the final examination the examiners generally approve of the dissertation but require significant changes 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 3: Thesis/Project/Dissertation and Degree Requirements Completion](#), indicating that the student has now fulfilled all dissertation 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; 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.

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 Hawaii 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 [Edwin H. Mookini Library](#) or call (808) 932-7286 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 Office of the Registrar certifying that all requirements for the degree have been completed.



Checklist for Completion of Degree Requirements of Doctoral Degree

- **Graduate program:** Assigns principal academic advisor and graduate committee. Submits [Form 1: Graduate Committee Formation](#).
- **Student:** Submits [Form 2: Thesis/Dissertation Proposal](#) to the Graduate Division 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 the semester in which all degree requirements will be completed.
- **Student:** Completes dissertation.
- **Graduate program:** Nominates outside member by memo via the Graduate Council to the VCAA or designee.
- **VCAA or designee:** Appoints outside committee member and so notifies the graduate program.
- **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:** Submits dissertation on [ETD Administrator](#).
- **Student:** Obtains signatures of committee members, initials of the Collection Development Librarian (or designee), and Graduate Program Chair on [Form 3: Thesis/Project/Dissertation and Degree Requirements Completion](#), then submits form to the Graduate Division for signature. The Graduate Division will obtain the final 2 signatures and submit to the Office of the Registrar by the deadline in the [University calendar](#).
- **Student:** Completes the Survey of Earned Doctorates (optional). Details may be found in the [Graduate Student Handbook](#).

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.

M.A. in Heritage Management

Program Chair: Peter R. Mills, Ph.D.

Dept. of Anthropology
Social Sciences Division Office
200 W. Kawili Street
Hilo, HI 96720

Email: mills@hawaii.edu

Professors:

- Peter R. Mills, Ph.D., Professor of Anthropology
- Lynn A. Morrison, Ph.D., Associate Professor of Anthropology

Associate Professors:

- Kathleen L. Kawelu, Ph.D., Associate Professor of Anthropology

Assistant Professors:

- Jack Rossen, Ph.D., Assistant Professor of Anthropology
- Joseph H. Genz, Ph.D., Assistant Professor of Anthropology

Lecturers:

- Eileen Momilani Naughton, Ph.D., NHERC
- Timothy Scheffler, Ph.D., lecturer, Dept of Anthropology
- Hans Van Tilburg, Ph.D., NOAA (adjunct)
- Lynne M. Wolforth, Ph.D., lecturer, Dept. of Anthropology

Program Description

The M.A. in Heritage Management is for students who seek careers in a multitude of governmental agencies, private-sector consulting firms, and in education, who work with the interpretation and preservation of



cultural heritage. UH Hilo's MA in Heritage Management responds to House Resolution No. 130 of the 24th Legislature (2008).

There are five main objectives:

1. to apply anthropological concepts to guide a workforce of historic preservationists who are committed to the long-term management of Hawaiian cultural resources;
2. increase the number of individuals of local ancestry in leadership positions in heritage management;
3. provide better assistance to community planners in developing plans that are more sensitive to traditional cultural properties, human burials, sacred sites, ancient habitation sites, agricultural systems, and trails;
4. provide training to meet the professional qualifications of principal investigators as defined in Hawai'i Administrative Rules (HAR)13-281 for conducting archaeological fieldwork and for conducting cultural impact assessments; and
5. provide training to meet the federal professional standards for archaeologists as defined in 36 CFR Part 61.

Although the program is focused primarily within Hawai'i, we address heritage training across the Pacific Islands. The proposal fills a clear need to produce individuals who are well-trained in the specific issues of Oceanic heritage. Despite dozens of similar MA programs around the globe, none of the major extant programs focus on the Pacific Islands. The region has unique cultural historical, social, and environmental characteristics that would make localized training more effective in creating qualified, culturally sensitive professionals.

Program Curriculum

Required Courses (12):

- ANTH 600 Thesis Design, Method, Theory (3)
- ANTH 601 Ethics of Heritage Management (3)
- ANTH 602 Historic Preservation Laws (3)
- ANTH 603 Qualitative & Quant. Methods (3)

Topical Courses (3): [choose 1]

- ANTH 611 Cultural Impact Assessments (3)
- ANTH 612 Indigenous Museum Studies (3)
- ANTH 613 Human Paleoecology (3)
- ANTH 614 Submerged Cultural Resources (3)

Area Courses (3): [choose 1]

- ANTH 623 Archaeology of Oceania (3)
- ANTH 624 Archaeology of Hawaii (3)
- ANTH 625 Pacific Heritage Management (3)

Applied Analytical Methods (minimum 6): [choose 2]

- ANTH 631 Oral History Research (3)
- ANTH 632 Paleobotanical Methods (3)
- ANTH 633 Material Conservation (3)
- ANTH 634 Lithic Analysis (3)
- ANTH 635 Human Osteology (3)
- ANTH 682 Archaeological Field Methods (3-5)

Year 2 Internship in Heritage Management: (minimum 6 credits to be determined by student's area of specialization, may be repeated)

- ANTH 690 Heritage Management Internship (3) (a) Internship in

Archaeology; (b) Internship in Museum Studies; (c) Internship in Burials Program (d) Internship in Cultural Impact Assessments.

Year 2 Thesis: (minimum 6 credits)

- ANTH 700 Thesis Research (1-6)

Total Minimum Semester Hours Required for the M.A. in Heritage Management: 36 credits.

M.A. in Counseling Psychology

Specialization: Clinical Mental Health Counseling

Program Director: Bryan Kim, Ph.D.

Email: bryankim@hawaii.edu

Website: counseling.uhh.hawaii.edu

Faculty:

- Steven Herman, Ph.D.
- Charmaine Higa-McMillan, Ph.D.
- Bryan Kim, Ph.D.
- Sunyoung Kim, Ph.D.
- Errol Yudko, Ph.D.

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. ([Counseling Psychology Division of the American Psychological Association](#))

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.

Mission

The mission of the Master of Arts program in counseling psychology is to provide multicultural, student-centered, graduate training in counseling psychology. The program is designed to train students to become knowledgeable, skillful, ethical counselors who will be able to help people in need of professional counseling services. For students who may wish to pursue a doctoral degree in psychology later, the program provides training in advanced statistics and research methodology. It also offers opportunities for students to gain research experience by participating in ongoing projects and/or by initiating their own research projects or a Master's Thesis. The program assigns a high priority to meeting the educational and personal needs of its students and is based on a scientist-practitioner model, with an emphasis on empirical research and evidence-based practices.



Program Goals

- To provide students with the knowledge and skills to counsel clients from different ethnic, socio-economic, and educational backgrounds;
- To provide students with a broad understanding of general counseling theory and practice, within a scientist-practitioner framework;
- To provide students with the knowledge of the social, psychological, health, and economic problems that people of Hawai'i face, along with the professional skills to help people cope with and manage these problems in the future;
- To offer research training opportunities to students who are interested in pursuing a doctoral degree in counseling psychology or a related field.

Student Learning Outcomes

Graduates from the program will be able to:

1. Provide mental health counseling to clients/patients from different ethnic, socio-economic, and educational backgrounds;
2. Understand general counseling theory and practice, within a scientist-practitioner framework;
3. Understand the social, psychological, health, and economic problems that residents of Hawaii face, along with the professional skills to help people cope with and manage these problems in the future;
4. Obtain licensure in mental health counseling in the state of Hawaii and many other states in the US.

Prospects for Graduates

Graduates of the program will be able to seek employment as professional counselors. Employment prospects for mental health counselors are currently good in Hawai'i and in many other areas of the United States. Employment opportunities in this field are expected to grow at a faster than average rate over the coming years. Professional counselors may find employment in a wide variety of settings, including the following:

- Community mental health clinics
- Public and private elementary and secondary schools
- Colleges and universities
- Correctional facilities
- Vocational rehabilitation centers
- Job training and career counseling centers
- Residential care facilities
- Drug and alcohol rehabilitation programs and agencies
- Private practice settings
- Mental hospitals and psychiatric wards
- General medical hospitals and other healthcare facilities
- Employee Assistance Programs
- Child welfare and other family assistance agencies
- Military settings

Licensure

The program curriculum meets the educational requirements for licensure as a Mental Health Counselor in the state of Hawai'i. Additional information can be obtained from the [Hawai'i Department of Commerce and Consumer Affairs](#). Please note that, in addition to completing the M.A. program, the current law has other requirements, including earning a passing score on the National Counselor Examination for Licensure and Certification and accruing at least 3000 hours of post-graduate

experience in the practice of mental health counseling.

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;
- Completion of the Graduate Record Examination (General Test);
- 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.

The application priority deadline for Fall admission is January 1. Please see [Graduate Application Procedures](#) for detailed information.

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 (60 credits)

1. **Required courses (51):**
 - PSY 601 Applied Multivariate Statistic (4)
 - PSY 602 Research Meth & Prgm Evaluatn (3)
 - PSY 603 Psychological Assessment (4)
 - PSY 604 Profssnl Identity, Ethics (3)
 - PSY 611 Lifespan Human Development (3)
 - PSY 612 Career Development (3)
 - PSY 613 Psychopathology over Lifespan (3)
 - PSY 620 Counseling Theories (3)
 - PSY 622 Group Work & Counseling (4)
 - PSY 623 Social & Cultural Foundations (3)
 - PSY 624 Counseling Skills (3)
 - PSY 640 Practicum (6)
 - PSY 659 Internship (9)
2. **Electives (9):**



- PSY 614 Family System (3)
- PSY 641 Schl Behavr, Adjustmt, Prblms (3)
- PSY 642 Educatnl & Vocatnl Assessment (3)
- PSY 643 Schl & Career Guidance & Consu (3)
- PSY 651 Theories Of Family Counseling (3)
- PSY 656 Child Maltreatment (3)
- PSY 693 Cog Behavior Therapy Adult (3)
- PSY 694 Special Topics in Subject Matter (To Be Arranged)
- PSY 695 CBT for Children and Families (3)
- PSY 699 Directed Studies (To Be Arranged)
- PSY 700 Thesis Research (1-6)

Education - School of Education

Department Chair: Diane Barrett, Ph.D.
Email: barrett9@hawaii.edu

Office: University Classroom Building (UCB), Room 313
Tel: (808) 932-7102
Website: hilo.hawaii.edu/depts/education/

Office Assistant: Madeline Sehna

Professor Emeritus: * Jan Zulich, Ph.D.

Professors:

- Diane Barrett, Ph.D.
- Michele Ebersole, Ph.D.
- Janet Ray, Ed.D.

Assistant Professors:

- Tobias Irish, Ph.D.
- Margary Martin, Ph.D.

Instructor-Field Experience Coordinator:

- Colby McNaughton, M.S.

The UH Hilo School of Education provides pre-service and in-service teachers with high quality, integrated, inquiry-and field-based professional development, serves as a resource to area educators who are meeting the challenges of teaching in a culturally rich, technologically advanced society, and conducts as well as guides action research to expand knowledge of teaching and learning.

The School of Education offers:

1. An 18-credit undergraduate [Certificate in Educational Studies](#), which does not lead to teacher licensure, but provides foundational coursework to those who are interested in pursuing education-related careers.
2. A 36-credit [Master of Arts in Teaching Program \(MAT\)](#) campus-based (Elementary and Secondary) format which leads to initial licensure in the State of Hawaii.
3. A 30-credit [Master of Education Program \(M.Ed.\)](#) primarily distance based format for the professional development of in-service teachers.

Mission

The UH Hilo School of Education is dedicated to the holistic development of transformational educators who are committed to equity, empowerment, and a critical understanding of our world. The School envisions its future as the heart of a learning community of caring,

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8:16am**

ethical, and creative people.

Curricula

- [Educational Studies Certificate](#)
- [Pre-Teacher Education Sequence for MAT Admission](#)
- [Education \(ED\) Courses](#)

Master of Education (M.Ed.)

Program Chair: Diane Barrett, Ph.D.
Office: University Classroom Building (UCB), Room 319
Website: hilo.hawaii.edu/depts/education/

Program Description

The Master of Education degree (M.Ed.) program prepares teacher leaders to serve their schools and communities in Hawaii and throughout the Pacific Rim. The program is aligned to Teacher Leader Model Standards. It is a 30-semester-hour, cohort-based program that may be completed in four semesters and two summers. Courses are offered primarily through a distance-learning format. As teacher leaders, graduates will be prepared to bring a culturally-responsive, research-based approach to school improvement efforts.

Student Learning Outcomes

Graduates of the program will be able to:

1. Design and conduct action research by exploring instructional and professional topics relevant to school and student performance;
2. Critically examine and analyze current trends and issues in education and apply this knowledge by demonstrating teacher leader competencies within the profession.

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 Hawaii 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;¹
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 pursue graduate study, and general character.

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 Ed Of Ethnic Groups in Hawaii (3)
- ED 602 Technology in Education (3)
- ED 608A Action Research I (3)
- ED 608B Action Research II (3)
- ED 608C Action Research III (3)
- ED 610 Foundations Of Education (3)
- ED 616 Assess & Evaluation in Ed (3)
- ED 622 School Curriculum (3)
- ED 625 Seminar in Teaching Fld (3)
- ED 635 Adv Instructional Strategies (3)

M. Ed. Graduation Requirements

- Students must complete all program courses.
- 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.

1. Applicants who do not hold a license to teach should meet with the School of Education Advisor ((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: **a)** development of knowledge, skills, and dispositions described in the Hawai'i Teacher Standards Board's Teacher Performance Standards, **b)** teaching experience, and **c)** ability to participate in the study of education at the level required in a

graduate program.

Master of Arts in Teaching (MAT)

Program Chair: Diane Barrett, Ph.D.

Office: University Classroom Building (UCB), Room 319

Website: 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. After the first year of the MAT, students apply for initial teacher licensure with the Hawai'i Teacher Standards Board. During the second year of the MAT, students 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.

MAT Claims

Those who complete the program will be able to:

- Create supportive environments based on their knowledge of learner development and learning differences.
- Demonstrate subject matter knowledge and apply this knowledge to engage students in learning content.
- Plan instruction that supports student learning through the use of multiple instructional and assessment strategies including technology.
- Demonstrate professional attributes, engage in critical reflection and collaborate to ensure learner growth.

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.
 - receive passing scores on the PRAXIS II: Content Area Examinations.
 - have a minimum of 40 hours (more preferred) of previous experience working with school-aged (P-20) youth.
 - submit three letters of recommendation from those who observed applicant working with school-aged youth.
 - submit two professional statements detailing interest in the teaching profession and beliefs about student learning.
- Additionally:
 - [School of Education](#) Interview may be required.
 - For all applicants seeking elementary licensure, these pre-requisite 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 Dev in Elem School (4), ED 343 Math for Elem School Teachers (3), and ED 347 Intgr Sci/Soc Stud Elem School (3).
 - 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 Social Studies, there may be additional prerequisite coursework. Each of the Social Studies prerequisite courses must be completed, each with a grade of C or better, and in combination passed with a GPA of 2.75 or above.
- 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.

Some courses are specific to the elementary track and others to the secondary track. Some courses are common to both tracks.

Elementary (36 credits)

First year, for licensure:

- ED 640 Learner Development (2)
- ED 641 Learning Differences I (1)
- ED 642 Learning Differences II (2)
- ED 643 Learning Environments I (1)
- ED 644 Learning Environments II (1)
- ED 645 Learning Environments III (2)
- ED 650 Teaching in Hawaii's Schools (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 659 Professional Practice (3)
- ED 660 Professional Responsibility I (1)
- ED 661 Professional Responsibility II (1)
- ED 662 Prof Responsibility III (1)
- ED 670 Field Experience I (1)
- ED 671 MAT Field Experience II (2)
- ED 672 Clinical Practicum (3)

Second year, to complete the MAT:

- ED 680 Teacher as Researcher I (3)
- ED 681 Teacher as Researcher II (3)

Secondary (36 credits)

First year, for licensure:

- ED 640 Learner Development (2)
- ED 641 Learning Differences I (1)
- ED 642 Learning Differences II (2)
- ED 643 Learning Environments I (1)
- ED 644 Learning Environments II (1)
- ED 645 Learning Environments III (2)
- ED 650 Teaching in Hawaii's Schools (1)
- ED 654 Tech Instruction & Assessment (2)
- ED 655 Sec Instructional Practice (2)
- ED 656 Sec LA/SS Pedagogy (2) OR 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 Prof Responsibility III (1)
- ED 670 Field Experience I (1)

- ED 671 MAT Field Experience II (2)
- ED 672 Clinical Practicum (3)

Second year, to complete the MAT:

- ED 680 Teacher as Researcher I (3)
- ED 681 Teacher as Researcher II (3)

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.

Academic Status, Progression, and Readmission Policies

Participants are required to begin the program during the Summer semester and are required to be enrolled full-time during Fall and Spring semesters. There are no elective courses.

Grades below "B-" or "credit" will not be accepted in courses defined to fulfill program requirements. Work for courses designated "credit/no credit," must be at least at the "B-" (2.7) level to qualify for "credit." Required MAT courses, unless designated "credit/no credit," may not be taken on a "credit/no credit" basis. A cumulative 3.0 GPA must be maintained in all MAT program course work. A candidate whose GPA in MAT courses falls below 3.0 may be dismissed from the program. In order to enroll in MAT courses, students must be admitted as teacher candidates into the program. Candidates must progress through MAT coursework and field experiences in three consecutive semesters. Fall and Spring semester enrollment is based on recommendation of the Education faculty. A candidate may be removed from a field experience when in the judgment of the Education faculty, cooperating teacher, and/or school principal the candidate is disrupting the educational process or is not making satisfactory progress toward meeting the requirements of the program. Such removal may result in complete dismissal from the program.

Students and candidates who stop out of the University must reapply and meet all criteria in effect for the respective Admission deadline. See guidelines and policies set forth in the UH Hilo Graduate Student Handbook.

Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language Graduate Programs

Graduate Programs Coordinator: Scott Saft, Ph.D.

Email: saft@hawaii.edu

Website: www.olelo.hawaii.edu/khuok/mhmulipuka.php

Professors:

- Glenn Kalena Silva, Ph.D.
- William Pila Wilson, Ph.D.

Associate Professors:

- Makalapua Alencastre, Ed.D.
- Jason Iota Cabral, Ph.D.
- Kekoa Harman, M.A.
- Betty-Joann Noelani Iokepa-Guerrero, Ph.D.
- Kauanoē Kamanā, Ph.D.
- Keiki Kawai'ae'a, Ph.D.
- Larry Kimura, Ph.D.
- Yumiko Ohara, Ph.D.
- Hiapo Keikane Perreira, Ph.D.



- Scott Saft, Ph.D.

Assistant Professor:

- Kananihohea Māka'imoku, M.A.

Vision and Mission of the College

'O ka 'ōlelo ke ka'ā o ka maui.

Language is the fiber that binds us to our cultural identity.

Consistent with the official status of the Hawaiian language in the state constitution, the Hawai'i state legislature in 1997 mandated the establishment of a college at the University of Hawai'i at Hilo, with classes and staff meetings to be conducted through the Hawaiian language. Established by the University of Hawai'i Board of Regents in 1998, UH Hilo's College of Hawaiian Language, Ka Haka 'Ula o Ke'elikōlani, was named in honor of Ruth Ke'elikōlani Keanolani Kanāhoahoa, the nineteenth century high chiefess known for her strong advocacy of Hawaiian language and culture.

The mission of the college is first to seek the revitalization of the Hawaiian language and culture, endangered by the dominance of Western culture in the twentieth century, so that both language and culture once again become commonplace in both educational and non-educational contexts in Hawai'i. Secondly, the college seeks to aid other indigenous peoples to revitalize their own endangered languages and cultures. Linguistics, the scientific study of human language, is central to the Ph.D. program of the college and informs its work in all other areas as well.

The college is still small and its programs are not fully established. The M.A. program in Hawaiian Language and Literature was initiated in 1998, shortly after the college was established. The [Kahuawaiola Hawaiian and Indigenous Teacher Education Program](#) to train Hawaiian speaking teachers for Hawaiian medium schools was initiated in 1999. Two additional graduate programs were later initiated, the Ph.D. in Hawaiian and Indigenous Language and Culture Revitalization in 2006, and the M.A. in Indigenous Language and Culture Education in 2007. For now, the college's ability to train students whose indigenous language is other than Hawaiian is limited to the Ph.D. program. 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. 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. The college will also open the certificate program in indigenous language and culture revitalization, which aims to give course work to students who have already obtained a bachelor's degree in order to help prepare them for work as educators, or for entering one of the college's graduate programs.

- [Ph.D. in Hawaiian and Indigenous Language and Culture Revitalization](#)
- [M.A. in Hawaiian Language and Literature](#)
- [M.A. in Indigenous Language and Culture Education](#)
- [Kahuawaiola Indigenous Teacher Education Graduate Program Certificate](#)
- [Hawaiian Language \(HAW\) Graduate Courses](#)
- [Hawaiian Studies \(HWST\) Graduate Courses](#)
- [Ke'elikōlani Education \(KED\) Graduate Courses](#)
- [Ke'elikōlani Indigenous Language \(KLAN\) Graduate Courses](#)

- [Ke'elikōlani Indigenous Studies \(KIND\) Graduate Courses](#)
- [Ke'elikōlani Linguistics \(KLIN\) Graduate Courses](#)

Kahuawaiola Indigenous Teacher Education Graduate Program Certificate

Coordinator: Makalapua Alencastre, Ed.D

Email: kaawa@hawaii.edu

Faculty:

- Makalapua Alencastre, Ed.D.
- Betty-Joann Noelani Iokepa-Guerrero, Ed.D.
- Keiki Kawai'ae'a, Ph.D.
- Kananihohea Māka'imoku, M.A.

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 Information Contact:

[Ku'ulei Kepa'a](#)

Ka Haka 'Ula O Ke'elikōlani
University of Hawai'i at Hilo
200 W. Kāwili Street
Hilo, Hawai'i 96720-4091

Tel: (808) 932-7730

Email: kuulei.kepaa@hawaii.edu

Website: kahuawaiola.org

Program Description

The [Kahuawaiola Hawaiian and Indigenous Teacher Education Program](#) is a three-semester graduate certificate program, delivered primarily through the medium of Hawaiian, specifically designed to prepare *Mauli 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) and the World Indigenous Nations Higher Education Consortium (WINHEC). Upon successful completion of the program, candidates will have satisfied one of the requirements for initial licensure from the Hawai'i Teachers Standards Board. (See Graduation Requirements section for additional requirements for recommendation to the HTSB.)

Based on the Hawaiian concepts *Ma ka hana ka 'ike* (Knowledge comes from direct experience), and *Ma mua ka hana, ma hope ka wala'au* (direct experience comes first, discussion comes second), Kahuawaiola places a high value on on-site learning and practicum experience with high performance outcomes. Academics are integrated in a spiraling sequence and holistic indigenous approach both within and outside the classroom for a balance of theory and applied learning situations. The four program areas of teacher preparation include, 1) Hawaiian language, culture, and values; 2) pedagogical skills; 3) knowledge of content; and 4) development of professional qualities.

Kahuawaiola is delivered through a Hawaiian cultural framework of four *pale*, or phases. The first *pale*, *Wana'ao*, requires that students accepted into the program have previous experience in teaching and/or curriculum development through the medium of Hawaiian. (See Entrance Requirements section for complete description of work experience



requirement.)

The second pale, *Kahikole*, takes place during the summer. During this foundation phase of teacher training, principles of learning and teaching are integrated with state standards and general educational theory through a philosophy of education, *Ke Kumu Honua Maui Ola*, based on Hawaiian traditions. Students learn to integrate Hawaiian culture and pedagogy into all phases of the curriculum and content areas, including differential learning strategies, lesson planning, assessment, classroom management, and other skills necessary for practical application in the third pale. Students carry a total course load of 13 credits during the summer session.

Students then invest two full semesters to gain student teaching experience at Hawaiian medium school locations around the state. They are encouraged to return to their home communities for the practicum phases and are supported by a cooperating teacher, regular site visits from clinical faculty, and professional development workshops where the students are given the opportunity to interact with practicing Hawaiian immersion professionals from throughout the state. Students are expected to commit full-time to the practicum experience, which also includes a discussion seminar via HITS (Hawai'i Interactive Television System). The third pale, *Kahikū*, takes place during the fall semester and focuses on developing teaching skills but includes discussion of broader issues as appropriate. Students carry a total course load of 12 credits during the fall semester which includes both the practicum and seminar.

The fourth pale, *Kaulolo*, takes place during the spring semester and focuses on mastery of teaching skills and professionalism through extended teaching experiences and seminar support. The seminar focuses on hypothetical situations and long-range goals rather than practical day-to-day situations, although these are also covered when appropriate. In this pale, students acquire the higher-level planning and conceptualization skills necessary for the growth of Hawaiian medium education. During the spring semester, students carry a total course load of 12 credits including both the practicum and seminar.

Evaluation of Hawaiian language proficiency is conducted through tests that evaluate the level of fluency in six areas:

1. reading comprehension;
2. aural comprehension;
3. use of standard orthography in adapting older materials;
4. translation from English;
5. composition; and
6. oral language skills demonstrated in an interview.

Mission

The mission of Kahuawaiola is to prepare "Maui Ola Hawai'i" teachers of the highest quality, who are grounded in Hawaiian language and culture, to serve in Hawaiian language medium schools, in Hawaiian language and culture programs in English medium schools, and in schools serving students with a strong Hawaiian cultural background.

Student Learning Outcomes

1. 'Ike 'Ōlelo: Demonstrate Hawaiian language proficiency within multiple contexts of the learning environment.
2. 'Ike Maui Ola Lāhui: Fosters a Hawaiian cultural identity through effective culture-based methods.
3. 'Ike Ho'okō: Utilizes consistent self-evaluation and improvement practices and creates learning experiences which guides students' towards academic, social, and cultural excellence.

4. 'Ike Pilina: Cultivates respect and nurtures relationships that connect the school, families, and community.
5. 'Ike Honua: Creates and maintains civic responsibility for culturally responsive, safe and nurturing learning environments.
6. 'Ike Na'auao: Seeks out, maintains and utilizes Hawaiian educational processes, knowledge, perspectives and experiences for the benefit of all students.
7. 'Ike Piko'u: Exhibits a heartfelt love for teaching and a sincere desire for pursuing high professional standards of excellence and ongoing improvement.
8. 'Ike Kuana'ike: Cultivates multiple perspectives that foster an appreciation for diverse worldviews through a Hawaiian lens.
9. 'Ike Ola Pono: Embraces healthy well-rounded and responsible practices as a role model for students.

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).
- A minimum GPA of 2.75 in the major.
- 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 Hawaiian 'Ohana (3), HWST 211 Hawaiian Ethnobotany (3), HWST 213 Hawaiian Ethnozoology (3); 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 Hawaiian Music in Action (2), HWST/KHWS 471 Mele 'Auana (3), KHWS/HWST 472 Hula 'Auana (3), KHWS/HWST 473 Oli/Mele Kahiko (3), KHWS/HWST 474 Hula Kahiko (3); or permission from the Hawaiian Studies Division based on an evaluation of Hawaiian cultural knowledge and skills.
- Successful completion of KHAW/HAW 490 Base-level Fluency Hawn Med Ed (1).
- 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) or equivalent, **and** on Praxis II (Subject Assessments) Content Area Exercises or equivalent, relevant to elementary and secondary level licenses which the applicant will seek from the Hawai'i Teacher Standards Board. Equivalent are those stated in current Hawai'i Teacher Standards Board policy.
- 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.¹ (**Application deadline is December 1st**)



- University of Hawai'i Application for Admission (including processing fee)
- Kahuawaiola Admission Application
- Statement of interest
- Work Experience Verification form
- Three letters of recommendation
- Official college/university transcripts (for EACH post-high institution previously attended)
- Official Praxis I/II scores

¹ 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.

Program Requirements (37 credits)

Graduation from the program is based on the successful completion of the following requirements:

11 required courses:

- KED 620 Foundations for Hawn Medium Ed (3)
- KED 621 Lang Arts in Hawn Medium Educ (2)
- KED 623 Social Studies Hawn Medium Ed (2)
- KED 625 Phys Ed in Hawn Medium Ed (1)
- KED 626 Science in Hawn Med Education (2)
- KED 627 Math in Hawn Medium Education (2)
- KED 628 Arts in Hawaiian Medium Educ (1)
- KED 641 Hawaiian Medium Field Exp I (9)
- KED 642 Hawaiian Med Fld Exp I Seminar (3)
- KED 643 Hawaiian Medium Fld Exp II (9)
- KED 644 Hawaiian Med Fld Exp II Sem (3)

Minimum grade of 3.0 in all teacher training courses requiring grades.

Academic Status, Progression, and Readmission Policies

Kahuawaiola runs summer, fall, spring and only takes 12 months to complete. 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.

Gainful Employment Disclosure

Beginning July 1, 2011, the US Department of Education began requiring colleges to disclose a variety of information for any financial aid eligible program that "prepares students for gainful employment in a recognized occupation". We hope that this information is helpful to our current students and to prospective students as they make their career and educational choices.

The data includes occupations, placement rates, on-time completion

rates, average costs and program median loan debt.

[Gainful Employment Disclosure for Kahuawaiola Indigenous Teacher Education Program](#)

M.A. in Indigenous Language and Culture Education

Coordinator: Makalapua Alencastre, Ed.D.

Email: kaawa@hawaii.edu

Faculty:

- Makalapua Alencastre, Ed.D.
- Betty-Joann Noelani Iokepa-Guerrero, Ed.D.
- Keiki Kawai'ae'a, Ph.D.
- Kananihohea Māka'imoku, M.A.

Note: This program is also assisted by other faculty drawn from Ka Haka 'Ula O Ke'elikōlani College of Hawaiian Language and by scholars with a national and international reputation in indigenous language and culture education from outside the college.

For Information Contact:

[Ku'u lei Kepa'a](#) Ka Haka 'Ula O Ke'elikōlani

University of Hawai'i at Hilo

200 W. Kāwili Street

Hilo, Hawai'i 96720-4091

Tel: (808) 932-7730

Email: kuulei.kepaa@hawaii.edu

Website: www.olelo.hawaii.edu/khuok/ma_hoonaaauo.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'o 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.

Mission

The mission of the M.A. program in Hawaiian and Indigenous Language and Culture Education is to prepare indigenous educators as reflective practitioners and researchers, who are prepared to promote the further



development of indigenous culture-based education.

Student Learning Outcomes

1. Apply pedagogy appropriate to maui ola / indigenous language medium and culture-based education.
2. Describe, use and provide rationale of indigenous pedagogy and dispositions within P-12 classrooms.
3. Communicate effectively in both academic and indigenous community environments.
4. Access, analyze and reflect on indigenous knowledge, practices, literature and research findings.
5. Design and conduct culturally appropriate, rigorous and ethical research that is responsive to issues inherent in indigenous language medium and culture-based education.
6. Analyze global trends and perspectives that affect the implementation of indigenous language and culture education.

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'i¹ and successful completion of KHAW/HAW 490 Base-level Fluency Hawn Med Ed (1).

¹ 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. **Group specific indigenous language medium education (13):**

**Generated: Monday, April 23, 2018,
8:16am**

- KED 620 Foundations for Hawn Medium Ed (3)
 - KED 621 Lang Arts in Hawn Medium Educ (2)
 - KED 623 Social Studies Hawn Medium Ed (2)
 - KED 625 Phys Ed in Hawn Medium Ed (1)
 - KED 626 Science in Hawn Med Education (2)
 - KED 627 Math in Hawn Medium Education (2)
 - KED 628 Arts in Hawaiian Medium Educ (1)
2. **Field study (6):**
 - KED 642 Hawaiian Med Fld Exp I Seminar (3)
 - KED 644 Hawaiian Med Fld Exp II Sem (3)
 3. **KED 630 Res Meth in Indigenous Lang (3)**
 4. **KED 693 Applied Rsrch in Indigenous Ed (3)**
 5. **Appropriate 600-level education, multilingual societies or linguistics electives taken from any two of the following (6):**
 - HAW 632 Hawaiian As Second Language (3)
 - KED 660 Indigenous Culture-based Educ (3)
 - KED 661 Curr Dev Maui Ola-based Sch (3)
 - KED 662 Indigenous Well-being Thru Edu (3)
 6. **Completion of the Kahuawaiola Indigenous Teacher Education Program**
 - KED 641 Hawaiian Medium Field Exp I (9) and KED 643 Hawaiian Medium Fld Exp II (9)
 - **or** both waived upon approved equivalent

M.A. in Hawaiian Language and Literature

Coordinator: Hiapo K. Perreira, Ph.D.

Email: hiapokei@hawaii.edu

Faculty:

- Jason Iota Cabral, Ph.D.
- Kekoa Harman, M.A.
- Larry Kimura, Ph.D.
- Hiapo K. Perreira, Ph.D.
- Glenn Silva, Ph.D.
- William Wilson, Ph.D.

For Information Contact:

Ku'ulei Kepa'a

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University of Hawai'i at Hilo
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Hilo, Hawai'i 96720-4091

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Email: kuulei.kepaa@hawaii.edu

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.

Mission

The mission of the M.A. program in Hawaiian Language and Literature is to prepare scholars to carry out research to enhance our knowledge of Hawaiian language and culture in order to ensure their preservation and revitalization. The program draws upon the tremendous wealth of



Hawaiian literary resources from the 19th and 20th centuries and examines the contemporary use of Hawaiian language and culture.

Student Learning Outcomes

1. Demonstrate oral and written comprehension and grammatically correct use of Hawaiian at a level appropriate to graduate work.
2. Identify and explain major aspects of the grammatical structure of a sample of Hawaiian.
3. 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).
4. 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.
5. Demonstrate both knowledge of and skill in performance of Hawaiian chant
6. Write an effective academic paper in Hawaiian (clear, concise, effectively organized, accurate in content, analytical and/or synthetic in nature).
7. Apply various research methods appropriate to Hawaiian language and literature and carry out rigorous research in field.
8. 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 credits in Hawaiian Language or Hawaiian Studies at the 300- or 400-level 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 (36 credits)

Complete all nine of the following requirements for a total of 36 credits:

1. Earn **12 credits** from the following four courses:
 - o HAW 603 Grad Level Hawn Lang (3)
 - o HAW 630 Research Methods in Hawn Lang (3)
 - o HAW 631 History of Hawaiian Lang & Lit (3)
 - o HWST 663 Traditional Hawn Literature (3)
2. Earn **3 credits** from:
 - o KHWS/HWST 473 Oli/Mele Kahiko (3)
 - o **or** HWST 662 Applied Hawaiian Chant (3)
3. Earn **3 credits** from:
 - o HWST 664 European Influenced Hawn Lit (3)
 - o **or** HWST 665 Ethnological & Hist Narratives (3)
 - o **or** KANT 486 Mo'omeheu Hawai'i Ku'una (3)
4. Earn **3 credits** from:
 - o KHAW/HAW 453 Hawn Phonetics & Phonol (3)
 - o **or** KHAW/HAW 454 Hawn Morphology & Syntax (3)
 - o **or** HAW 654 Advanced Hawn Grammar (3)
5. A minimum of **24 credits** must be earned in 600- or 700-level courses, excluding HAW 700 Thesis Research (1-6). Only six credits may be counted in 400-level classes.
6. Earn **3 credits** from either HAW 690 Study in Hawn Spking

Community (3) **or** HWST 690 Study in Overseas Ind Lg Comm (3) (course must be approved by program chair). Students typically study for at least six weeks with an endangered language community.

7. Earn **6 additional credits** in 400-, 500-, or 600-level 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):
 - o KHAW/HAW or KHWS/HWST 400-498, 600-699V (except KHAW/HAW 490)
 - o KED 600-699V (except KED 641-644)
 - o KANT 486 Mo'omeheu Hawai'i Ku'una (3)
 - o KIND 601-602 Language Maintenance and Shift (3), Meth/Resou Indig Lang Comm Blg (3)
 - o Up to six credits 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 credits** from:
 - o HAW 693 Thesis and Proposal Writing (3)
 - o **or** HAW 700 Thesis Research (1-6)
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.

Ph.D. in Hawaiian and Indigenous Language and Culture Revitalization

Coordinator: Scott Saft, Ph.D

Email: saft@hawaii.edu

Website: www.olelo.hawaii.edu/khuok/laeula.php

Faculty:

- Jason Iota Cabral, Ph.D.
- Betty-Joann Noelani Iokepa-Guerrero, Ed.D.
- Kauanoë Kamanā, Ph.D.
- Larry Kimura, Ph.D.
- Yumiko Ohara, Ph.D.
- Hiapoekikane Perreira, Ph.D.
- Scott Saft, Ph.D.
- Glenn Kalena Silva, Ph.D.
- William 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

For Information Contact:

Ku'ulei Kepa'a Ka Haka 'Ula O Ke'eliikōlani
University of Hawai'i at Hilo



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Program Description

Ka Haka 'Ula O Ke'elilkōlani is widely recognized as the leader in indigenous language revitalization in the United States, and indeed the North Pacific Basin. Concentrated in Hilo is a preschool through graduate school Hawaiian medium educational system and key support offices providing administrative, curricular, language planning, and technological support to programs throughout the Hawaiian islands. In addition, Ka Haka 'Ula O Ke'elilkōlani provides government sponsored outreach services to support indigenous languages throughout Polynesia and the United States.

The Doctorate in Hawaiian and Indigenous Language and Culture Revitalization is designed first to serve the needs of the State of Hawai'i for advanced academic training and scholarly research in the Hawaiian language. An additional goal is to use the internationally recognized successful model of Hawaiian language revitalization to provide other indigenous scholars and language educators with graduate level education relevant to the revitalization of their own languages and cultures. By providing a forum for the exchange of ideas and research on the many issues involved in revitalizing indigenous languages and cultures elsewhere, Hawaiian revitalization will be further strengthened.

All students in the doctoral program are required to speak an indigenous language - their "language of focus" - and further develop their knowledge of that language in courses that explore the similarities and differences among such languages. In addition, students choose two specializations from among the four systematic fields offered 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. Thus, students who focus on a non-Hawaiian indigenous language will choose two specializations from areas a), b), and c); students who focus on Hawaiian language may choose among all four areas.

A number of possible paths from other universities lead into the doctoral program, including the master's in Indigenous Studies, Anthropology, Languages (including English), and Linguistics. For those with a strong interest in Hawaiian, the College itself provides the Master of Arts in Hawaiian Language and Literature, the first master's in an indigenous language in the United States. In addition, the College provides a pathway for non-Hawaiian language specialists through the Master of Arts in Indigenous Language and Culture Education. The two master's programs are described earlier in this section.

Mission

The mission of the Ph.D. program in Hawaiian and Indigenous Language and Culture Revitalization is to train well rounded Hawaiian and other indigenous scholars who are prepared to take leadership roles within their communities in indigenous language and culture revitalization.

Student Learning Outcomes

1. Describe and evaluate important current ideas and data in two of the four areas of program specialization (a. indigenous language and culture education, b. indigenous language and culture in society, c. indigenous language planning, d. Hawaiian language and culture)
2. Integrate the fundamentals of all three areas—indigenous language

and culture education, indigenous language and culture in society, indigenous language planning—to solve real problems in maintaining and revitalizing indigenous language and culture.

3. Analyze their indigenous language of focus in terms of its grammar, semantics and socio-linguistic variation.
4. Write effective academic papers (clear, concise, effectively organized, accurate in content, analytical and/or synthetic in nature).
5. Write effective non-academic essays to inform public opinion concerning indigenous language and culture revitalization.
6. Communicate effectively in government and indigenous community environments.
7. Apply various research methods appropriate to research in indigenous language and culture revitalization and can carry out rigorous research in the field.
8. Exhibit leadership potential for revitalization of their indigenous language and culture.

Admission Requirements

1. Master's degree from an accredited college or university with a minimum 3.0 grade point average 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:
 - o academic objectives and research interests.
 - o experience in educational service to his or her indigenous language of focus.
 - o 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.
 - o 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'elilkōlani College of Hawaiian Language.

Graduation Requirements

1. KIND 730 Rsch Meth Hwn Ind Lang Culture (3)
2. **Eight Credits** in Advanced Study of Language of Focus:



- KLAN 701 Semantic/Pragmatic Indig Lang (1)
- KLAN 702 Stylistics/Domains Indig Lang (1)
- KLAN 703 Semantics-Prag of Indig Langua (3)
- KLAN 704 Stylistics-Domain of Indig Lan (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 Indigenous Culture-based Educ (3), KED 662 Indigenous Well-being Thru Edu (3) or equivalent)
 - KIND 794 Indigenous Language and Culture In Society (3) (Pre: KIND 601 Language Maintenance and Shift (3), KIND 602 Meth/Resou Indig Lang Comm Blg (3) or equivalent)
 - KLIN 794 Language Planning (3) (Pre: KIND 601 Language Maintenance and Shift (3), KIND 602 Meth/Resou Indig Lang Comm Blg (3) or equivalent)
 - HWST 794 Hawaiian Language and Culture (3) (Pre: HAW 631 History of Hawaiian Lang & Lit (3), HAW 654 Advanced Hawn Grammar (3), HWST 663 Traditional Hawn Literature (3), HWST 665 Ethnological & Hist Narratives (3) or consent of instructor)

- 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 Hawaii 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 Doctoral Dissertation Research (1-6) (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 (D.N.P.)

Program Coordinator: Alice E. Davis, Ph.D., APRN
Email: aedavis@hawaii.edu

University of Hawai'i at Hilo, [School of Nursing](#) (UH Hilo SON)
School of Nursing Office
200 W. Kāwili Street
Hilo, HI 96720

Program Description

The Doctor of Nursing Practice (DNP) is the practice-focused doctoral degree developed in response to the endorsement of the American Association of Colleges of Nursing (AACN) position paper recognizing the DNP as the credential for advanced nursing practice. The DNP is equivalent to entry level professional degrees offered by other health care disciplines including Doctor of Medicine (MD), Doctor of Dental Surgery (DDS) and the Doctor of Pharmacy (PharmD). Opportunities culminating in a practice inquiry project. The curriculum is based on the AACN essentials of Doctoral education for Advanced Practice Nurses. Students will participate in lectures, seminars, laboratory simulations, and site visits to rural communities. Research methods and evidence based practice provide opportunities for data analysis, research critique, evidence-based presentations, formulation and evaluation of a practice inquiry research project. At the conclusion of the program, all students will demonstrate competence in the eight essentials of doctoral education, be prepared for their specialty role as an individual health care provider, and be trained for leadership roles within the larger health care system.

Mission

The Doctorate of Nursing practice (DNP) is a program designed to prepare the nurse at an advanced level of nursing science. The program emphasizes the development of the student's capacity to impact the clinical setting as leaders and educators and to utilize clinical research to improve and transform health care. Our program is based on the understanding that nursing provides services which includes the direct care of individual clients, transcultural nursing, management of care for rural populations, administration of nursing systems, and development and implementation of health policy. In addition, the program will encompass health policy, health economics, cultural diversity, chronic care management, health promotion, and disease prevention in rural communities and will create a cadre of new nursing faculty who can



immediately address the nursing faculty shortage. Advanced practice nurses with practice doctorates will address significant practice issues in a scholarly way, adopt broad system perspectives for health promotion and risk reduction, and act as agents of change that transform client/community care, participate in the on-going evaluation of health care outcomes, and assist in the translation of research that leads to positive nursing practice changes.

Program Learning Outcomes

The UH Hilo SON ascribes to the curricular elements and competencies of the DNP degree proposed by the [American Association of Colleges of Nursing \(AACN\)](#). The DNP essentials describe the necessary foundational outcomes required for the DNP graduate.

1. Scientific Underpinnings for Practice
2. Organizational and Systems Leadership for Quality Improvement and Systems Thinking
3. Clinical Scholarship and Analytical Methods for Evidence-Based Practice
4. Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care
5. Health Care Policy for Advocacy in Health Care
6. Interprofessional Collaboration for Improving Patient and Population Health Outcomes
7. Clinical Prevention and Population Health for Improving the Nation's Health
8. Advanced Nursing Practice

Student Learning Outcomes

Graduates from the DNP program will achieve the following program learning outcomes as a result of an integrated approach to learning, problem solving, evidence-based knowledge utilization, and skill acquisition:

1. Synthesize theoretical knowledge and research evidence in designing primary care delivery for diverse populations across the lifespan in rural contexts.
2. Collaborate with multidisciplinary professions, multisectoral agencies and lay communities to influence social and health policies impacting rural population health.
3. Assume leadership role in organizational systems to improve rural population health in local and regional communities.
4. Promote adherence to professional and ethical-legal standards of practice by individual professionals and organizations.
5. Integrate cultural competence and social justice in addressing health disparities in rural populations.
6. Examine research evidence in design and implementation and evaluation of policies and programs for population health in rural communities.
7. Use best practices and technology to improve care delivery for diverse individuals, families and communities within the continuum of primary, secondary and tertiary care.
8. Create educational programs to develop culturally competent practice and education of the nursing workforce .
9. Design educational programs and evaluation programs to enhance rural community empowerment for health.

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 Hawaii RN License, in addition to current RN license where you intend to practice
- 3 recommendations (two from faculty, one from 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, [School of Nursing website](#), or [Admissions Office DNP information](#).

Graduation Requirements

1. Completion of all graduate courses for the specific entry point enrolled (BSN-DNP or MSN-DNP)
2. Minimum accepted GPA of 3.0 in all graduate courses
3. Successful completion of 1000 practice hours or portion thereof based on previous practice experience
4. Successful completion of Family Nurse Practitioner (FNP) competencies (BSN-DNP entry point only)
5. Successful completion of a Practice Inquiry Project
6. Successful presentation of the Practice Inquiry Project at an oral defense
7. Compliance with UH Hilo rules and regulations for graduation

Post-BSN to DNP Required Courses (71-73 credits)

- NURS 618 EPI/Environmental Health (3)
- NURS 601 Social Aspects of Health (3)



- NURS 602 Information Systems/Technology (3)
- NURS 603 Adv Clinical Pharmacology (3)
- NURS 604 Advanced Clin Pathophysiology (3)
- NURS 605 Advanced Health Assessment (4)
- NURS 606-606L Rural Health Promotion (3), Rural Health Promotion Lab (3)
- NURS 607-607L Primary Care of Adults (3), Primary Care of Adults Lab (3)
- NURS 608-608L Primary Care of Older Adults (3), Prim. Care of Older Adults Lab (3)
- NURS 609-609L Primary Care of Women (2), Primary Care of Women Lab (2)
- NURS 610-610L Primary Care of Children (2), Primary Care of Children Lab (2)
- NURS 611 Advanced Research Methods (3)
- NURS 612 Evidence Based Practice (3)
- NURS 613 Program Develop/Evaluation (3)
- NURS 614 System-Based Leadership (3)
- NURS 615 Health Policy: Local to Global (4)
- NURS 616 Health Economics (3)
- NURS 617 Practice Inquiry/Project (6)
- Elective (1-3) (A graduate elective is required.)

MSN to DNP Required Courses (38-40 credits)

- NURS 618 EPI/Environmental Health (3)
- NURS 601 Social Aspects of Health (3)
- NURS 602 Information Systems/Technology (3)
- NURS 606 Rural Health Promotion (3)
- NURS 611 Advanced Research Methods (3)
- NURS 612 Evidence Based Practice (3)
- NURS 613 Program Develop/Evaluation (3)
- NURS 614 System-Based Leadership (3)
- NURS 615 Health Policy: Local to Global (4)
- NURS 616 Health Economics (3)
- NURS 617 Practice Inquiry/Project (6)
- Elective (1-3) (A graduate elective is required.)

Daniel K. Inouye College of Pharmacy (DKICP) Graduate Programs

Dean: [Carolyn Ma](#), Pharm.D., BCOP, CHTP/I

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Interim Associate Dean for Academic Affairs: [Aaron Jacobs](#), Ph.D.

Chair, Department of Pharmaceutical Sciences: [Linda Connelly](#), Ph.D.

Chair, Department of Pharmacy Practice: [Roy Goo](#), Pharm.D.

Professors:

- [Susan Jarvi](#), Ph.D.
- [Deborah Taira](#), Sc.D.
- [Supakit Wongwiwatthananutit](#), PharmD, Ph.D.

Associate Professors:

- [Julie A. L. Adrian](#), D.V.M.

- [Shugeng Cao](#), Ph.D.
- [Leng Chee Chang](#), Ph.D.
- [Linda Connelly](#), Ph.D.
- [Roy Goo](#), Pharm.D.
- [Daniela Guendisch](#), Ph.D.
- [Aaron Jacobs](#), Ph.D.
- [Dana-Lynn Ko'omoa-Lange](#), Ph.D.
- [Carolyn Ma](#), Pharm.D., BCOP, CHTP/I
- [Dianqing Sun](#), Ph.D.
- [Ghee Tan](#), Ph.D.
- [Sheri Tokumaru](#), Pharm.D., BCPS

Assistant Professors:

- [Cherie Chu](#), Pharm.D., BCPS
- [Chad Kawakami](#), Pharm.D., BCPS, CDE
- [Louis Lteif](#), Pharm.D., BCPS
- [Camlyn Masuda](#), Pharm.D., BCACP, CDE
- [Jarred Prudencio](#), Pharm.D.
- [Allen Shih](#), Pharm.D., BCPS

Instructors:

- [Ingo Koomoa-Lange](#)
- [George Karvas](#), R.Ph.

Associate Specialists:

- [Lara Gomez](#), Pharm.D.
- [Patricia Juszczak](#), R.Ph.
- [Wesley Sumida](#), Pharm.D., BCPS

Assistant Specialists:

- [Anita Ciarleglio](#), Ph.D.
- [Tamara Kondratyuk](#), Ph.D.

Junior Specialists:

- [Tamara Kondratyuk](#), Ph.D.

Director of Clinical Education: [Lara Gomez](#), Pharm.D.

Clinical Education Coordinators:

- [Michelle Kim](#), Pharm.D.

Director of Continuing Education/Distance Education and Strategic Planning: [Karen L. Pellegrin](#), Ph.D., M.B.A.

Director of Student Services: [Daryl Masanda](#)

Director of MS in Clinical Psychopharmacology: [Supakit Wongwiwatthananutit](#), PharmD, Ph.D.

Director of PhD Program in Pharmaceutical Sciences: [Ghee Tan](#), Ph.D.

Laboratory Manager: [Tamara Kondratyuk](#), Ph.D.

Programs

- Doctor of Pharmacy (Pharm.D.)
- Rural Health Graduate Certificate (PharmD)
- Ph.D. in Pharmaceutical Sciences
- Pharmaceutical Science (PHPS) Post-Baccalaureate Courses



- [Pharmacy Practice \(PHPP\) Post-Baccalaureate Courses](#)

Doctor of Pharmacy (Pharm.D.)

Dean: [Carolyn Ma](#), Pharm.D., BCOP, CHTP/I

Interim Associate Dean for Academic Affairs: [Aaron Jacobs](#), Ph.D.

Department of Pharmaceutical Sciences: [Linda Connelly](#), Ph.D.

Department of Pharmacy Practice: [Roy Goo](#), Pharm.D.

UH Hilo

[Daniel K. Inouye College of Pharmacy \(DKICP\)](#)

34 Rainbow Drive, Hilo, HI 96720

Email: pharmacy@hawaii.edu

Tel: (808) 933-2909 **Website:** pharmacy.uhh.hawaii.edu

Program Description

The University of Hawai'i at Hilo's Daniel K. Inouye College of Pharmacy (DKICP) is a four-year educational and experiential program through which students pursue the Doctor of Pharmacy (Pharm.D.) degree. The Pharm.D. program prepares the student for entry into the pharmacy profession. During the four years at DKICP, students will complete a total of 138 semester hours of credit; 89 hours in required courses, 4 credit hours in elective professional courses, and 45 credit hours in clinical/experiential education.

Mission

The mission of the University of Hawai'i at Hilo DKICP is the traditional mission of academic healthcare—education, research, and service with emphasis on patient care. More specifically, our mission is:

- To educate pharmacy practitioners and leaders.
- To serve as a catalyst for innovations and discoveries in pharmaceutical science and practice for the promotion of health and wellbeing.
- To provide community service, including quality patient care

Program Goals

The DKICP mission is predicated on four overarching goals:

- Implement academic curricula that lead to a flagship Pharm.D. program, which produces graduates committed to serving people via science-based practice.
- Accountability to the Institute of Medicine's core competencies for the health professional workforce.
- Conduct research that advances pharmaceutical sciences and makes a difference for humanity inclusive of effects on global health.
- Cultivate culturally competent, intellectually inquisitive, self-directed, caring pharmacists who are critical thinkers, problem solvers and life-long learners in a changing healthcare environment.

Student Learning Outcomes

At the conclusion of the four year PharmD program a graduate will be able to:

1. Think critically and solve problems effectively.
2. Communicate effectively with patients and other health care providers in all matters related to providing pharmaceutical care.

3. Make ethical decisions concerning pharmaceutical care.
4. Demonstrate professional and social responsibility.
5. Engage in self-directed learning.
6. Manage all aspects of pharmacy related activities.
7. Promote public health and provide drug information and education to patients and other health care providers.

Values

A values framework underpins the DKICP mission and vision in its commitment to building a culture of quality and excellence in pharmacy practice and pharmaceutical sciences via enactment of five values:

- **Ethics** underlies responsibility and accountability to standards in ensuring safe, quality, healthy environments for education, conducting research, providing pharmaceutical healthcare services, and sustaining livelihood. The DKICP thrives upon ethical decision-making and morality.
- **Community** is cultivated through spaces of collaborations and places of meaning, respect, openness, freedom and creativity. The DKICP is rooted in humanism.
- **Diversity** among people, cultures, theories, practices, institutions permeate 21st century healthcare. The DKICP embraces and celebrates diversity, with a niche in cultural diversity.
- **Scholarship** is the passion and outcomes of academic and professional life. The quest of the DKICP for quality and excellence affirms scholarly pursuits.
- **Life-long learning** is the pathway to stimulating pharmacy practice on a continuum of development and advancing pharmacy as a science and profession. The DKICP is nurtured via the continuum of lifelong education.

Vision

The vision of the DKICP at the University of Hawai'i at Hilo is to drive improvement in the quality of healthcare in Hawai'i and throughout the Pacific Basin. We are achieving this vision by focusing on Hawai'i's unique cultural, physical, and geographic features, by employing world-class faculty, and by graduating exceptional professionals.

Prospects for Graduates

Graduates of the Pharm.D. program at the University of Hawai'i at Hilo will be able to seek employment as pharmacists in a variety of professional settings. Their professional duties may include, but are not limited to, distribution of drugs prescribed by physicians and other health care practitioners, providing information about prescriptions and their use to their patients and customers, advising health care professionals on the prescription and interaction of drug therapies, compounding, pharmaceutical research, hiring and supervision of staff, business operations of pharmacies, administering of vaccinations, etc. The job outlook for pharmacists remains strong nationwide and in Hawai'i. There is currently a shortage of community, clinical and research pharmacists. It is expected that the field of pharmacy will grow at a "faster than average" rate over the next decade ([Bureau of Labor Statistics Occupational Outlook Handbook: Pharmacists](#)). In order to practice as a registered pharmacist (R.Ph.), state licensure is required.

Admission Requirements

To be eligible for consideration, students must complete the following:

- Completion of the prerequisite courses including:



Required Pre-Requisite Courses	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
<i>Total</i>	<i>66</i>

Please Note: The most current listings of prerequisite courses can be found on the [DKICP website](#). Prerequisites are subject to change. 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 hours, 15 semester hours must be allocated to non-remedial science courses.

- Completion of the [PCAT](#) and submission of official scores to [PharmCAS](#). Applicants are encouraged to take the PCAT in July or September of the application year or earlier.
- Completion and submission of the [PharmCAS](#) application including two professional letters of recommendation and applicable fees.
- Completion and submission of the supplemental application to be requested via email by UH Hilo DKICP.

Meeting the minimum qualification requirements does not guarantee admission. All eligible applications are reviewed by the UH Hilo DKICP Admissions Committee which applies multiple criteria to assess applications and select candidates to be reviewed.

UH Hilo DKICP 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 DKICP Office of Student Services. The application review process begins in August 2016 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 DKICP 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 DKICP 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 2016 through May 2017 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.

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Early Decision

DKICP participates in the PharmCAS Early Decision Program which is a binding option for applicants who have decided that a particular pharmacy degree program is their first choice and that they will enroll if accepted. Early Decision applicants may only apply to one pharmacy degree program. Early decision deadline to be determined by PharmCAS (early September of the application cycle). Eligible applicants will be invited to an in-person interview in Hilo during the month of October.

Applicants may be offered early admission, denied admission, or deferred to regular applicant status. If offered admission as an Early Decision applicant, applicants are obligated to accept the offer and they will not be permitted to apply to other PharmCAS institutions. If, however, an applicant is denied admission as an Early Admission applicant or deferred to regular applicant status, they may apply to other PharmCAS institutions for an additional fee.

Curricula

Professional Year 1 Fall Courses (18 credits)

- PHPP 501 Intr Pharm Prac Experiential I (1)
- PHPS 504 Pharmaceutical Immunology (3)
- PHPS 501 Biochemistry - Biomolecules (2)
- PHPS 505 Pharmaceutics I (3)
- PHPP 510 Pharmacy Self Care I (2)
- PHPS 503 Pharmaceutical Calculations (2)
- PHPS 540 Drug Action - Part I (2)
- PHPP 528 Pharmacy Comm & Culture (3)

Professional Year 1 Spring Courses (16 credits)

- PHPP 502 Int Pharm Prac Experiential II (1)
- PHPP 508 Intro to Biostatistics (3)
- PHPS 509 Applied Pathophysiology (3)
- PHPS 502 Biochemistry - Metabolism (2)
- PHPS 506 Pharmaceutics II (3)
- PHPS 511 Pharmacokinetics (3)
- PHPS 541 Drug Action - Part II (2)

Professional Year 2 Fall Courses (17 credits)

- PHPP 503 Intr Pharm Prac Experien III (1)
- PHPP 506 Int Pharm Prac Exp - Retail (1)
- PHPP 514 Evidence-Based Medicine (3)
- PHPP 515 Integrated Therapeutics I (7)
- PHPS 511 Pharmacokinetics (3)
- PHPP 527 Drug Information (2)

Professional Year 2 Spring Courses (17 credits)

- PHPP 504 Intr Pharm Prac Experien IV (1)
- PHPP 520 Pharmacy Law and Ethics (3)
- PHPP 523 Wellness & Disease Prevention (2)
- PHPP 516 Integrated Therapeutics II (7)
- PHPP 519 Health Care Systems (2)
- Elective (2) Choose two credits of electives

Professional Year 3 Fall Courses (16 credits)

- PHPP 505 Intr Pharm Prac Experiential V (1)
- PHPP 507 Int Pharm Practice Exp - VII (1)
- PHPP 522 Pharm Practice Mgmt & Mktng (2)
- PHPP 517 Integrated Therapeutics III (7)



- PHPP 525 Complementary Medicine (3)
- Electives (2). Choose **two** credits of electives

Professional Year 3 Spring Courses (17 credits)

- PHPP 509 Adv Pharm Pract Exp: Medicine (5)
- PHPP 524 Pharmacoeconomics (2)
- PHPP 518 Integrated Therapeutics IV (7)
- PHPP 521 Applied Pharmaceutical Care (3)
- PHPS 591 Basic & Applied Toxicology (3)
- PHPP 533 Pharmacogenomics (2)

Professional Year 4 Courses (37 credits)

Fourth Year (P-4) - Advanced Professional Practice Experiences: 42 weeks

- PHPP 540 Adv Pharm Prac Exp: Ambulatory (6)
- PHPP 541 Adv Pharm Prac Exp: Community (6)
- PHPP 542 Adv Pharm Prac Exp: Medicine (6)
- PHPP 543 Adv Pharm Pract Exp: Hospital (6)
- PHPP 547 APPE - NAPLEX/MPJE Preparation (1)
- PHPP 544 Adv Pharm Pract Exp: Elect I (6)
- PHPP 545 Adv Pharm Prac Exp: Elect II (6)

Electives - (6 credits)

- PHPP 546 Adv Pharm Practice Experience (6)

Electives - (3 credits)

- ECON 430 Quantitative Forecasting (3)
- MGT 490 Strategic Mgt (3)

Electives - (2 credits)

- PHPP 550 History of Pharmacy (2)
- PHPS 550 Genetics in Medicine (2)
- PHPP 531 Survey, Epidem, Qual Methods (1)
- PHPP 567 Rural Health Science Intro (2)
- PHPP 568 Rural Health Science Advanced (2)

Variable (1 or 2 credits)

- PHPP 555 Intro to Veterinary Medicine (1-2)
- PHPP 599 Directed Studies (To Be Arranged)
- PHPS 599 Directed Studies (To Be Arranged)

Electives - (1 credit)

- PHPP 553 Current Topics in Healthcare (1)
- PHPP 557 Personal Finance (1)
- PHPP 554 Zoonotic Diseases (1)
- PHPP 556 Adv Topics in Hypertension (1)
- PHPS 553 Radioactivity in Pharmacy (1)
- PHPP 559 Spanish for Healthcare Profess (1)
- PHPP 560 Pharmacy Leadership (1)
- PHPP 564 Advanced Managed Health Care (1)
- PHPS 554 Herb Med & Hawaiian Med Plants (1)
- PHPS 555 Geographic (Tropical) Medicine (1)
- PHPS 559 Environmental Toxicology (1)
- PHPS 562 Disc & Dev of Blockbuster Drug (1)
- PHPS 563 Curr Adv in Neuropharmacology (1)
- PHPS 565 Genetics & Pharm of Malaria (1)
- PHPS 561 Emerging Trends Drug Discovery (1)
- PHPS 567 Pharmacogenetics (1)
- PHPS 568 Antibiotic Mechanisms & Applic (1)

- PHPS 569 Cancer Prevention (1)
- PHPS 570 Drugs from the Ocean (1)
- PHPP 561 Pharmacy and Therapeutics Comp (1)
- PHPP 530 Basic Research Methods (1)
- PHPP 531 Survey, Epidem, Qual Methods (1)
- PHPP 532 Pharmacy Research (1)
- PHPP 558 Business Admin Overview (1)

Minimum semester hours required for the Doctor of Pharmacy degree:

138 credits.

Health Sciences Research Certificate

Coordinator Deborah Taira, ScD, Associate Professor

Email dtjarez@hawaii.edu

Program Description

This certificate is designed to give Pharm D students an introduction to basic research methods as well as experience completing a research project. Students will receive an introduction to research methodology in pharmacy, including clinical studies, analysis of existing data, program evaluation and big data designs. Students will also receive training in human subjects research and scientific writing. Topics for research projects will vary based on student interest, mentors, and available data.

Writing skills to be covered include:

- Research abstract
- Biosketch
- Publishable paper
- Survey questions for research

Program Mission

This goal is to make PharmD students more competitive for post-graduate residency programs, which are increasingly required for jobs in clinical and academic settings. This program benefits the current curriculum by aligning student coursework to support research activities in both academic departments.

Student Learning Objectives

- Discuss different types of experimental/research designs
- Describe advantages and disadvantages of each design
- Display data in different ways to facilitate understanding of main points
- Interpret different types of graphs
- Demonstrate knowledge of ethical and privacy issues in research by completing CITI training
- Strengthen research-related writing skills through creation of a strong research abstract and poster presentation
- Prepare for a potential research grant submission by completing a NIH biosketch
- Discuss the pros and cons of survey research
- Identify the main theoretical and procedural aspects of qualitative research
- Define qualitative research
- Use the language of qualitative research
- Explore rationale for use of qualitative or naturalistic research methods in clinical, social, and behavioral settings



- Define pharmacoepidemiology
- Utilize existing data to examine an issue in pharmacoepidemiology
- Examine how and why people access pharmacy services
- Determine the best resources for finding cost information for medications
- Measure patient outcomes resulting from pharmacy services or medication use
- Conduct a program evaluation of pharmaceutical services or behavioral interventions

Program Prerequisite Requirements

- Must have completed P1 (first year) in the PharmD program with a GPA of 3.0 or better
- Must maintain a GPA of 3.0 or better to remain in the certificate program
- Must not be on probation

Program Curriculum (21 Credits)

Students must complete 21 credits, including 10 elective credits

Core Courses: (11 Credits)

- PHPP 530 Basic Research Methods (1)
- PHPP 531 Survey, Epidem, Qual Methods (1)
- PHPP 532 Pharmacy Research (1)
- PHPS 599 Directed Studies (To Be Arranged)
- PHPP 544 Adv Pharm Pract Exp: Elect I (6) or PHPP 545 Adv Pharm Pract Exp: Elect II (6)

Courses Taken by all PharmD Students: (10 Credits)

- PHPS 503 Pharmaceutical Calculations (2)
- PHPP 508 Intro to Biostatistics (3)
- PHPP 514 Evidence-Based Medicine (3)
- PHPP 524 Pharmacoeconomics (2)

Healthcare Leadership Certificate

Coordinator: Karen L. Pellegrin, PhD, MBA
Director of Continuing Education and Strategic Planning
Email: karen3@hawaii.edu

Program Description

This certificate program is designed to give PharmD students a basic foundation in business administration, with a concentration in healthcare leadership. Students who complete this program will have a better understanding of the business side of the healthcare industry, particularly in pharmacy practice and the pharmaceutical industry.

Mission

The mission of this certificate program is to produce PharmD graduates who are more competitive for a variety of positions in the job market, particularly those involving pharmacy management, leadership, and innovation.

Student Learning Objectives

1. Describe basic concepts of accounting, financial statements, human resources functions, compensation and incentives, performance management, production and operations, project management,

2. marketing, strategy, organizational culture, corporate social responsibility, and related federal regulations;
2. Design and track variance from a budget
3. Develop, apply, and evaluate simple models for business forecasting
4. Apply the basic knowledge of managerial economics into pricing for profits
5. Analyze a variety of industries and competitive situations within the context of a global market environment.
6. Demonstrate knowledge of healthcare systems, legal and ethical issues in pharmacy, and pharmacoeconomics.
7. Integrate the knowledge from previous courses in the certificate program and demonstrate the appropriate use of this knowledge within an unstructured case.
8. Apply knowledge from previous courses to address a real-world pharmacy leadership issue in an advanced experiential setting.

Program Prerequisite Requirements

- Must have completed P1 (first year) in the PharmD program with a GPA of 3.0 or better
- Must maintain a GPA of 3.0 or better to remain in the certificate program
- Must not be on probation

Requirements (23 Credits)

Students must complete 23 credits, including 14 elective credits

Elective Courses:

- PHPP 558 Business Admin Overview (1)
- PHPP 557 Personal Finance (1)
- PHPP 544 Adv Pharm Pract Exp: Elect I (6) or PHPP 545 Adv Pharm Pract Exp: Elect II (6)
- ECON 430 Quantitative Forecasting (3)
- MGT 490 Strategic Mgt (3)

Courses Taken by all PharmD Students:

- PHPP 519 Health Care Systems (2)
- PHPP 520 Pharmacy Law and Ethics (3)
- PHPP 522 Pharm Practice Mgmt & Mktng (2)
- PHPP 524 Pharmacoeconomics (2)

Rural Health Graduate Certificate (PharmD)

Mission:

This mission of this certificate program is to produce PharmD graduates who are equipped with the knowledge and experience needed to thrive as a pharmacist working in rural settings.

Student learning objectives:

1. Describe basic concepts in rural health science, including measurement, methods, and testing solutions to rural health problems.
2. Analyze rural health issues and make evidence-based recommendations for improvement.
3. Demonstrate knowledge of rural health issues in rural pharmacy practice settings.
4. Apply the knowledge of rural health science to real-world healthcare and community settings.
5. Integrate the knowledge from courses in the certificate program and apply this knowledge to enhance patient care in advanced



experiential rotations.

6. Identify and demonstrate ability to implement solutions to rural health problems.

Required Courses (22 Credits):

- PHPP 567 Rural Health Science Intro (2), P2 year
- PHPP 568 Rural Health Science Advanced (2), P3 year
- Review and approval of PHPP 540 Adv Pharm Prac Exp: Ambulatory (6)- PHPP 545 Adv Pharm Prac Exp: Elect II (6) course placement by department.
- Minimum of 18 APPE credits in Experiential Rotations in rural settings (18 Credits)
 - Ambulatory Care, Community Practice, Medicine, Hospital Pharmacy, and/or Electives) in rural settings such as:
 - Hawaii Island
 - Kauai Island
 - Rural areas of Maui County (i.e., Hana, Lanai, Molokai)
 - Other approved rural sites

Ph.D. in Pharmaceutical Sciences

Program Director: Ghee Tan, Ph.D.

Daniel K. Inouye College of Pharmacy (DKICP)

722 S. A'ohoku St.

Hilo, HI 96720

Email: gheetan@hawaii.edu

University of Hawai'i at Hilo

Daniel K. Inouye College of Pharmacy (DKICP)

Office of Student Services (OSS)

Ph.D. Program Admissions

200 W. Kāwili Street

Hilo, HI 96720

Fax: (808) 933-3889

Email: pharmacy@hawaii.edu

Faculty:

- Julie Adrian, D.V.M. Associate Professor
- Shugeng Cao, Ph.D. Associate Professor
- Leng Chee Chang, Ph.D. Associate Professor
- Mahavir Chougule, Ph.D. Associate Professor, Affiliate Faculty
- Linda Connelly, Ph.D. Associate Professor
- Abhijit Date, Ph.D. Assistant Professor
- Daniela Guendisch, Ph.D. Associate Professor
- Aaron Jacobs, Ph.D. Associate Professor
- Susan Jarvi, Ph.D. Professor and Director, Pre-Pharmacy Program
- Tamara Kondratyuk, Ph.D. Assistant Specialist and Laboratory Manager
- Dana-Lynn Ko'omoa-Lange, Ph.D., Associate Professor
- Ingo Ko'omoa-Lange, Ph.D. Instructor
- Russell J. Molyneux, Ph.D. Affiliate Faculty
- Dianqing Sun, Ph.D. Associate Professor
- Ghee Tan, Ph.D. Associate Professor
- Supakit Wongwiwatthananut, Pharm.D., Ph.D. Professor

Program Description

Utilizing the extraordinary intellectual, biological, physical and cultural diversity of its geographic region as a focus of investigation and study, the University of Hawai'i at Hilo's College of Pharmacy is proud to offer a Ph.D. program in the Pharmaceutical Sciences.

This program, which is the only program of its type in the Pacific region, provides graduate training in the Pharmaceutical Sciences including Medicinal Chemistry, Pharmacology, Pharmaceutics, and Pharmacognosy. It is aimed at students with B.S., M.S., or Pharm.D. degrees, and those currently working in the field. Studies culminate with the award of a Ph.D. in Pharmaceutical Sciences, with an emphasis on natural products discovery and development and their importance in pharmacy and healthcare.

Students will be prepared for senior leadership positions in the pharmaceutical sciences in academia, research, education, government, industry and related fields and become leaders who can identify, research, and solve problems related to the pharmaceutical sciences. The Ph.D. program is designed to foster student development as critical thinkers, team players, self-directed interdisciplinary scholars and communicators.

Mission

The mission of the Ph.D. program in Pharmaceutical Sciences is to train students to be skilled researchers and critical thinkers who will play key leadership roles in furthering the development of the Pharmaceutical Sciences and related fields now and into the future.

Program Goals

- To provide a high-quality graduate program culminating in the award of a Ph.D. in Pharmaceutical Sciences, including the areas of Pharmaceutics, Pharmacognosy, Medicinal Chemistry, and Pharmacology.
- To foster the development of students as critical thinkers, team players, self-directed interdisciplinary scholars, and communicators.
- To prepare students for senior leadership positions in the pharmaceutical sciences in academia, research, education, government, industry, and related fields. These leaders will be able to identify, research, and solve problems related to the pharmaceutical sciences.
- To train students by utilizing the extraordinary intellectual, biological, physical, and cultural assets available on the Island of Hawaii, the State, and the Asia-Pacific region.
- To promote the transfer of cutting-edge technology through developing a community research partnership, process, and protocol for understanding the diversity of natural products originating in Hawaii, the Pacific, and around the world and their applications to healing in a culturally respectful way.

Student Learning Outcomes

At the conclusion of the PhD program a graduate should be able to:

1. Perform scientific research that will advance knowledge in the interdisciplinary field of Pharmaceutical Sciences.
2. Use advanced technological equipment in order to perform quantitative analysis and be able to interpret complex data.
3. Analyze, apply, and present research findings.
4. Prepare, interpret, and critique scientific publications and proposals.
5. Identify which aspects of their individual program may be usefully transferred to some applied research program.
6. Complete the seven stages for a successful PhD in any technical discipline, thereby becoming an independent researcher:
 - Identify a problem/question
 - Form an hypothesis
 - Develop a model
 - Design an experimental strategy to test the hypothesis



- Execute an experimental plan
- Interpret the data against the hypothesis
- Report the results in a dissertation and peer reviewed publications

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. 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 learning
 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 are recommended to 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. Students may have to take additional courses if proficiency cannot be demonstrated.
 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.
 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 the 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 unless the degree was conferred by an institution whose language of instruction is English. International students seeking Graduate Assistant positions with any instructional responsibility must demonstrate proficiency in English, defined as a TOEFL score of at least 600 on paper-based or 100 on internet-based test or its equivalent or an IELTS score of 7.0 or its equivalent. [Graduate Student Employment Policy.](#)
 2. [International Graduate Student Supplemental Information Form.](#)

Further information on the details of fulfilling admissions requirements are available from the Ph.D. Program Admissions Office pharmacy@hawaii.edu, and on the [DKICP Graduate Admissions website.](#)

Graduation Requirements

1. Successful achievement of the requirements for 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 each with a grade no less than a "B" (3.0) and, thereafter, maintenance of a cumulative grade point average of 3.0 or better.
4. Completion of one seminar each year; a minimum grade of "B" (3.0) should be achieved for this presentation. The Proposal Defense and Dissertation Defense seminars will satisfy the seminar presentation requirement for that particular academic year.
5. No later than the fourth semester of the program, successful completion of a written and/or oral Comprehensive Examination to demonstrate competence in the chosen area(s) of Pharmaceutical Sciences.
6. No later than the fifth semester of the program, completion of an original dissertation research proposal, presentation of a public seminar on the student's research proposal, and successful defense in a comprehensive oral examination (Proposal Defense) on the proposal and any other topics that the Graduate Committee deems necessary. 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. Once the student passes the Comprehensive Examination and the Proposal Defense, he/she will be eligible to be admitted to Candidacy for the Ph. D. degree.
7. Successful completion of a dissertation, with enrollment in a minimum of 56 credits of dissertation research (PHPS 799V Directed Studies (To Be Arranged) and PHPS 800 Resrch Dissertation-Phrm Sci (1-15)). Upon completion of the dissertation, a final public seminar and oral dissertation defense (Dissertation Defense) will follow.
8. Completion of at least 96 combined credits of graduate courses and dissertation; including PHPS 700-level and PHPS 800-level courses.
9. The publication of one or more first author research manuscripts in peer-reviewed journals.
10. Compliance with UH Hilo rules and regulations for graduation.

Curricula

To successfully complete the PhD degree candidates must complete; year 1 with a minimum grade of B in each graded course (Minimum GPA = 3.0); after the first year, courses must be completed with a cumulative GPA of no less than 3.0; a minimum of 24 graduate level didactic credits and a minimum of 56 credits of research courses (PHPS 799 and PHPS 800); a minimum of 96 credit hours overall (Minimum cumulative GPA = 3.0).

1. **PhD Year 1 Fall Courses (minimum 12 credits)**
 - PHPS 718 Lab Visits & Supervisor Select (1)
 - PHPS 749 Overview of Pharm Sciences I (2)



- Area-specific courses (9 credits minimum chosen from among the recommended courses below for a specific area and supplemented with other electives as needed)
 - Cancer Biology Emphasis
 - PHPS 703 Cancer Biology (2)
 - PHPS 710 Lab Animal Care, Mgt & Med I (2)
 - PHPS 751 Biochemistry I - Biomolecules (3)
 - PHPS 735 Cell Cycle Progression (2)
 - Or other appropriate electives to make up a minimum of 9 credits
 - Medicinal Chemistry Emphasis
 - PHPS 704 Com Chem & High Throughput Tec (2)
 - PHPS 709 Inst Meth & Struct Elucidation (2)
 - PHPS 713 Organic Medicinal Chemistry I (2)
 - PHPS 717 Med Chem CNS Drugs & Develop (2)
 - Or other appropriate electives to make up a minimum of 9 credits
 - Pharmacognosy Emphasis
 - PHPS 709 Inst Meth & Struct Elucidation (2)
 - PHPS 723 Pharmacognosy (2)
 - PHPS 751 Biochemistry I - Biomolecules (3)
 - Or other appropriate electives to make up a minimum of 9 credits
 - Pharmaceuticals Emphasis
 - PHPS 709 Inst Meth & Struct Elucidation (2)
 - PHPS 755 Advanced Pharmaceuticals I (3)
 - PHPS 733 Aerosol Physics in Medicine (1)
 - Or other appropriate electives to make up a minimum of 9 credits
 - Pharmacology Emphasis
 - PHPS 703 Cancer Biology (2)
 - PHPS 706 Environmental Toxicology (2)
 - PHPS 721 Neuropsychopharmacology (2)
 - PHPS 724 Pharmacology I (3)
 - PHPS 735 Cell Cycle Progression (2)
 - Or other appropriate electives to make up a minimum of 9 credits
- 2. **PhD Year 1 (Qualifying Year) Spring Courses (minimum 12 credits)**
 - PHPS 750 Overview of Pharm Sciences II (2)
 - PHPS 780 Research Seminar (1)
 - PHPS 799 Directed Studies (To Be Arranged)
 - Area-specific courses (5 credits minimum chosen from among the recommended courses below for a specific area and supplemented with other electives as needed)
 - Cancer Biology Emphasis
 - PHPS 711 Lab Animal Care, Mgt & Med II (2)
 - PHPS 720 Nat Prod & Cancer Chemoprevent (2)
 - PHPS 729 Receptor Theory & Signal Trans (2)
 - PHPS 752 Biochemistry II - Metabolism (3)
 - PHPS 734 Biotechnology Laboratory (2)
 - Or other appropriate electives to make up a minimum of 5 credits
 - Medicinal Chemistry Emphasis
 - PHPS 714 Organic Medicinal Chemistry II (2)
 - PHPS 720 Nat Prod & Cancer Chemoprevent (2)
 - Or other appropriate electives to make up a minimum of 5 credits
 - Pharmacognosy Emphasis
 - PHPS 702 Bio Dev: Prin&Prac in Drug Disc (1)
 - PHPS 720 Nat Prod & Cancer Chemoprevent (2)
 - PHPS 730 Sample Coll, Documnt & Presrv (1)
 - PHPS 752 Biochemistry II - Metabolism (3)
 - Or other appropriate electives to make up a minimum of 5 credits
 - Pharmaceuticals Emphasis
 - PHPS 756 Advanced Pharmaceuticals II (3)
 - Or other appropriate electives to make up a minimum of 5 credits
 - Pharmacology Emphasis
 - PHPS 725 Pharmacology II (3)
 - PHPS 729 Receptor Theory & Signal Trans (2)
 - Or other appropriate electives to make up a minimum of 5 credits
- 3. **PhD Year 2 Fall Courses (minimum 12 credits)**
 - PHPS 799 Directed Studies (To Be Arranged) (minimum 7 credits)
 - Electives as needed, electives plus PHPS 780 Research Seminar (1) PHPS 799 should total a minimum of 12 credits
- 4. **PhD Year 2 Spring Courses (minimum 12 credits)**
 - PHPS 780 Research Seminar (1)
 - PHPS 799 Directed Studies (To Be Arranged) (minimum 7 credits)
 - Electives as needed, electives plus PHPS 799 should total a minimum of 12 credits
- 5. **PhD Year 3 Fall Courses (minimum 12 credits)**
 - PHPS 780 Research Seminar (1)
 - PHPS 799 Directed Studies (To Be Arranged) (minimum 7 credits)
 - Electives as needed, electives plus PHPS 780 Research Seminar (1) and PHPS 799 should total a minimum of 12 credits
- 6. **PhD Year 3 Spring Courses (minimum 12 credits)**
 - PHPS 799 Directed Studies (To Be Arranged) (minimum 7 credits)
 - Electives as needed, electives plus PHPS 799 should total a minimum of 12 credits
- 7. **PhD Year 4 Fall Courses (minimum 12 credits)**
 - PHPS 799 Directed Studies (To Be Arranged) (minimum 7 credits)
 - Electives as needed, electives plus PHPS 799 should total a minimum of 12 credits
- 8. **PhD Year 4 Spring Courses (minimum 12 credits)**
 - PHPS 799 Directed Studies (To Be Arranged) (minimum 6 credits)
 - For final semester in program: PHPS 800 Resrch Dissertation-Phrm Sci (1-15) (1 credit required)
 - Electives as needed, electives plus PHPS 799 and PHPS 800 should total a minimum of 12 credits
- 9. **PhD Year 5 and beyond are taken on an as required basis. (minimum 12 credits)**
 - PHPS 799 Directed Studies (To Be Arranged) (minimum 6 credits)
 - For final semester in program: PHPS 800 Resrch Dissertation-Phrm Sci (1-15) (1 credit required)
 - Electives as needed, electives plus PHPS 799 and PHPS 800 should total a minimum of 12 credits

Electives-Listed Alphabetically

Alpha/Number	Course Title	Credits
PHPS 701	Apoptosis and Angiogenesis in Disease Processes and Drug Development	1
PHPS 702	Bioassay Development: Principles & Practices in Drug Discovery	3
PHPS 703	Cancer Biology	2



Alpha/Number	Course Title	Credits
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 <i>in vivo</i> 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 I	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 and Preservation	1
PHPS 731	Toxicants and Toxicity	3
PHPS 732	Toxic Plant Natural Products and Their Therapeutic Potential	2
PHPS 733	Advanced Aerosol Physics in Medicine: Inhaled Drug Therapy	1
PHPS 734	Biotechnology Laboratory	2
PHPS 735	Cell Cycle Progression and Apoptosis, Methodological Approaches	2

M.S. in Tropical Conservation Biology and Environmental Science

Program Chair: Becky Ostertag, Ph.D.,

Email: ostertag@hawaii.edu

Assistant Program Chair: Patrick Hart, Ph.D.,

Email: pjhart@hawaii.edu

Natural Sciences Division Office:

Office: Life Sciences, Room 2

Tel: (808) 932-7506/7507

Program Description

The primary purpose of the Master of Science in Tropical Conservation Biology and Environmental Science is to provide graduate training in conservation biology and environmental science to those with baccalaureate degrees and those currently working in the field. The program will utilize the extraordinary biological, physical, and cultural complexity of the island of Hawai'i as a focus of investigation and study. The program will prepare students for technical positions and for entry into Ph.D. programs in related fields.

Mission

- Foster knowledge of current trends and issues in conservation biology and environmental sciences including basic and applied research and natural resource problems;
- Provide participants with experiences in conceptual and technical research in ecology, evolutionary genetics, geographic analysis, environmental monitoring and assessment in marine and terrestrial environments;
- Promote research and scholarly activities that will enable participants to enter the scientific research community.

Student Learning Outcomes

Graduates of the program will be able to:

- Perform scientific research in the interdisciplinary field of conservation biology and environmental science;
- Develop skills in natural resource and protected area management;
- Use advanced technological equipment, perform quantitative analysis, and interpret complex data;
- Present scientific results in oral and written publications; and
- Interpret and critique professional scientific literature.

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 290 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 TCBS 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.

M.S. TCBS Check List

(Reminder: Priority application deadline is December 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 December 1
- Official TOEFL score report, if required
- Verification of financial status (for international applicants) (see [Forms](#))

Frequently Asked Questions

- 1. Do I need to find a faculty sponsor?**
Yes, you are required to contact individual faculty members whose research interest are similar to your own and who agree to sponsor your application to the program. It is recommended that you begin faculty contact well before the application deadline. Faculty sponsorship is required for program acceptance.
- 2. How do I find a faculty sponsor?**
TCBS Faculty information can be found within this page and on the [TCBS Website](#)
- 3. How long does it take to complete the program?**
The program is designed to be completed in 3-4 semesters, with additional time needed for writing the thesis or completing the internship.
- 4. What are the entrance requirements?**
See Check List and Admission Requirements sections.
- 5. Do I have to take the GRE?**
Yes. Applicants are required to submit General GRE scores to UH Hilo. (UH Hilo code: 4869)
- 6. Can I transfer credits?**
Yes, up to 6 credits, subject to program approval.
- 7. When will the program start?**
Classes for new students begin in the fall of each year.

- 8. How much will it cost to live in Hilo?**
In-state students should budget approximately \$25,000 per year for tuition, books, housing, food, and personal expenses; out-of-state students should budget about \$30,000.
- 9. Is financial aid available?**
Graduate assistantship positions may be available (Contact program chair, Dr. Ostertag: (ostertag@hawaii.edu)). You may also contact faculty and participating agencies for financial assistance. Students interested in assistantship positions must have submitted the FAFSA; students who meet the deadline for financial aid will have priority for assistantship positions and other aid. Contact the UH-Hilo [Financial Aid Office](#) for more information.
- 10. Do I need to write a Master's Thesis?**
Plan A requires course work and a thesis of original research. Plan B requires course work, an internship, and research papers.

Program Curriculum

Total Credits Required:

- Plan A = 30 credits
- Plan B = 36 credits

Core Courses (8) credits required for all M.S. TCBS students:

- CBES 600 Conservatn Biol & Environ Sci (3)
- CBES 601 CBES Field & Laboratory Method (3)
- CBES 602 Research Seminar in TCBS (1)
- CBES 603 Natural Resource Mgt Seminar (1)

Elective Courses ¹:

- Plan A: 16 elective credits of 600-level CBES courses.
- Plan B: 25 elective credits of 600-level CBES courses.

¹ A maximum of 6 credits of 400-level courses may count toward these elective credits.

- CBES 609 Theory/Apps Landscape Ecology (3)
- CBES 610 Environmental Chem Analysis (3)
- CBES 615 Global Environmental Change (3)
- CBES 620 Rrsch Techniq Molecular C Biol (3)
- CBES 630 Nearshore Monitoring & Analysi (3)
- CBES 633 Biodiversity (3)
- CBES 635 Physical Environment of Ecosys (3)
- CBES 640 Adv Remote Sensing/Digital Ima (3)
- CBES 645 Apply Social Sci to Marine/Coa (3)
- CBES 650 Oceanographic Monitoring & Ana (3)
- CBES 665 Environmental Toxicology (3)
- CBES 660 Molecular Ecology (3)
- CBES 670 Geog Info Sys & Visualization (3)
- CBES 675 Conservation Genetics (3)
- CBES 677 Quantitative Ecology (3)
- CBES 680 Adv Stats Analysis & Rsrch Des (3)
- CBES 681 Spatial Data Analysis/Modeling (3)
- CBES 685 Behavioral Ecol & Evol Analyse (3)

Other Courses:

- CBES 690 Internship (3)
- CBES 694 Special Topics in Subject Matter (To Be Arranged)
- CBES 699 Directed Studies (To Be Arranged)
- CBES 700 Thesis Research (1-6)



Faculty

- Jason Adolf, Ph.D., Marine Science
- Norman Arancon, Ph.D., Agriculture
- Jonathan Awaya, Ph.D., Biology
- James Beets, Ph.D., Marine Science
- Kathryn Besio, Ph.D., Anthropology
- Leng Chee Chang, Ph.D., Pharmacy
- Steven Colbert, Ph.D., Marine Science
- Marta deMaintenon, Ph.D., Marine Science
- Jesse Eiben, Ph.D., Entomology
- Armando García-Ortega, Fisheries and Aquaculture
- Joseph Genz, Ph.D., Anthropology
- Mazen Hamad, Ph.D., Chemistry
- Patrick Hart, Ph.D., Biology
- Maria Haws, Ph.D., Aquaculture
- Kevin Hopkins, Ph.D., Aquaculture
- Susan Jarvi, Ph.D., Biology
- Marina Karides, Ph.D., Sociology
- Matthew Knope, Ph.D., Biology
- Yiqing Li, Ph.D., Forestry
- Chris Lu, Ph.D., Animal Science
- Steven Lundblad, Ph.D., Geology
- Sarah Marusek, Ph.D., Political Science
- Bruce Mathews, Ph.D., Soil Science & Agronomy
- William Mautz, Ph.D., Biology
- Karla McDermid Smith, Ph.D., Marine Science
- Jon-Pierre Michaud, Ph. D., Chemistry
- Jené Michaud, Ph.D., Geology
- Peter Mills, Ph.D., Anthropology
- Cedric Muir, Ph.D., Biology
- Stan Nakanishi, Ph.D., Biology
- Rebecca Ostertag, Ph.D., Biology
- Adam Pack, Ph.D., Psychology & Biology
- Ryan Perroy, Ph.D., Geography
- Jonathan Price, Ph.D., Geography
- Michael Shintaku, Ph.D., Plant Pathology
- Shihwu Sung, Ph.D., Applied Engineering
- Jolene Sutton, Ph.D., Biology
- Misaki Takabayashi, Ph.D., Marine Science
- Li Tao, Ph.D., Biology
- Jason Turner, Ph.D., Marine Science
- Tracy Wiegner, Ph.D., Marine Science
- 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 Gardina, 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, USDAPacific Basin Agricultural Research Center
- Randall Kosaki, Ph.D. Deputy Superintendent, Pahahanaumokuakea

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



- 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 Kalellokelani 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

- Education and Teaching:
 - [Education \(ED\) Post-Baccalaureate Courses](#)
- Heritage Management:
 - [Anthropology \(ANTH\) Post-Baccalaureate Courses](#)
- Ka Haka 'Ula O Ke'elikōlani:
 - [Hawaiian Language \(HAW\) Post-Baccalaureate Courses](#)
 - [Hawaiian Studies \(HWST\) Post-Baccalaureate Courses](#)
 - [Ke'elikōlani Education \(KED\) Post-Baccalaureate Courses](#)
 - [Ke'elikōlani Indigenous Language \(KLAN\) Post-Baccalaureate Courses](#)
 - [Ke'elikōlani Indigenous Studies \(KIND\) Post-Baccalaureate Courses](#)
 - [Ke'elikōlani Linguistics \(KLIN\) Post-Baccalaureate Courses](#)
- Nursing:
 - [Nursing \(NURS\) Post-Baccalaureate Courses](#)
- Pharmacy:
 - [Pharmacy Practice \(PHPP\) Post-Baccalaureate Courses](#)
 - [Pharmaceutical Science \(PHPS\) Post-Baccalaureate Courses](#)
- Psychology:
 - [Psychology \(PSY\) Post-Baccalaureate Courses](#)
- Tropical Conservation Biology & Environmental Science:
 - [Tropical Conservation Biology & Environmental Science \(CBES\) Post-Baccalaureate Courses](#)

How to read the course descriptions

Courses are described using the following format:

①CRS ②NUM③Title④(cr.)⑤(contact hrs) ⑥Full course description.
⑦Pre: pre-requisites. ⑧(Same as X-List) ⑨(Attributes: ATTR)

1. Course subject
2. Course number
3. Course title
4. Number of semester hours (credits)
5. Contact hours type(s) if non-lecture
6. Full description of the course.
7. (if applicable) Prerequisites, co-requisites, recommended preparation or other requirements
8. (if applicable) Cross-listed courses (equivalent courses offered through another subject heading)
9. (if applicable) [General Education](#) Attributes

Special notations used for credits 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.

Additional Courses

Also see the list of [undergraduate courses](#).

Anthropology (ANTH) Graduate Courses

College of Arts and Sciences (CAS)

ANTH 500 Masters 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.

ANTH 600 Thesis Design, Method, Theory (3) Seminar on the mechanics of completing a thesis. Theoretical and applied frameworks of heritage management, essential components of a theoretically founded and searchable research questions, community goals, standards for writing a thesis.

ANTH 601 Ethics of Heritage Management (3) Ethical issues raised by archaeological research, data curation and preservation, and public visibility. Global review of laws and ethical codes related to the practice of heritage management as an academic discipline, colonialism and nationalism, looting and the art market, material culture, public engagement and community based research, identity and the world system, and issues of group representation in popular media.

ANTH 602 Historic Preservation Laws (3) Paired with ANTH 389 (Cultural Resource Management). Major issues of Heritage Management legislation and the structure of federal and state programs. We'll review some of recent court cases in the U.S. and Pacific Nations. Civil suits over historic preservation. Graduate students will work with ANTH 389 students in the design and implementation of their community based-research.

ANTH 603 Qualitative & Quant. Methods (3) Overview of methods used to interpret anthropological fieldwork. Discussion of research design, sampling, scales of analysis, differences between qualitative analysis and quantitative analysis.

ANTH 611 Cultural Impact Assessments (3) Introduction to applied ethnographic studies in Hawaii, including cultural impact assessments, ethnohistoric studies, regulations, ethics and politics of community-based consultation and research; research in historic-era documents, ethnographies, maps, previous archaeological studies, and texts written in the Hawaiian language.

ANTH 612 Indigenous Museum Studies (3) Paired with the undergraduate course ANTH 470 (Museology). Community museum development with a focus on indigenous perspectives of heritage and stewardship. Grant-writing, collections documentation and management, exhibit planning, and public engagement. Pre: ANTH 600, ANTH 601, ANTH 602.

ANTH 613 Human Paleoecology (3) Methods and theories pertaining to understanding ancient human interactions with ecosystems, including effects of human colonization on island environments, species introductions and extinctions, geomorphological change and studies of other anthropogenic processes. Pre: ANTH 600, ANTH 601, ANTH 602.

ANTH 614 Submerged Cultural Resources (3) Overview of conservation and management issues related to submerged cultural resources with specific attention given to the Abandoned Shipwrecks Act, Admiralty Law, and other regulatory factors pertaining to the management of submerged resources in the Hawaiian Archipelago and the Pacific in general. An overview of methodological issues and ongoing submerged resource issues are discussed. Pre: ANTH 600, ANTH 601, ANTH 602.

ANTH 623 Archaeology of Oceania (3) Archaeological overview of cultures of the Pacific both before and after Western contact with an emphasis on research being conducted as a result of regional heritage management programs. Pre: ANTH 600, ANTH 601, ANTH 602.

ANTH 624 Archaeology of Hawaii (3) History, theory, and practice of archaeology in the Hawaiian Islands. Development of the discipline, including ethics and politics, and contemporary Kanaka Maoli concerns. Theoretical topics include the emergence of social complexity, political economy, monumentality, craft production, agriculture and gender relations, and archaeoastronomy. Pre: ANTH 600, ANTH 601, ANTH 602.

ANTH 625 Pacific Heritage Management (3) Overview to indigenous heritage management in the Pacific. International conventions and world heritage sites, national historic preservation law, community-based cultural revival projects, and collaborative research and preservation. Pre: ANTH 600, ANTH 601, ANTH 602.

ANTH 631 Oral History Research (3) Ethics of applied ethnographic and participatory research, interview protocols, methods of listening, observing and recording, and approaches to interpretive analysis. Methods of interviewing and recording, including the analysis of recorded transcripts while addressing the broader issues that surround oral history and applied ethnographic research, including the epistemological underpinnings of qualitative methods. Pre: ANTH 600, ANTH 601, ANTH 602.

ANTH 632 Paleobotanical Methods (3) The identification and analysis of plant remains, particularly in relationship to paleoethnobotany in the Pacific Islands. Palynology, phytolith analysis, starch grain identification, wood charcoal identification. Pre: ANTH 600, ANTH 601, ANTH 602.

ANTH 633 Material Conservation (3) Conservation issues that affect the long-term curation of cultural material. Preservation methods related to paper, textiles, bark cloth, waterlogged objects, ferrous metals, and an assortment of other materials. Special emphasis is placed on working with, and providing stewardship for indigenous cultural materials. Pre: ANTH 600, ANTH 601, ANTH 602, ANTH 612.

ANTH 634 Lithic Analysis (3) Analytical methods applied to stone artifacts (lithics) from cultural sites and museum collections. History of lithic analyses in archaeology; current analytical techniques; tool production technologies; use-wear. Course content is intended to be applied to thesis projects; students work with undergraduates in ANTH 484 (stone tools analysis). Pre: ANTH 600, ANTH 601, ANTH 602.

ANTH 635 Human Osteology (3) Analytical methods used in physical and biological anthropology. Practical skills related to physical anthropology in the context of heritage management. Emphasis on



ethically grounded research in the context of indigenous heritage. Pre: ANTH 600, ANTH 601, ANTH 602.

ANTH 682 Archaeological Field Methods (3-5) (lecture/lab)

Archaeological methods including research design mapping and excavation, and laboratory methods. Normally taught as a summer session course. Credit varies depending on length of field projects (4-6 weeks, 8hrs./day). Pre: ANTH 110; ANTH 600, ANTH 601, ANTH 602.

ANTH 690 Heritage Management Internship (3) (a) Archaeology; (b)

Museum Studies; (c) Burials Program; (d) Cultural Impact Assessments. Placement and experience in public, private, and/or government agencies involved in heritage management plus completion of related research projects. Pre: ANTH 600, ANTH 601, ANTH 602. May be repeated for credit.

ANTH 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. Pre: ANTH 600, ANTH 601, ANTH 602.

ANTH x94 Special Topics in Subject Matter (Arr.) 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.) Statement of planned reading or research required. Pre: instructor's consent.

Additional Courses

Also see the [ANTH undergraduate-level courses](#).

Psychology (PSY) Graduate Courses for the Master of Arts in Counseling Psychology

College of Arts and Sciences (CAS)

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) (other) 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 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) (lecture/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) (other) Supervised experience in a counseling setting, including 100 hours of supervised client contact. Repeatable if different field placement. Pre: PSY 602, 603 and consent of instructor.

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 & Cultur 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 657 Psychopharmacology (3) This course will offer a discussion of psychopathology from a biological perspective including the neurochemical, neuroanatomical, and genetic causes of psychological disease. Emphasis will be placed on the pharmacotherapeutic treatment of psychopathology. Indications, contraindications, effects, and side effects of commonly prescribed psychopharmacological medications will be discussed.

PSY 659 Internship (9) (other) Supervised clinical experience in community practice counseling settings, including 200 hours of supervised client contact. Pre: PSY 640 and instructor's consent. (Attributes: ALEX)

PSY 693 Cog Behavior Therapy Adult (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, couples issues, substance abuse, and personality disorders. Discussions and Practice of the third wave behavior therapy including Acceptance and Commitment Therapy and Mindfulness Based Stress Reduction.

PSY 695 CBT for Children and Families (3) This is an advanced skills course on the application of cognitive and behavioral theory to treatment of child and adolescent psychological disorders. This course will briefly cover the theoretical and empirical foundation for cognitive and behavioral approaches and the use of empirical data in treatment selection and measuring outcomes. The majority of the course will cover the practical application of specific cognitive and behavioral techniques for children and adolescents and their families. Pre: PSY 624 or instructor permission.

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.) 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.) Statement of planned reading or research required. Pre: instructor's consent.

Additional Courses

Also see the [PSY undergraduate-level courses](#).

Education (ED) Graduate Courses

College of Arts and Sciences (CAS)

ED 500 Master's Plan Studies (1) (other)* 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) Teacher leader focused course. 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. Includes improving outreach and collaboration with families and community.

ED 602 Technology in Education (3) Teacher leader focused course. Selection, evaluation and utilization of instructional materials for systematic achievement of curriculum goals; investigation of innovative technological advances for use in teaching and training. consent of instructor. Promoting/facilitating improvements in learning for teachers and students. Pre: acceptance into the M.Ed. program or



ED 608A Action Research I (3) 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 consent of instructor.

ED 608B Action Research II (3) Advanced academic study and writing processes for analyzing and evaluating current educational research articles. A synthesis and application of research skills which culminates in an original research proposal. Pre: ED 608A or instructor's consent.

ED 608C Action Research III (3) Principles of research methodology and analysis as applied to field research. Pre: ED 608A and B or consent of instructor.

ED 610 Foundations Of Education (3) Teacher leader focused course. 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. Includes advocating for student learning and the profession. 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 616 Assess & Evaluation in Ed (3) Teacher leader focused course. systematic study of the theory of measurement, assessment and evaluation in educational settings. Promotes the use of assessments for classroom and school improvements. Pre: acceptance into the M.Ed. program or consent of instructor

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 consent of instructor.

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 consent of instructor.

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) Teacher leader focused course. 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. Focuses on continuous professional development and building strong

home/school connections. Pre: acceptance into the M.Ed. program or consent of instructor

ED 622 School Curriculum (3) Teacher leader focused course. 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) (other) Teacher leader focused course. Culminating study in trends, interdisciplinary teaching. Capstone course for Teacher research, and problems of implementation in or instructor's consent Leadership program. Pre: acceptance into the M.Ed. Program

ED 635 Adv Instructional Strategies (3) Teacher leader focused course. A critical examination of newest trends in instruction. Bridges the gap between academic research and classroom implementation. 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 (1) 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 (2) 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.

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 Teaching in Hawaii's Schools (1) Introduction to culture-based instructional practice, including overview of Na Hopena A'o, to integrate Hawaiian history, language, and culture in effective planning, content knowledge, and assessment of student learning experiences. Pre: Admission to the Masters of 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.) (10) 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.) (10) Statement of planned reading or research required. Pre: instructor's consent.

Hawaiian Language (HAW) Graduate Courses

Ka Haka 'Ula O Ke'elikōlani/College of Hawaiian Language (KHUOK)

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 are marked with an initial K (for Ke'elikōlani) followed by an appropriate alpha, e.g. HAW (Hawaiian), HWS (Hawaiian Studies), IND (Indigenous Studies), ANT (Anthropology), ED (Education), etc.



HAW 500 Master's Plan Studies (1) (other) 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: Admissions to MA program in Hawaiian Language and Literature. Recommended: KHWS 463, 463; LING 331, 432, and 442.

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: Admission to MA program in Hawaiian Language and Literature. Recommended: KHAW 453, 454; LING 321.

HAW 690 Study in Hawn Spking 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) (other) Research and writing of thesis. Pre: HAW 630

HAW x94 Special Topics in Subject Matter (Arr.) 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.) Statement of planned reading or research required. Pre: instructor's consent.

Additional Courses

Also see the [HAW undergraduate-level courses](#).

Hawaiian Studies (HWST) Graduate Courses

[Ka Haka 'Ula O Ke'elikōlani/College of Hawaiian Language \(KHUOK\)](#)

Built upon a core commitment to Hawaiian language and culture

**Generated: Monday, April 23, 2018,
8:16am**

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 are marked with an initial K (for Ke'elikōlani) followed by an appropriate alpha, e.g. HAW (Hawaiian), HWS (Hawaiian Studies), IND (Indigenous Studies), ANT (Anthropology), ED (Education), etc.

HWST 661 Advanced Hawn Music (3) Examination of indigenous and foreign forms found in acculturated Hawaiian music. Pre: Admission to MA program in Hawaiian Language and Literature. Recommended: KHWS 462, 463.

HWST 662 Applied Hawaiian Chant (3) Applied study of the performance of various Hawaiian chant styles. Pre: Admission to MA program in Hawaiian Language and Literature. Recommended: KHWS 462, 463, 473, 474.

HWST 663 Traditional Hawn Literature (3) Focuses on indigenous oral and written literature forms and their relationship to folk tales. Pre: Admission to MA program in Hawaiian Language and Literature. Recommended: KHWS 462, 463.

HWST 664 European Influenced Hawn Lit (3) Hawaiian literature developed on European models such as biographies, late nineteenth-century histories and journals. Pre: Admission to MA program in Hawaiian Language and Literature. Recommended: KHWS 462, 463.

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: Admission to MA program in Hawaiian Language and Literature. Recommended: KHWS 463; ANTH 385, HWST 213, 663.

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.) 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.) Statement of planned reading or research required. Pre: instructor's consent.

Additional Courses

Also see the [HWST undergraduate-level courses](#).

Ke'elikōlani Education (KED) Graduate Courses

[Ka Haka 'Ula O Ke'elikōlani/College of Hawaiian Language \(KHUOK\)](#)

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 are marked



with an initial K (for Ke'elikōlani) followed by an appropriate alpha, e.g. HAW (Hawaiian), HWS (Hawaiian Studies), IND (Indigenous Studies), ANT (Anthropology), ED (Education), etc.

KED 550 Coop Tchg Sem Maui Ola (2) (other) 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) (other) Seminar in which students explore and choose a thesis topic or applied project topic.

KED 641 Hawaiian Medium Field Exp I (9) (other) 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) (other) 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) (other) 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) (other) 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) (other) 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) (other) 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) (other) 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) (other) 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.) 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.) Statement of planned reading or research required. Pre: instructor's consent.



Additional Courses

Also see the [KED undergraduate-level courses](#).

Ke'elikōlani Indigenous Language (KLAN) Graduate Courses

[Ka Haka 'Ula O Ke'elikōlani/College of Hawaiian Language \(KHUOK\)](#)

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 are marked with an initial K (for Ke'elikōlani) followed by an appropriate alpha, e.g. HAW (Hawaiian), HWS (Hawaiian Studies), IND (Indigenous Studies), ANT (Anthropology), ED (Education), etc.

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.) 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.) Statement of planned reading or research required. Pre: instructor's consent.

Additional Courses

Also see the [KLAN undergraduate-level courses](#).

Ke'elikōlani Indigenous Studies (KIND) Graduate Courses

[Ka Haka 'Ula O Ke'elikōlani/College of Hawaiian Language \(KHUOK\)](#)

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 are marked with an initial K (for Ke'elikōlani) followed by an appropriate alpha, e.g. HAW (Hawaiian), HWS (Hawaiian Studies), IND (Indigenous Studies), ANT (Anthropology), ED (Education), etc.

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) (other) Research and writing of thesis. Pre: Permission of college and instructor.

KIND 730 Rsch Meth Hwn Ind Lang Culture (3) (other) Seminar in which students explore and choose a dissertation topic.

KIND 800 Doctoral Dissertation Research (1-6) (other) Research and writing of dissertation. Pre: Permission of college and instructor.

KIND x94 Special Topics in Subject Matter (Arr.) 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.) Statement of planned reading or research required. Pre: instructor's consent.

Additional Courses

Also see the [KIND undergraduate-level courses](#).

Ke'elikōlani Linguistics (KLIN) Graduate Courses

[Ka Haka 'Ula O Ke'elikōlani/College of Hawaiian Language \(KHUOK\)](#)

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 are marked with an initial K (for Ke'elikōlani) followed by an appropriate alpha, e.g. HAW (Hawaiian), HWS (Hawaiian Studies), IND (Indigenous Studies), ANT (Anthropology), ED (Education), etc.

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.) 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.) Statement of planned reading or research required. Pre: instructor's consent.

Nursing (NURS) Graduate Courses

College of Arts and Sciences (CAS), School of Nursing

NURS 500 Masters 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.

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) (lecture/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 know- ledge 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) (lecture/other) 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 and evaluation of disease and prevention 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 621 Practice Residency Elective (3-5) (lab) This clinical residency elective is designed for DNP students to add clinical hours after finishing required clinical coursework. The clinical residency, under the supervision of a preceptor and UHH SON faculty, emphasizes culturally appropriate evidence-based practice, consultation, research and evaluation consistent with the APRN role. Three to five (3-5) semester hours of supervised practicum hours (135-225 clock hours) will be approved. This course is repeatable up to 10 credit hours.

NURS x94 Special Topics in Subject Matter (Arr.) 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.) Statement of planned reading or research required. Pre: instructor's consent.

Additional Courses

Also see the [NURS undergraduate-level courses](#).

Pharmacy Practice (PHPP) Post-Baccalaureate Courses

Daniel K. Inouye College of Pharmacy (DKICP)

PHPP 501 Intr Pharm Prac Experiential I (1) (other) 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. (Attributes: ALEX, GCC)

PHPP 502 Int Pharm Prac Experiential II (1) (other) 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. (Attributes: ALEX)

PHPP 503 Intr Pharm Prac Experien III (1) (other) 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. (Attributes: ALEX, GCC)

PHPP 504 Intr Pharm Prac Experien IV (1) (other) 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. (Attributes: ALEX)

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 (Attributes: ALEX, GCC)

PHPP 506 Int Pharm Prac Exp - Retail (1) (other) This course is third in a sequential series. Content encompasses an introduction to pharmacy practice in a community setting through observational and direct delivery of care to patients. Types of patients encountered-adolescents, adult and geriatric patients in retail/community setting. All students must begin the application process for a valid Hawai'i intern license. (Attributes: ALEX)

PHPP 507 Int Pharm Practice Exp - VII (1) (other) 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, medication therapy management (MTM) services and disease state management.

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) (other) 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 Pharmacy Self Care I (2) This course is the introduction to the integrated therapeutics sequence which is the core of the pharmacy curriculum, combining therapeutic knowledge with the application of pharmaceutical care. This course is an 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: Admissions to PharmD Program.

PHPP 511 Pharmacy Self Care II (2) This course continues the in-depth examination of self-care and over-the-counter (OTC) medications, and development of Top 200 prescription drug knowledge, begun in PHPP 510. Additionally, this course provides a foundation for organizing patient-specific information necessary in the management of medical conditions, as well as identifying and interpreting laboratory test values commonly used in the management of medical conditions, in preparation for the Integrated Therapeutics course series. Pre: Admissions to the PharmD program.

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) (lecture/other) 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) (lecture/other) 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 (2) This course introduces pharmacy students to the basic concepts, terminology, and applications of pharmacoeconomics and its usefulness in making informed decisions 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. (Attributes: 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 Comm & Culture (3) This course serves as an introduction to pharmacy practice. The multi-cultural State of Hawai'i will serve as a practical laboratory for students to begin practicing the skills necessary to provide pharmaceutical care. During the first portion of the course, video presentations, vignettes, readings and classroom activities will be used to highlight aspects of cultural awareness and sensitivity important to successful contemporary pharmacy practice. Pre: Admission to the Pharm D.

PHPP 530 Basic Research Methods (1) This course is designed to give students an introduction to basic research methods, including measurement and designs as well as research ethics and writing skills for research. This course is required for pharmacy students in the Certificate Program in Health Science Research.

PHPP 531 Survey, Epidem, Qual Methods (1) This course is designed to give students an introduction to survey, epidemiology, and qualitative research methods. This course is required for students enrolled in the Health Science Research certificate program.

PHPP 532 Pharmacy Research (1) This course is designed to give students an introduction to research methodology in pharmacy practice, including program evaluation and big data designs. This course is required for students enrolled in the Health Sciences Research certificate program.

PHPP 533 Pharmacogenomics (2) Pharmacogenomics is the study of genetics variations that may influence an individual's response to drug therapy. Knowing whether a patient carries any of these genetic variations can help prescribers and pharmacists individualize drug therapy, decrease the chance for adverse drug events, and increase therapy effectiveness.

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. (Attributes: ALEX)

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. (Attributes: ALEX)

PHPP 542 Adv Pharm 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. (Attributes: ALEX)

PHPP 543 Adv Pharm Pract Exp: Hospital (6) (other) 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. (Attributes: ALEX)

PHPP 544 Adv Pharm Pract Exp: Elect I (6) (other) 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. (Attributes: ALEX)

PHPP 545 Adv Pharm Prac 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. (Attributes: ALEX)

PHPP 546 Adv Pharm Practice Experience (6) (other) This course is an advanced pharmacy practice experiential 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 547 APPE - NAPLEX/MPJE Preparation (1) The purpose of this course is to introduce the pharmacy students to the North American Pharmacist Licensure Examination (NAPLEX) and the Multistate Pharmacy Jurisprudence Examination (MPJE) used by the National Association of Boards of Pharmacy (NABP) as part of the assessment of a pharmacy graduate's competence to practice as a pharmacist, and to help the student prepare for his/her licensure examinations

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 558 Business Admin Overview (1) This course will provide an overview of the basic concepts and functions involved in managing a business, including accounting, human resource management, production and operations management, organizational behavior and culture, and project management.

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 567 Rural Health Science Intro (2) Introduction to basic concepts in rural health science, including measurement, methods, and testing solutions to rural health problems.

PHPP 568 Rural Health Science Advanced (2) (lab) In-depth consideration and analysis of special topics in rural health science to advance student thinking and application of the topics covered in the introductory course.

PHPP x94 Special Topics in Subject Matter (Arr.) 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.) Statement of planned reading or research required. Pre: instructor's consent.

Pharmaceutical Science (PHPS) Post-Baccalaureate Courses

Daniel K. Inouye College of Pharmacy (DKICP)

PHPS 501 Biochemistry - Biomolecules (2) 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 (2) "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) (lecture/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) (lecture/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 509 Applied Pathophysiology (3) (lecture/lab) 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. This course will review the pathophysiology of the major disease states giving students the background knowledge necessary to understand subsequent therapeutics classes.

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 540 Drug Action - Part I (2) This 2 credit, 30 lecture, course will draw on the basic principles of drug design, development and drug action (medicinal chemistry and pharmacology) to provide an introduction to the basics of the pharmaceutical sciences. Some of, but not all, the areas covered include: Introduction to medicinal chemistry and pharmacology, physicochemical properties of compounds including basic organic functional group chemistry, drug targets, drug target interactions, and the architecture of drugs. Pre: First year standing in DKICP, not repeatable for credit.

PHPS 541 Drug Action - Part II (2) This 2 credit, 30 lecture, course will draw on the basic principles of drug design, development and drug action (medicinal chemistry and pharmacology) to provide an introduction to the basics of the pharmaceutical sciences. Some of, but not all, the areas covered include: ADME, structural changes during metabolism (chemistry), chemical mutagenesis, carcinogenesis, and teratogenesis, drug-drug interaction, drug allergy, drug resistance, tolerance and dependence, pharmacogenomics, and drug discovery. Pre: First year standing in DKICP

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, treatment of common and not so common ailments. of medications used on a day to day basis for the 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 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) genetic 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 (HPV, 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 the College of Pharmacy

PHPS 570 Drugs from the Ocean (1) This course will focus on the chemical aspects of natural products from marine, microorganisms, and other sources. Natural products are normally classified according to their chemical properties, or their origins, or core structural skeletons that are related to their biosynthetic organs.

PHPS 591 Basic & Applied Toxicology (2) 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 abuse including stimulants, depressants, hallucinogens and anabolic steroids. 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, household toxins and pharmaceutical agents will be presented.

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 (5) This course focuses on the pathophysiology, pharmacology, toxicology, and therapeutics of CNS disorders. Students will apply didactic learning to drug treatment in this patient population. Assessments include exams, SOAP notes, a research paper and presentation on a CNS disorder. 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 MSCP or Clinical Psychopharmacology Certificate programs. Co-req: PHPS 607 or PHPS



609.

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 MSCP or Clinical Psychopharmacology Certificate programs. Co-req: PHPS 607 or PHPS 609.

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) (lecture/other) 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 609 Clinical Psychopharm Practicum (1) Preceptor is a practitioner with demonstrated experience in clinical psychopharmacology in accordance with the prevailing jurisdictional law. Advanced Psychopharmacology I and II courses taught concurrently. Pre: Enrollment in the Program. Co-Req: PHPS 604 and 605.

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; fluororous 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, asthmas/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, radiopharmaceuticals. 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 radiopharmacological 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 online 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 acetate-malonate 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 733 Aerosol Physics in Medicine (1) The course is structured in two equal halves. Part 1 focuses on fundamentals concerned with aerosol behavior and assessment of orally and nasally inhaled products (OINDP). Part 2 applies the knowledge gained in the first part to develop an understanding of the current regulatory science and newer methods of assessment to provide more meaningful data to prescribing clinicians and the patients themselves.

PHPS 734 Biotechnology Laboratory (2) (lab) Biotechnology continues to play a greater and greater role in pharmacy. Health conditions can be treated with DNA vaccines, RNAi, monoclonal antibodies, recombinant proteins including peptide hormones, etc. This course will provide hands-on experience with biotechnology techniques. Techniques will be covered from DNA manipulations to expression of recombinant proteins.

PHPS 735 Cell Cycle Progression (2) (lab) Lecture and mammalian cell culture lab with modern methodological approaches for studying apoptosis (programmed cell death) and the cell cycle. Relationships between the cell cycle and apoptosis in understanding pathological conditions and identifying new therapeutic strategies. Pre: Enrollment in DKICP PhD program.

PHPS 749 Overview of Pharm Sciences I (2) Drug discovery, basic principles of drug design, development and action to provide an introduction to the pharmaceutical sciences. Among topics are an introduction to medicinal chemistry, drug targets and interactions, and the architecture of drugs. Pre: Enrollment in DKICP PhD program.

PHPS 750 Overview of Pharm Sciences II (2) Drug design, development and action to provide an introduction to the pharmaceutical sciences. Among the topics are ADMC, structural changes during metabolism (chemistry), chemical mutagenesis, carcinogenesis, and teratogenesis, drug-drug interactions, drug allergy, drug resistance, tolerance and dependence, pharmacogenomics, and drug discovery. Pre: Enrollment in DKICP PhD program.



PHPS 751 Biochemistry I - Biomolecules (3) Basic foundation for medicinal biochemistry, pharmacology, including the structure and function of amino acids, proteins, nucleic acids, and lipids. Biological processes including signal transduction, DNA, RNA, and protein synthesis for an understanding of disease states and drug action. Pre: Enrollment in DKICP PhD Program.

PHPS 752 Biochemistry II - Metabolism (3) Metabolism and the interrelationships/integration of metabolic processes, including glycolysis, the tricarboxylic acid cycle, gluconeogenesis, and the synthesis and breakdown of biomolecules. Metabolic control and regulation of pathways will be emphasized. Clinical correlations and metabolic diseases will be examined. Pre: Enrollment in DKICP 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 780 Research Seminar (1) The transfer of information in the pharmaceutical sciences is often achieved through the presentation of seminars. Students will prepare and present the annual research seminar required for partial fulfillment of the PhD degree. Pre: Enrollment in the College of Pharmacy PhD program. Course may be repeated for credit.

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.) 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.) Statement of planned reading or research required. Pre: instructor's consent.

Additional Courses

Also see the [PHPS undergraduate-level courses](#).

Tropical Conservation and Environmental Science (CBES) Graduate Courses for the Master of Science in TCBS

College of Arts and Sciences

CBES 500 Master's Plan Studies (1) (other) 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 TCBS (1) (other) 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) (other) Seminars given by TCBS faculty, visiting scientists from other universities, federal, state and non-profit agency personnel working in fields related to TCBS. 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) (lecture/other) 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 161, 161L, 162, 162L, 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 & Analysis (3) (lecture/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) (lecture/other) 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) (lecture/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 642 Comm. Science in K-12 Settings (2) For graduate students interested in improving their ability to communicate their scientific knowledge and research by designing activities and teaching in local schools or community events. The course combines inquiry-based science teaching methods with teaching experience in a local school classroom or community event. Pre: TCBS Cohort Acceptance. This course is dual listed with BIOL 442

CBES 645 Apply Social Sci to Marine/Coa (3) Social science methods for profiling natural resource dependent communities and assessing the social and economic impacts of ecosystem management and regulation. Marine communities and fisheries in the Pacific region, with some discussion of terrestrial resource management. Relevant laws, policies and management agencies. Public input, best science, realities of management conflict and compromise. Social impact assessment, case studies and public and professional roles in management.

CBES 650 Oceanographic Monitoring & Ana (3) (lecture/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 Hawaii. 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) (lecture/other) 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) (lecture/other) 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) (lecture/other) 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 consent of instructor.

CBES 690 Internship (3) (other) Internship for Plan B Masters students in TCBES 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 TCBES 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) (other) Research in conservation biology and environmental sciences for Plan A Master's students.

CBES x94 Special Topics in Subject Matter (Arr.) 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.) Statement of planned reading or research required. Pre: instructor's consent.