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UNH is the primary institution within the University System of New Hampshire responsible for providing graduate programs that meet state, regional, and national needs and the only one at which doctoral programs are offered. Other units of the University System do offer some master’s degree programs.

The Graduate School is led by the dean, who implements the policies of the graduate faculty. The dean is advised by the Graduate Council, which is composed of elected faculty members and graduate student representatives.

Graduate School
www.gradschool.unh.edu
The Graduate School provides assistance to prospective and current students from the time of their first inquiry about graduate study until completion of their graduate programs. Students are encouraged to contact the Graduate School staff with questions regarding academic policy, financial assistance (scholarships, fellowships, and travel grants), and availability of University services.

Graduate Council
The Graduate Council comprises 12 graduate faculty members and four graduate students. The council advises the dean of the Graduate School on policies concerning graduate education and is responsible to the graduate faculty for recommendations concerning new graduate programs. Standing committees of the council include the doctoral program committee, the master’s program committee, the student affairs committee, and program review committee.

Master’s Programs
The University offers master’s degree programs in a wide variety of disciplines, which can serve either as professional terminal degrees or as intermediate degrees for those intending to pursue further graduate study. In many programs, students can elect options that will permit them to study one aspect of a discipline in depth by preparing a thesis or to gain a broader mastery of a discipline by electing to take coursework in lieu of a thesis.

Doctoral Programs
The University offers doctoral programs in those disciplines that have both the faculty and facilities to support high-quality advanced graduate education. Care has also been taken to ensure that the programs will make a significant contribution to the opportunities for doctoral education in the New England region. Doctoral education properly focuses upon preparing the student to contribute to the growth of knowledge through research. Most doctoral programs also provide opportunities for students to work as teaching assistants and to participate in seminars on teaching led by experienced faculty members. After receiving a dual grounding in the development and communication of knowledge, graduates from UNH doctoral programs have gone on to find excellent teaching and research positions.

Interdisciplinary Programs
The Graduate School encourages and supports interdisciplinary study within existing programs and in the form of new and innovative graduate curricula. While self-designed courses of study are not available at the University, many of our programs offer a range of electives, cross-disciplinary study, and independent projects that allow students to tailor their work to reflect individual interests. This is especially true at the doctoral level. In addition, the Graduate School oversees intercollegiate programs that involve faculty and coursework from more than one school or college. Intercollegiate programs offer students the opportunity to pursue new and emerging fields of study that draw upon multiple disciplines, leading to solid disciplinary foundations as well as cross-disciplinary skills useful for solving new social and scientific problems. Opportunities for interdisciplinary research are also available in the institutes and centers at the University.
The Graduate School extends its programs and services into central and southern New Hampshire through the UNH Center for Graduate and Professional Studies, located at our urban campus in Manchester’s historic mill yard. The center offers a wide range of post-baccalaureate programs for professionals in business, counseling, education, social services, health care, government, and related fields. All graduate programs supported by the center are directed by UNH faculty. The mission of the center is to bring the resources and expertise of the University of New Hampshire to the population and economic center of the state, to focus and extend UNH’s professional education programs, and to further distinguish professional graduate education at UNH.

**McNair Graduate Opportunity Program**

www.unh.edu/mcnair

The McNair Graduate Opportunity Program provides eligible undergraduate students with ongoing consultation and support from faculty mentors and staff to help ensure their success in making the transition from undergraduate to graduate education. There is both an academic year and a summer component to the program. Application is required.

**Graduate Student Organization**

The Graduate Student Organization (GSO) serves to provide a collective voice for the more than 2,400 graduate students who form an integral part of the University community. The GSO provides a representative structure for the graduate student body. Its board, comprising representatives from each approved graduate program, helps to find graduate student representatives for various University boards and committees. The board also maintains communication among graduate students through Blackboard.

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**Communication to Students**

University Communications are sent to students through the following channels:

**Webcat**

Students receive billing statements, register, view grades, student accounts and financial aid awards through Webcat, a part of MyUNH (Blackboard).

**University E-mail**

Important notifications are sent to students by many departments and offices via a UNH e-mail address that is assigned by the University. Students are responsible for checking this e-mail address on a regular basis.

**MyUNH (Blackboard)**

Course material and University announcements are available through MyUNH, a student portal system.

**Mail to permanent address**

Some notifications are sent in the student’s name to the permanent mailing address.
Admission and Registration

In this section you’ll find details regarding the University’s admission and course registration process. Please contact us at the Graduate School or at the Registrar’s Office if you need further clarification. We will be happy to answer your questions regarding University procedures and policy.

Applying for Admission

Persons holding a baccalaureate degree from an accredited college or university may apply for admission to the Graduate School. Admission is both limited and competitive and is based solely upon academic qualifications and potential of the individual.

All application materials become part of the permanent records of the University of New Hampshire and will not be returned. Access to this material is limited under the Family Rights and Privacy Act of 1974. Applicants who are not admitted, or who are admitted and do not register in the Graduate School, do not have access to their application files. Materials received as part of the application process will not be duplicated for personal use by the applicant or forwarded to a third party. Materials received from applicants who do not complete their application, who are not admitted, or who are admitted and do not register are held for two years before being destroyed.

Application procedures, including deadlines and program-specific requirements, are available at the Graduate School, http://www.gradschool.unh.edu/home/apply_instruct.html.

Applicants to programs that lead to the master of science for teachers (M.S.T) degree in chemistry, English, or mathematics must meet, in addition to the normal requirements, one of the following admission requirements: (1) completion of education courses sufficient for certification, (2) completion of three years of teaching experience, or (3) current employment in a full-time teaching position.

Applicants from Foreign Countries

All applicants from non-English-speaking countries must, in addition to all of the above, provide Test of English as a Foreign Language (TOEFL) scores. A minimum TOEFL score of 550 paper-based (213 computer-based or 80 Internet-based) is required for admission. TOEFL scores are valid for only two years. The International English Language Testing System (IELTS) may be accepted on a case-by-case basis. A financial declaration on official University forms is also required should you be admitted. A four-year baccalaureate degree is normally the minimum academic certification required for admission.

Applications from residents of foreign countries will be considered only for regular full-time admission.

Application Deadlines

Application deadlines for admission and financial aid vary by program. These are updated on an annual basis and may be found on our Web site.

International applicants who are not currently residing in the United States will be considered for admission for the fall session only and must have their applications completed by April 1. International applicants currently residing in the United States should have their applications completed at least four months prior to the session for which they are applying.

Incomplete Applications

Applications that remain incomplete after the first day of classes of the term for which admission was desired will be placed in an inactive status. A written request is required to reactivate an application.

Application Review

Once an application is complete, it is reviewed by an admissions committee of graduate faculty members, which makes recommendations to the Graduate School. The Graduate School will review these recommendations and make the final decision. While applicants with bachelor’s degrees may apply directly to certain doctoral programs, the Graduate School also reserves the right to offer applicants admission at the master’s degree level in its place.

Admission Categories

Official offers of admission from the Graduate School are made for a specific term and year in one of the following categories: regular, provisional, or conditional. Applicants who are in the final year of an undergraduate or, in some cases, a graduate degree program are contingent upon the successful completion of that degree program. An official final transcript showing grades and the awarding of the degree must be received by the Graduate School before the student may enroll for the graduate program.

Regular Admission

Regular admission may be offered to applicants whose academic records and supporting documents indicate that they are fully qualified to undertake graduate study in their chosen fields.

Provisional Admission

Provisional admission may be offered to applicants whose academic records and supporting documents indicate that they are qualified to undertake graduate study, but whose undergraduate preparation was not in the intended field of graduate study. Applicants offered provisional admission must meet the specific criteria, usually undergraduate coursework, stated at the time of their admission, before being changed to regular graduate student status.

Conditional Admission

Conditional admission may be offered to applicants whose academic records indicate deficiencies but suggest some promise of success in graduate study. Students offered conditional admission must meet the specific requirements stated at the time of their admission in order to remain in the Graduate School. Conditionally admitted students are not eligible for assistantships and scholarships offered through the Graduate School until the conditional status is removed.

Deferred Admission

Applicants who cannot enroll in the term for which admission was offered may request to have their admission deferred for up to one year. Such requests must be in writing and will be considered only once. Because enrollments are limited and competition for admission may vary from year to year, such requests may not be granted. Applicants who have received approved deferment of their admission cannot register for graduate coursework at the University during the period of deferment.

Early Admission--University of New Hampshire Seniors

Qualified senior students at the University of New Hampshire may be admitted to the Graduate School provided they have followed normal application procedures; they must have been admitted for the semester in which they wish to enroll in courses for graduate credit. A 3.20 cumulative grade-point average is normally required to be considered for early admission. Such seniors are normally admitted prior to the start of their last
undergraduate semester, but may be eligible to apply for admission to the first semester of their senior year. Seniors who have been admitted under early admission may register for a maximum of 12 credits of graduate-level courses prior to completing their bachelor’s degree. Such courses may upon recommendation of the department and approval of the Graduate School count toward both a bachelor’s and master’s degree.

When early admission seniors have registered for graduate courses, they must maintain a grade-point average of 3.20, complete their undergraduate degree as planned, and pass graduate courses taken for credit with a grade of B- or better. If these conditions are not met, admission is withdrawn.

Not all graduate programs participate; each program’s faculty retain discretion regarding, whether their program admits students under early admission, and the maximum number of graduate credits permitted (not exceeding 12), (e.g., some programs will accept one course, others two). Applicants are strongly recommended to meet with the graduate coordinator in the program’s faculty to discuss specifics.

Dual-credit forms must be completed and approved by the dean of the Graduate School at the beginning of the semester for which dual credit is sought.

Additional Information

Non Degree Students
Individuals holding baccalaureate degrees may register for graduate courses through Continuing Education, or through the Center for Graduate and Professional Studies at the University of New Hampshire in Manchester. These individuals are designated as “non degree students.” Non degree students are not required to file an application for admission to the Graduate School and are not candidates for a graduate degree. Non degree students are not normally permitted to register as full-time students (i.e., 9 or more credits). Please note policy on transfer of credits (internal and external) in academic regulations and degree requirements.

Applicants Not Admitted
Applicants who are denied admission may have their applications reconsidered only if they furnish significant additional material that was not available at the time of the original decision, such as evidence of further academic achievement or more recent and significantly improved GRE or GMAT scores. Reapplication is not encouraged.

Registration

Academic Year
Registration information and the Time and Room Schedule are available at http://www.unhinfo.unh.edu/registrar.

Continuous Registration Policy
Unless a leave of absence is granted, graduate students are required to maintain continuous enrollment each semester of the academic year until their degree is formally awarded by registering for course credits, research, or continuing enrollment.
* Master’s students must enroll for course credits, thesis credits, Master’s Continuing Research (GRAD 900), or Continuing Enrollment (GRAD 800).
* C.A.G.S. students must enroll for course credits or Continuing Enrollment (GRAD 800).
* Pre-candidacy doctoral students must enroll for course credits, Doctoral Research (999), or Continuing Enrollment (GRAD 800).
* All doctoral candidates must register for Doctoral Research (999) each semester after advancement to candidacy until their degree is conferred, even if the minimum requirement (two semesters) has been met. Students enrolled in summer-only programs—currently, Math M.S.T., English M.S.T., and College Teaching M.S.T.—are required to enroll in course credit or Continuing Enrollment (GRAD 800) each summer until their degree is formally awarded. Students who do not maintain continuous enrollment will have their degree status discontinued and will need to petition for reinstatement or readmission in order to return to their program.

Master’s Continuing Research (Grad 900—Full-time Status, 0 credits)
Master’s students who have completed all course requirements and have previously registered for the maximum number of thesis or project credits and are in residence completing their master’s program must register for Master’s Continuing Research (Grad 900).

Continuing Enrollment (GRAD 800)
All continuing graduate students who are not enrolled for course credits, thesis credits, Doctoral Research (999) or Master’s Continuing Research (GRAD 900), and are not in residence, are required to register for GRAD 800 each semester of the academic year (or each summer for students in Math MST, English MST programs and College Teaching M.S.T.). Students registered for GRAD 800 are considered part-time, 0 credits.

Degree Status Discontinued
Students who do not formally withdraw and do not register and pay for course credits, research, or continuing enrollment by the appropriate registration deadline, or do not return from an approved leave of absence, will have their degree status discontinued. Students are notified by the Graduate School when this administrative action is taken and are required to apply for readmission or reinstatement if they subsequently desire to resume their academic program.

Reinstatement
Students who have their degree status discontinued for failing to maintain continuous enrollment may petition the Graduate School for reinstatement as long as the term that the degree status was discontinued has not ended. Such a petition requires a reinstatement fee, plus payment of current semester charges and any late fees that may have accrued. If the term in which the student’s degree status was discontinued has ended, the student must then petition the Graduate School for readmission. Both forms can be found on the Graduate School’s forms page at www.gradschool.unh.edu/home/forms.html.

Full-Time Students
Graduate students registered for 9 or more credits, Master’s Continuing Research (Grad 900), or Doctoral Research (999) are classified as full-time students. Students holding assistantship appointments are also considered full time and must register for a minimum of 6 credits, Master’s Continuing Research (Grad 900), or Doctoral Research (999) each semester.

Three-Quarter-Time Students
Graduate students not on an assistantship and registered for 7 or 8 credits are classified as three-quarter-time students.
Half-Time Students

Graduate students not on an assistantship and registered for 5 or 6 credits are classified as half-time students.

Maximum Load

The maximum graduate load allowed is 16 credits (12 credits for a student on a full assistantship). Only under unusual circumstances will a student be allowed to exceed these limits, and then only with the recommendation of the student’s adviser and graduate program coordinator and the approval of the dean of the Graduate School.

Dropping and Adding Courses

Graduate students may add or drop courses in accordance with the procedures and deadlines published by the Registrar’s Office at www.unh.edu/registrar.

Auditing Courses

A graduate student may, with the approval of his or her adviser and the faculty member concerned, audit courses. The deadline for requesting an audit is listed on the Registrar’s calendar. Subsequent requests for change to audit require a petition form and must be approved by the course faculty member, the student’s adviser, graduate program coordinator, and the dean of the Graduate School.

Change of Name or Address

It is the responsibility of the student to complete a change of name or address form whenever a change is made. Change of name/address forms cannot be found at www.unh.edu/registrar. Students are also advised that their UNH e-mail address is the official means of electronic communication with UNH. Billing, registration notices, reminders, as well as the majority of correspondence from the Graduate School will be communicated through the UNH email account.

Summer Session

Although many graduate-level courses are offered during the summer session, the University does not guarantee that any particular course will be offered. The availability of individual faculty members to supervise research or to participate in qualifying examinations and final examinations or defenses during the summer session varies from year to year.

Course information and registration materials may be obtained at www.learn.unh.edu/.

Maximum Load

The maximum graduate load allowed is 12 credits for the entire summer session. A student will be allowed to exceed this limit only by petition with the recommendation of the student’s adviser, graduate program coordinator, and the approval of the dean of the Graduate School.

Student Load for Veterans Benefits

Graduate students eligible for V.A. benefits during the summer receive benefits according to the following schedule of average credit registrations: 1/2 credit/week or more = full time; 3/8 credit/week or more = 3/4 time; 1/4 credit/week or more = 1/2 time; less than 1/4 credit/week = tuition and fees only.

Nonregistration

Leave of Absence

Students who, because of extenuating circumstances, are unable to pursue their graduate program may request a leave of absence for a maximum of one calendar year. Such circumstances may include medical reasons, military obligation, family emergencies, or hardship. The procedure for an approved leave of absence requires that students submit a request, available at www.gradschool.unh.edu/home/forms.html, along with appropriate documentation, prior to the term for which the leave is requested. The dean of the Graduate School, upon recommendation of the student’s adviser and graduate program coordinator, will review the request. If the request for a leave is granted, the time limit for completion of the student’s program will be extended appropriately. Students on an approved leave of absence are exempt from paying the continuing enrollment fee. Graduate students who do not return from a leave of absence in the allotted time frame will have their degree status discontinued.

Administrative Separation for Reasons of Health-Related Behaviors

The dean of students, or the associate dean of the Graduate School, or designee, in consultation with Health Services, and/or Counseling Center, Disability Student Services, Behavioral Intervention Team, and Affirmative Action and Equity Office (ADA Compliance) may temporarily separate a student for reasons relating to seriously impaired mental/physical health when such student’s health-related behaviors (1) pose a significant risk of substantial harm to health, safety or property of him or herself or other members; of the University community, (2) and/or when the student’s health-related behaviors significantly disrupt the ability of other University community members to fulfill the University’s mission.

Examples of such behaviors include but are not limited to a) continuing disruptive behaviors after being told by a University official to stop b) behaviors that indicate the student may be out of touch with reality or unaware of the consequences or effects of his or her behaviors, c) threat of or harm to self or others.

Administrative withdrawal is not intended to be a substitute for other procedures as found in the Code of Conduct or Academic Policies. Such action may not be used as a means of excluding qualified students with disabilities. The dean of students or associate dean of the Graduate School or designee shall provide the student with a written statement of reasons for the temporary separation and invite the student to meet.
The purpose of this meeting shall be to provide the student with an opportunity to challenge the separation and request reconsideration. The dean of students or associate dean of the Graduate School or designee may require documentation of readiness to return from a licensed attending medical authority and/or licensed psychologist, and consult with the appropriate University official(s) before lifting the separation. The student may be accompanied at the meeting by a member of the University community.

The student must schedule a meeting within ten (10) calendar days of receiving the written statement. If the student fails to request a meeting with the dean of students or associate dean of the Graduate School within ten (10) calendar days of beginning the temporary separation, or if the temporary separation is upheld either at the meeting and the student fails to appeal, or upheld upon appeal, the temporary separation shall be changed to an administrative withdrawal.

Within three (3) calendar days of the conclusion of this meeting the dean of students or associate dean of the Graduate School shall send a letter to the student; informing him/her of the outcome. The student may appeal the determination to the vice president for student and academic services, the dean of the Graduate School, or his/her designee. The appeal request must be received by the vice president for student and academic services by no later than five calendar days after the student receives the letter from the dean of students or associate dean of the Graduate School.

For graduate students, the dean of the Graduate School will make the final decision based on the information received, in consultation with the appropriate University official(s). (University Senate, April 26, 1976, updated by the dean of students, June 2009.)

**Readmission**

Students who withdraw, who have their degree status discontinued, or whose time limit has expired and subsequently desire to resume their academic program are required to apply for readmission. Readmission forms are available at www.gradschool.unh.edu/home/forms.html. Students who are applying for readmission are required to pay an application fee plus, if readmitted, any accumulated continuing enrollment fees for the period during which they have been inactive. Students are not guaranteed readmission and may be evaluated in competition with current applicants to the program.

**Change in Degree**

Students who wish to pursue a degree program other than the one for which admission was originally granted must complete the appropriate application for a change in degree. This includes students enrolled in UNH master’s programs who intend to pursue the Ph.D. in the same department in which they were admitted for the master’s degree. These forms are available at www.gradschool.unh.edu/home/forms.html. The dean of the Graduate School will notify the student of the decision after consulting with the appropriate departments.

Students who withdraw for health reasons, whether voluntarily or are separated by administrative action, must apply for readmission through the Office of Undergraduate Admissions or the Graduate School. Readmission shall be contingent upon receipt by the appropriate director(s) or their agents, of documentation regarding readiness to return from a licensed attending medical authority, and/or licensed psychologist; to the extent the withdrawal was for a condition that requires ongoing treatment, readmission may also be contingent upon documentation of the prescribed treatment course and the plan for implementation thereof. Readmission may also include a personal interview with either the vice president or dean of the Graduate School or his/her designee.
Academic Regulations and Degree Requirements

Academic Regulations and Degree Requirements

It is the student's responsibility to become familiar with the academic regulations and degree requirements of the Graduate School as well as the special requirements of his or her own academic program. The general requirements of the Graduate School are found in the catalog. Individual program requirements may be found in the catalog or obtained from the respective department.

Academic Honesty

Academic honesty is a core value at the University of New Hampshire. The members of its academic community both require and expect one another to conduct themselves with integrity. This means that each member will adhere to the principles and rules of the University and pursue academic work in a straightforward and truthful manner, free from deception or fraud. The academic honesty policy can be found in the Student Rights, Rules, and Responsibilities handbook.

Graduate Courses

Graduate credits may be earned in courses numbered from 800 through 999, or under limited circumstances in courses numbered at the 700 level.

The faculty of each graduate program prescribes the courses that make up the degree program. In addition, the Graduate School has general requirements for master’s and doctoral degree programs.

800- and 900-Level Courses

These courses are offered for graduate credit only and therefore are open only to admitted graduate students or non-degree students with a minimum of a bachelor's degree. 800-level courses may be co-listed and cotagged with advanced-level undergraduate courses.

700-Level Courses

These are advanced undergraduate courses. Graduate credit will not be given for any courses that have freshmen or sophomores enrolled. The Graduate School monitors those advanced-level undergraduate courses that are co-listed and cotagged with 800-level graduate courses to insure that only advanced-level undergraduates are enrolled. Up to 12 credits earned in 700-level courses may be petitioned for graduate credit by a graduate degree student, provided the credits are taken in a program other than the one in which the student is seeking the degree and provided such courses are approved by the student's adviser, graduate program coordinator, and the dean of the Graduate School. Such courses must be taken for a letter grade. Petition forms are available at http://www.gradschool.unh.edu/home/forms.html.

Graduate Grading

Letter grades: The following grades are used at the University: A (4.0), A- (3.67), B+ (3.33), B (3.0), B- (2.67), C+ (2.33), C (2.0), C- (1.67), D+ (1.33), D (1.0), D- (.67), F (0). Graduate credit is only granted for courses completed with a grade of B- or higher. Individual programs may have stricter requirements, and those are published with their degree program requirements.

AF Grades: An “AF” grade, Administrative F, is assigned for failure to either drop or complete a course. An “AF” is considered the same as an “F.”

Credit/Fail Grades: A “CR” grade is assigned for complete, approved theses and dissertations, as well as other approved courses and seminars.

Pass/Fail Grades: Graduate courses cannot be taken pass/fail. A graduate student may petition to take undergraduate courses on a pass/fail basis. Such a petition must be approved by the end of the add period for the term the course is taken. A grade of “C” is the minimum grade in order to receive a “P.” Courses at the 700-level approved for graduate credit cannot be taken for pass/fail.

Audit Grades: An “AU” grade is assigned for completion of courses for which an audit was granted. No credit is earned.

Incomplete Grades: An “IC” grade is assigned with the approval of the instructor for excused unfinished work only. The work must be completed and submitted to the instructor by the date agreed to with the instructor, but not later than the last day of the classes of the semester immediately following the one in which the incomplete was granted (800- and 900-level courses only; midsemester deadline for 400-, 500-, 600-, and 700-level courses). If extraordinary circumstances arise, a petition requesting additional time may be submitted. The petition, listing a specific deadline for completion must be approved by the instructor, the student’s adviser and graduate program coordinator, before being submitted to the Graduate School. An extension will be granted by the dean only under unusual circumstances and will usually not exceed one calendar year from the end of the semester in which the course was originally taken. An incomplete grade becomes an “F” if not resolved or if a petition for an extension is not approved within the allotted time period. This policy also applies to students who withdraw from the University or who are on an approved leave of absence.

IA Grades: An “IA” grade is assigned for approved continuing courses such as thesis or doctoral research and remains on the record until the course requirements are completed. In the case of doctoral research, the “IA” grades remain on the official transcript for all semesters prior to the completion of the degree. The “IA” grade for the final term of enrollment will be changed to “CR” to signify successful completion of the dissertation.

W Grades: If a student withdraws from school or drops a course prior to the fifth Friday of the semester, the course(s) will not appear on the student’s permanent record. If a student withdraws from school or, for compelling nonacademic reasons, submits an approved petition to drop a course after the fifth Friday of the semester, a notation of “W” will be shown on the student’s academic record. If the withdrawal or drop is after the midpoint in the class, a grade of “WP” or “WF” is shown on the record. A “WF” is considered a failing grade and will calculate into the GPA as such. Deadlines for courses scheduled for any time period other than a full semester are apportioned at the same rate as semester courses. The actual dates are determined on a term-by-term basis.

Appeals: Every instructor must be prepared to discuss and explain the basis for her or his evaluation of students. If, after consulting the instructor, a student still believes that he or she was treated unfairly, he or she has the right to seek redress from the chairperson of the department or program in which the course is offered. Under exceptional circumstances, a final appeal may be made to the dean of the college or school in which the program is offered.

Repeated courses: Repeating a course does not remove the original course or grade from the record. If the course numbers and/or titles do not match exactly, graduate students must obtain written permission of their adviser, graduate program coordinator, and the endorsement of the Graduate School dean before the adjustment will be made. Only
the most recent grade is included in the cumulative grade-point average; only the most recent credit, if any, is included in the cumulative credits earned. A course may only be repeated once. Only repeated courses taken at UNH will alter the cumulative grade-point average.

**Academic Standards**

Graduate students receiving grades below “B–” in 9 or more credits, including undergraduate courses taken while a graduate student, will be dismissed from the Graduate School.*

Graduate students enrolled under the early admission program receiving any grade below “B–” in a graduate course while in dual status can be dismissed and have their admission to the Graduate School withdrawn.

Graduate students will have a maximum of two opportunities to successfully complete final examinations for the master’s or C.A.G.S. degree.

Doctoral students will have a maximum of two opportunities to successfully complete qualifying or final examinations for the Ph.D. degree.

Graduate students admitted on a conditional or provisional basis must meet the conditions or provisions as stated in the letter of admission in order to remain in the Graduate School.

Graduate students MUST have a cumulative GPA of 3.0 or higher in order to graduate.

* Each individual program may set and announce standards for coursework, examinations and/or research achievement that are more rigorous than the Graduate School standard. Thus, students may be dismissed if they accumulate less than 9 credits of grades below the “B–” level, and/or fail to make adequate progress in other aspects of their graduate program.

**Dismissal for Failure to Make Satisfactory Academic Progress**

(Note: This procedure is not available to graduate students who have received failing grades in 9 or more credits).

A department chairperson, a graduate program coordinator, or an appropriate faculty committee may recommend dismissal for a student who is failing to make satisfactory academic progress in their program. This recommendation shall be forwarded to the Associate Dean of the Graduate School with a copy to the affected student. The Associate Dean of the Graduate School will act on the faculty recommendation and inform the student and the graduate program coordinator or department chair of the action taken. A student disagreeing with the action taken should make every effort to resolve the situation through informal discussions with the individuals involved in the decision. After such efforts, a student wishing to enter a formal appeal should follow the procedure outlined below. A student who has been dismissed for failure to make satisfactory academic progress may, with the permission of the Dean of the Graduate School, enroll as a special student in courses in his/her program pending a final decision on the appeal.

**Appeals Process**

Step 1: The student should request that the faculty member or committee making the original recommendation reconsider their decision. The student’s request should be written and should contain any information which the student feels warrants a reconsideration of the decision. A copy of the request should be sent to the dean of the Graduate School. As soon as possible after receiving this request, the faculty member or committee group will reconsider their decision and notify the student and the dean of the Graduate School of the result of their deliberations in writing.

Step 2: If the student is not satisfied with the decision reached in Step 1, he/she may request that the chairperson of the appropriate department or program convene a meeting of all faculty members in the department or program to review the decision. The student’s request should be in writing, and a copy should be sent to the dean of the Graduate School. After the meeting, the chairperson will provide the student and the dean of the Graduate School with written notification of the decision of the faculty.

Step 3: If the student is dissatisfied with the decision reached in Step 2, he/she may request that the dean of the Graduate School review the decision. The student must request such a review in writing and stipulate the reasons for his/her dissatisfaction with the decisions reached in the earlier steps in the review procedure. Within a reasonable period of time, the dean of the Graduate School will hold separate meetings with the student and the appropriate faculty to discuss the case. After these meetings and after reviewing any other information he/she deems appropriate, the dean of the Graduate School will inform the college dean about the appeal process to date. In consultation with the Graduate Council, the dean of the Graduate School will then arrive at a final decision, which he/she will communicate in writing to the student, the department or program faculty, and the college dean.

In Steps 1 and 2, the student may, at the discretion of the faculty body involved in hearing the appeal, be present during the review of his/her appeal. A member of the University community may appear with the student, as an adviser, before the dean of the Graduate School and before any faculty meeting, which the student is permitted to attend. An adviser may be present, but may not directly participate, in any of these proceedings.

**Transfer of Credits**

A maximum of 12 credits taken by a student prior to matriculation (internal and external combined) can be applied to a degree program.

**External to UNH**

Students may request that a maximum of two courses, for up to 8 semester credit hours of resident courses completed on the campus of an accredited institution authorized to grant graduate degrees, be transferred to count toward their graduate program. All courses presented for transfer must have been completed with a grade of B or better and must have been taken for graduate credit. Courses cannot be transferred for credit if used in earning another degree. Transfer of credits must be recommended by the program faculty and approved by the dean of the Graduate School. Students taking courses at another university for transfer after enrolling at UNH should obtain approval of their adviser and the graduate dean prior to enrolling in the course.

**Internal to UNH**

A maximum of 12 credits completed by a nondegree student in UNH graduate courses (800- or 900-level) at UNH or UNHM may, upon approval of the dean of the Graduate School, be applied to a student’s degree program. Each program’s faculty retain discretion regarding the maximum number of graduate credits that will be recommended for approval (not exceeding 12).
Continuing Education Units
The Continuing Education Unit (CEU) is a nationally recognized method of quantifying the time spent in the classroom during professional development and training activities. Ten hours of instruction = 1.0 CEU. One hour of instruction = 0.1 CEU. CEUs are not transferable as graduate credit.

Master’s Degree Requirements Credits
A minimum of 30 graduate credits is required for all master’s degrees. Many programs require substantially more than the minimum 30 credits. Individual program requirements are outlined in the program descriptions of this catalog. Graduate credits are normally earned in courses numbered 800-999. Up to 12 credits earned in courses numbered 700-799 may be taken for graduate credit by master’s degree students provided the courses are approved by the dean of the Graduate School and given in a department other than the one in which the degree is sought.

Residency
A student will normally spend at least one calendar year, or the equivalent, in satisfying the requirements for the degree.

Capstone Experience
The inclusion of a culminating or capstone experience in all master’s programs is required. The most appropriate capstone experience(s) for each program is determined by the faculty of each program. Such experiences may include a single integrative course, a performance, an internship or praxis, a portfolio, a scholarly paper or essay, an examination, a research problem, a research project or a research thesis and are subject to approval of the dean of the Graduate School.

Capstone – Non-thesis Option
Requirements for non-thesis capstone experiences must be clearly articulated by each program. Capstone experiences, with the exception of capstone courses, must be approved by a committee of at least 2 faculty members in the student’s program and approved by the Graduate Program Coordinator. All capstone experiences must be completed by the end of the final examination period of the graduation date for which the degree is to be conferred.

Capstone-Thesis Option
Students who are in a thesis program are required to conduct research and prepare a scholarly paper under the guidance of a faculty committee for submission to the Graduate School. Guidelines on the purpose, framework and process for the thesis should be clearly articulated by each program. Students writing a thesis should obtain a copy of the Thesis and Dissertation Manual from the Graduate School or at www.gradschool.unh.edu. Students in thesis programs may also be required to pass a final examination. The regulations concerning this exam are the same as those in the non-thesis option. The thesis committee will normally also serve as the examining committee.

Thesis Credit
During their degree program, a student completing a thesis must enroll for a minimum of 6 thesis (899) credits. A maximum of 10 thesis credits may be applied toward a master’s degree. The exact number of credits within this range to be applied toward the degree will be determined by the faculty of the individual programs. No thesis credit shall be given until the completed thesis has been approved by the thesis committee and accepted by the Graduate School. Satisfactory acceptance of the thesis will be recorded as a credit (CR).

Thesis Committee
A master’s thesis must be approved by a committee composed of the faculty member under whose direction it was written and two other members of the graduate faculty nominated by the department chairperson or graduate program coordinator and appointed by the dean of the Graduate School.

Submission of Thesis
A minimum of two copies of the approved thesis, one ready for binding and one for microfilm, must be submitted to the Graduate School Office by the appropriate deadline as published in the Graduate School calendar. Most programs require one additional copy of the thesis. Binding fees will be paid at the Graduate School and are due upon submission of final copies.

Publication of the thesis by University Microfilms is required, and the student assumes the cost. Students may choose to copyright their thesis at the time of Microfilming.

Time Limit
All graduate work for any master’s degree must be completed within six years from the date of matriculation (enrollment following admission) in the program. Progress toward the degree will be carefully monitored by the adviser and the Graduate School to ensure that adequate advancement is made toward the completion of the program and that any deficiencies noted at the completion of the program and that any deficiencies noted are removed.

Dual Degrees
The Graduate School allows UNH students to pursue two degrees at UNH and count credits toward both degrees under the circumstances detailed below. Such credit will be granted only for graded course work completed with a grade of “B-” or higher. Application of such credit toward a student’s program for a second degree is subject to departmental recommendation and approval by the Graduate School. Dual degrees should be interpreted to include separate majors within the same degree, or a combination of two different degrees. Students will receive separate diplomas for each degree program. Note: No dual degrees will be awarded retroactively.

1. Five-year Bachelor’s/Master’s Degrees (early admission). Qualified senior students at the University of New Hampshire may be admitted to the Graduate School provided they have followed normal application procedures; they must have been admitted for the semester in which they wish to enroll in courses for graduate credit. A 3.20 cumulative grade point average is normally required to be considered for early admission. Such seniors are normally admitted prior to the start of their last undergraduate semester. Seniors who have been admitted under early admission may register for a maximum of 12 credits of graduate-level courses prior to completing their bachelor’s degree. Such courses may be included among those that may be used for both degrees. Such credit will be granted only for graded course work.

2. Consecutive Master’s Degrees. Enrollment in consecutive master’s degrees refers to admission and matriculation in a second master’s degree program at the University of New Hampshire after the completion of the requirements for a first master’s degree earned at The University of New Hampshire. A student may apply up to 12 credits earned in the first master’s degree awarded at The University of New Hampshire toward a second master’s degree with approval of the student’s graduate advisory committee and/or graduate program coordinator in the second master’s program. Thesis or research credits from the first program may not be counted toward the requirements of the second program.
3. Concurrent Dual Degrees. Enrollment in concurrent dual degrees occurs when a student is admitted to and matriculated in two graduate degree programs at the University of New Hampshire simultaneously. A student may pursue concurrent degrees only with approval of the appropriate graduate program coordinator(s) and the Dean of the Graduate School. With approval of the student’s graduate advisory committee(s) and/or the graduate program coordinator(s), a student may apply up to 12 credits of University of New Hampshire credits earned in one master’s degree toward the requirements for a second master’s degree. A student must complete the capstone requirements for both programs. Completion of degree requirements for the two programs need not be at the same time.

4. Integrated Dual Degrees. Integrated dual degrees occur when two graduate programs have formalized a program of study which create an integrated program linking the two disciplines, while continuing to award separate degrees. Students must be admitted to both programs and complete the requirements for both degrees. Integrated dual degree programs may include a single admissions process, submission of a single thesis or capstone experience, and a single advisory committee composed of members from both programs. The number of required credit hours for integrated dual degrees must not be less than 80% of the total minimum hours required to complete each degree separately. Integrated dual degree programs must be approved by the Graduate Council and the Dean of the Graduate School.

All standard policies relating to time to degree, residency requirements, academic standards, and minimum GPA required to graduate apply to any dual degree arrangement.

If the student withdraws from one of the participating programs, the dual degree arrangement is automatically nullified.

If a student’s tuition is funded by one or more units, it is up to the funding unit to decide if tuition may cover courses taken solely for completion of the second program.

Certificate of Advanced Graduate Study
Requirements for completion of the Certificate of Advanced Graduate Study (C.A.G.S.) are found under the program descriptions of the education department. A student can petition to count a maximum of 12 credits, not previously applied to a degree program, and taken prior to admission to the C.A.G.S. towards the C.A.G.S. program.

Qualifying Examination
The qualifying examination, which must be taken at UNH, is required and may be written, oral, or both. This examination will test (1) the student’s general knowledge in the student’s major and minor work and (2) the student’s fitness for engaging in research, particularly in the subject proposed for the dissertation. The chairperson of the student’s program will communicate the examination results to the Graduate School dean. (See academic standards for details.)

Language/Research Proficiency
Each doctoral program has its own language and/or research proficiency requirements. These requirements can be found in the individual program descriptions.

Degree Candidacy
A doctoral student is advanced to candidacy for the degree by the dean of the Graduate School upon recommendation of the graduate program coordinator after the student has passed the qualifying examination, met the language or proficiency requirements as are deemed desirable by the student’s program, and declared a topic for dissertation research.

Doctoral Committee
After the student has been advanced to candidacy, a doctoral committee will be appointed to supervise and pass on the dissertation and administer the final examination. This committee will be nominated by the department of major concentration and appointed by the dean of the Graduate School. It shall consist of a minimum of five members, usually three from the major department and two from related departments. The dean of the Graduate School is an ex officio member of all doctoral committees.

Time Limit
All graduate work for the doctorate must be completed within eight years of matriculation (enrollment after admission) or within seven years if the student entered with a master’s degree in the same field. The student must be advanced to candidacy within five years after matriculation or within four years if the student entered with a master’s in the same field.

Doctoral Degree Requirements
The degree of doctor of philosophy is conferred on qualified candidates who have passed an oral or written examination(s) on the subject matter of their field of study, who have completed an original investigation in this field and have embodied the results in an acceptable dissertation, and who have passed an oral examination in defense of the dissertation. The degree of doctor of philosophy is essentially a research degree.

Credits
Each program specifies the number of courses required for the Ph.D. degree.

Residency
A minimum of three academic years of graduate study is required for the doctorate. Resident graduate work done at other universities may be counted toward the minimum requirement upon approval of the guidance committee and the dean of the Graduate School, but one full academic year must be in residence at the University of New Hampshire. In individual cases, the major department and the dean of the Graduate School may grant permission to pursue the research for the dissertation at another institution where access to special facilities would be advantageous.

Doctoral Research (999)
A minimum of two semesters of registration in Doctoral Research is required. However, doctoral students at candidacy must register for 999 each semester during the academic year, even if the minimum requirement has been met.

Guidance Committee
A guidance committee is appointed by the dean of the Graduate School upon the recommendation of the program faculty as soon as possible after a student has begun study for the doctoral degree. The committee assists the student in outlining a program and preparing for the qualifying examination, and administers the examination.
Dissertation
The dissertation must be a significant contribution to scholarship in the student’s discipline, demonstrating the student’s ability to conduct independent and original research and to communicate the results of the research through a coherent, integrated, and mature piece of writing.

Final Defense
A copy of the completed dissertation must be made available to the members of the examining committee two weeks before the final examination date.

The final oral examination is conducted by the doctoral committee and is intended to give the candidate an opportunity to defend the dissertation. While it is desirable for all committee members to participate in dissertation defenses, whether in person or through virtual means such as conference calls or video conferencing, outside scholars are not required to be present at the defense. Departments will determine how to obtain meaningful and substantive evaluations from external members in consultation with the Graduate School. A written final examination, on subject matter not covered in the qualifying examination, may also be required. This written examination is conducted by the major department. These final examinations must be completed by the date listed in the Graduate School calendar. After consultation with the major program, the dean of the Graduate School may appoint, for participation in the final oral examination, additional members of the faculty under whom the student has worked. The doctoral committee alone shall decide on the merits of the candidate’s performance by a majority vote.

Submission of Dissertation
A minimum of two copies of the approved dissertation, one ready for binding and one for Microfilm, must be submitted to the Graduate School Office by the appropriate deadline as published in the Graduate School calendar. Most departments require one additional copy of the dissertation. Students should consult their advisers concerning dissertation requirements. Binding, Microfilming, and copyright fees will be paid at the Graduate School and are due when the final copies are submitted.

Publication of the dissertation by University Microfilms is required, and the student assumes the cost. Students may choose to copyright their dissertation at the time of Microfilming. If the dissertation material is further published, it should be designated as having been accepted as a doctoral dissertation by the University of New Hampshire.

Graduation
Graduation occurs three times a year, in September, December, and May. All students MUST file an intent-to-graduate online through the Graduate School for one of the above dates by the appropriate deadline specified in the UNH Academic Calendar. Specific information is available at www.gradschool.unh.edu/home/graduation.

All coursework completed prior to the official conferral of the degree will be applied only to that degree program. Graduate students MUST have a cumulative GPA of 3.0 or higher in order to graduate.

Commencement
The annual commencement ceremony is held in May. Students who have completed their degree requirements in the preceding September and December are invited to participate in commencement ceremonies in May.

Master’s and C.A.G.S. students who expect to complete their degree program in May, as well as those who expect to complete their programs at the end of the summer term following the commencement ceremony (September), are eligible to participate in May commencement. Students who file their intent-to-graduate online for either May or September by the last deadline for filing for May will be listed in the commencement book.

To participate in the May ceremony, doctoral students must have completed all requirements for the Ph.D. by the published deadlines. Only those candidates who have completed their program are listed in the commencement book.

For more information on how to register for commencement go to www.unh.edu/presidentialevents/commencement.
Fees and Financial Support

There are many opportunities for financial aid. To ensure that you will benefit, contact us either at the Graduate School or at the Financial Aid Office to talk about what opportunities may be available to you.

Residency

Each graduate student is classified as a resident or nonresident for tuition purposes at the time of admission to the University. The decision, made by the Graduate School, is based upon information furnished by the student’s application and any other relevant information. Nonresident undergraduates continuing directly to the Graduate School will be classified as nonresidents.

All applicants claiming New Hampshire residency are required to have been legally domiciled in New Hampshire continuously for at least twelve months immediately prior to registering for the term for which in-state status is claimed.

Students admitted from states other than New Hampshire or from foreign countries are considered nonresident throughout their entire attendance at the University unless they shall have acquired bona fide domicile in New Hampshire. Changes in residency for enrolled students as well as appeals are reviewed by the Registrar’s Office and will only occur if the student can clearly establish that his or her residence in New Hampshire is for some purpose other than the temporary one of obtaining an education at the University.

The burden of proof in all cases is upon the applicant. In all cases, the University reserves the right to make the final decision as to resident status for tuition purposes. The University rules governing tuition rates are fully set forth in the application for admission package; all students are bound by them.

New England Regional Student Program

The University of New Hampshire participates in the New England Regional Student Program administered by the New England Board of Higher Education. Under this program, admitted graduate students from New England may qualify for regional tuition rates (New Hampshire resident tuition, plus 50 percent) if the program to which they are admitted is one that is not available at any of their home state/public institutions. Inquiries and requests for further information may be directed to the Graduate School or to the New England Board of Higher Education, www.nebhe.org. This tuition rate does not apply to students who are eligible for New Hampshire resident tuition rates.

Sub-Degree Exchange Program

The Graduate School participates in a sub-degree exchange program sponsored by the New England land-grant universities. The program is designed to provide any admitted student at one of the six land-grant universities access to the full range of talent and resources available in the region. Under the agreement, graduate students may, with the approval of the dean of the Graduate School at UNH and the graduate dean of the host university, take advantage of courses or other special resources not available at UNH. Specific information about the program may be obtained from the Graduate School.

Tuition and Fees

Tuition and fees are established by a vote of the Board of Trustees. Approval normally occurs between April and July. The current academic year rates are published annually on the University’s Web site. Mandatory fees for all students include a Memorial Union fee, which funds the personnel, programs, and maintenance of the building; a health and counseling fee, which funds University Health Services and the Counseling Center; a recreation fee, which funds recreational sports facilities; a technology fee, which funds technology services and support for students and faculty; and a transportation fee, which funds transportation services on the Durham campus. The services and facilities available to all and students are required to pay all mandatory fees charged regardless of actual usage of the programs and services. Mandatory fee charges are based on registration status—full- or part-time fees, depending on number of credit hours. Students enrolled in pre-designated evening-only programs do not pay the health and counseling fee. Students enrolled in 4 credits or less pay the technology fee only.

Tuition and fees are due by the published deadline, and students are not considered registered until they have paid. UNH no longer sends bills through the mail—students receive bills through Webcat, a part of MyUNH (Blackboard), the student portal. E-mails are sent to students’ UNH-assigned e-mail address when new bills are posted. Payment may be made online or mailed—check, credit card, cash or wire is accepted. Late fees may be assessed on balances remaining unpaid by mid-semester.

Graduate tuition and fees apply to admitted graduate students enrolling for courses, graduate or undergraduate, at the University during the academic year. Admitted graduate students planning to enroll for UNH courses through weekend or executive programs during the summer session, or through the Center for Graduate and Professional Studies should consult the relevant publications for information regarding tuition and fees.

Mandatory Fees

The University of New Hampshire assesses mandatory fees to support expenses associated with the participation in an academic community. Mandatory fees are defined as fees that all students are assessed as a prerequisite for registration unless specifically exempt. Mandatory fees are assessed because the services made available through such fees benefit the overall educational experience of the students, including academic, co-curricular, health-related, and recreational programs. It is recognized that not all students will use the benefits and privileges made available by fee-supported activities to an equal extent. The services and facilities supported by fees are available to all. The special circumstances of part-time and graduate students is reflected in the University’s fee structure.

Fee Structure

Full mandatory fees are assessed to undergraduate and graduate students registered for 9 or more credits, national student exchange students, doctoral research and master’s continuing research students. Students registered for 5-8 credits are assessed one-half of the cost. Students registered for 1-4 credits are assessed only the Technology Fee. Students enrolled in Manchester campus programs pay Manchester mandatory fees.

The mandatory fee includes:

Memorial Union fee for the use and administration of the student union

Recreational fee for support of recreational facilities

Student activity fee for support of the undergraduate newspaper, yearbook, student government, student lawyer, student radio station, and other student organizations

Athletic fee to provide support for athletic programs

Fees and Financial Support

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The mandatory fee includes:

Memorial Union fee for the use and administration of the student union

Recreational fee for support of recreational facilities

Student activity fee for support of the undergraduate newspaper, yearbook, student government, student lawyer, student radio station, and other student organizations

Athletic fee to provide support for athletic programs
Health and counseling fee to provide general health care through University Health Services
Technology fee to provide electronic tools to students both on and off campus
Transportation fee to provide student transportation services, including select infrastructure improvements, transit service, pedestrian and bicycle facilities, and ride services
SHARPP fee to support the University’s efforts to address issues of sexual and domestic violence


cases, or fellowship, unless such support covers the student cannot be on an assistantship and enrolled only in 999 prior to the begin-
der the third week).
The student has temporarily relocated and/or permanently resides out of the immediate geographic area (75 miles) for at least one semester, conducting research related to his or her dissertation.

Exceptions
Students enrolled as majors in the UNH Center for Graduate and Professional Studies are assessed the Manchester mandatory fees.

Students participating in a UNH Study Abroad Program or internship outside the immediate geographic area (75-mile radius) for a semester may petition for a waiver of mandatory fees, with the exception of the technology fee.

All graduate students are exempt from the student activity and athletic fees. Graduate students enrolled in weekend/executive programs on the Durham campus are exempt from mandatory fees except the technology fee.

Graduate students enrolled in evening-only programs, as approved by the provost and executive vice president for academic affairs or his/her designee, are exempt from the Health Services and Counseling fees.

Doctoral students who have achieved candidacy may petition for a waiver of the mandatory student fees. A waiver will be granted under the following circumstances:
The student must be advanced to candidacy and enrolled only in 999 prior to the beginning of classes.
The student cannot be on an assistantship or fellowship, unless such support covers research that is being conducted out of the geographic area (75 miles).

The student has recently relocated and/or permanently resides out of the immediate geographic area (75 miles) prior to the beginning of classes. The 75-mile radius may be waived if the student is not receiving University support, has met the one-year residency requirement, is working full-time and will only be on campus sporadically to meet with his or her adviser, or if the student has completed all requirements for the degree prior to the end of the drop/add period (end of the third week).

The student is temporarily out of the region (75 miles) for at least one semester, conducting research related to his or her dissertation. The student has a family emergency, illness, or has provided the dean of the Graduate School other information to warrant an exception. (Information will be provided with the petition as appropriate.)

Authority
Any conflicts resulting from this procedure will be adjudicated by the provost and executive vice president for Academic Affairs and the vice president for Finance and Administration or his/her designee.

Special Fees
Differential Tuition
Students majoring in accounting, computer science, economics, and engineering will be charged a tuition differential. Students in these programs who are registered for Doctoral Research (999) or Masters-Continuing Research (GRAD 900) are considered full time and pay the full tuition differential. The current academic year rates are published annually.

Continuing Enrollment Fee
Students registered for Continuing Enrollment (GRAD 800) will pay a continuing enrollment fee. This fee will be waived for students who subsequently register for course credits or research within the semester.

Master’s Continuing Research Fee
Master’s students registered for Master’s Continuing Research (GRAD 900) will pay a continuing research fee plus full mandatory fees.

Doctoral Research Fee
Doctoral students in residence and registered for Doctoral Research (999) will pay a doctoral research fee plus full mandatory fees. Students who register for coursework in addition to Doctoral Research will pay the appropriate additional tuition charges up to the appropriate maximum tuition rate for full-time students. Doctoral candidates not in residence who are conducting their research away from the Durham campus may petition for a waiver of the mandatory fees.

Other Charges and Fees

Overload
Graduate students are charged full tuition plus the appropriate course charge for each credit beyond 16, if registered for more than 16 credits 30 days after the semester has begun. (No refund will be made if a student subsequently drops a course, reducing his or her course load to 16 or fewer credits.) Tuition waivers awarded with assistantships and scholarships do not cover charges for overload.

Zero-Credit Seminars
Seminars for 0 credit are billed as if they were for 1 credit.

Audit
Charges for auditing a course are the same as those for taking it for credit.

Late Fees
A $25 late registration fee is charged to students who register after the last day scheduled for graduate registration. Late fees are also charged for changes in registration as follows: A $25 fee is charged for each course dropped after the third Friday of classes; a $25 fee is charged for each course added after the third Friday of classes. The late-add fee is charged in addition to the reinstatement fee when students register after the third week of classes. A change of section (within the same course) is accomplished by a “drop” of one section and an “add” of another section. The fee will not be assessed for the add portion of a late section change but the $25 drop fee will still apply for the drop portion of the late section change. Late fees are also charged on accounts remaining unpaid by mid-semester.

Reinstatement Fee
A reinstatement fee is charged to any student who has his or her degree status discontinued and subsequently petitions to be reinstated during the same semester that the action to discontinue the degree status was taken. This fee will not be waived.
Registration Fee
Part-time students (i.e., those registering for 1 to 8 credits) pay a nonrefundable registration fee.

Student Health Benefits Plan
Health insurance is required as a condition of enrollment for full-time degree students at the University of New Hampshire beginning with the 2007-2008 academic year. Students will have the option of waiving this requirement if they present proof of adequate coverage; alternatively, students can acquire an affordable health benefits plan sponsored by the University. Information about the University's Student Health Benefits Plan can be found at www.unh.edu/health-services/shbp. Students with F-1 or J-1 visas are required to enroll in the UNH Student Health Benefits plan. They are not eligible to waive coverage.

Refunds
Tuition and mandatory fees are refundable during the academic year in accordance with the calendar published by the Registrar's Office (UNH Academic Calendar). Students receiving federal financial aid will have their refund calculated in accordance with the U.S. Department of Education regulations in effect at the time of their withdrawal. Specific details regarding the regulations are available in the UNH Financial Aid Office.

Financial Assistance
Several forms of financial assistance are available to graduate students through the Graduate School and individual departments, most of which are awarded for an academic year commencing in the fall. To be eligible for any assistance, the student must first be admitted to the Graduate School. In most cases, the application for admission with supporting documents serves as the application for new graduate students for the scholarship and assistantship programs available to them. In other cases, individual departments have their own application forms. Students are advised to contact individual programs for more information about assistantships and scholarships, and any departmental application forms.

Scholarships and Fellowships

Graduate Scholarships for Merit
The Graduate School awards six scholarships annually to recognize the outstanding contributions of both master's and doctoral students for their teaching and scholarship. Availability and criteria for award of these scholarships are announced annually by the Graduate School.

Scholarships for Full-Time Students
Students who are full-time may be granted full or 1/2 tuition scholarships for the academic year or semester. These awards provide for waiver of tuition and are subject to the maintenance of a high scholastic record in the Graduate School. Application is made to the student's department or program.

Scholarships for Part-Time Students
Students who are part-time may be granted tuition scholarships, which provide a partial waiver of tuition charges. The scholarships are awarded each semester of the academic year. Applications are available at the Graduate School. University employees or family members who are eligible for staff benefits are not eligible to receive scholarships for part-time students.

Graduate Fellowships
The Graduate School offers a number of fellowships to entering students to assist programs in recruiting a high-quality and diverse student body. Availability and criteria for these fellowships are announced annually by the Graduate School. Students are nominated by their respective program coordinators.

Dissertation Fellowships
Dissertation fellowships for a maximum tenure of one academic year are available on a competitive basis to doctoral students who have been advanced to candidacy. These awards include a stipend and a waiver of the doctoral research and mandatory fees for the period of the award. Application is made to the dean of the Graduate School.

Summer Fellowships for Teaching Assistants
A limited number of summer fellowships are awarded to students who have held graduate assistantships involving teaching during a previous academic year. Application is made to the dean of the Graduate School.

Graduate Appointments 2009-2010
The University offers a variety of forms of financial assistance to graduate students in support of their efforts to obtain a graduate degree. Graduate appointments are made to post-baccalaureate students who have been regularly or provisionally admitted to the Graduate School and who have been recommended by the appropriate department or program and approved for appointment by the Graduate School. Appointments are normally for one academic year and may be renewed provided that funds are available and that the student's academic performance, as well as performance in carrying out the responsibilities of the appointment, is satisfactory.

Graduate Assistants: Graduate assistants are students who provide instructional or administrative support as specified by the appointing department and are normally supported by university funds.

Graduate Part-time Lecturers: Graduate part-time lecturers are students who because of their specific expertise are appointed to teach one or two courses per semester and are normally supported by university funds.

Graduate Interns/Trainees: Graduate interns/trainees are students who are assigned to a specific project or subject area to acquire additional learning experiences and are normally supported by external funds.

Graduate Fellows: Graduate fellows are students who have been awarded a fellowship normally through an external grant to the University of New Hampshire or directly to the student. Appointment will normally not exceed one fiscal year and may be renewed in accordance with the terms of the fellowship program.

Graduate Research Assistants: Graduate research assistants are students who are appointed to conduct research on grants supported by the Agricultural Experiment Station, or external grants and contracts.

Graduate Supplemental Appointments: F-1 and J-1 students on full assistantships may not accept additional appointments while school is in session. All other graduate students on appointment in one of the above categories may supplement their regular appointments for up to an average of 10 hours per week. Such appointments may be processed as stipends or hourly. Assistants who serve at TAs during the January term receive a supplemental appointment if the workload exceeds the 20 hours they are normally expected to work.
Graduate Stipend Only Appointments: Graduate stipend only appointments may be made to students during the academic year under one of the above categories. Students on such appointments have responsibilities of less than those of students on regular graduate appointments; have a workload of less than that of students on regular graduate appointments, and receive a lower stipend than students on regular graduate appointments.

Graduate Hourly Appointments: Graduate hourly appointments are appointments made to students in support of the instructional, administrative or research activities of the university. Students on such appointments have responsibilities of less than those of students on regular graduate appointments.

Graduate Summer Appointments: Graduate summer appointments are appointments made to students during the summer in one of the above categories. Students on summer appointments may work for up to forty hours per week. Graduate students working full time on research or combined teaching and research for the entire summer earn 2/3 of their prior academic year stipend. Appointments for less than the maximum time are prorated.

International students (F-1 and J-1) must consult the Office of International Students and Scholars to confirm employment eligibility.

Stipends: Level 1 - $14,300 all masters' students and PhD students with a bachelor's degree who have less than 2 years experience as a GA or RA at UNH; Level 2 - $15,300 PhD students with a Master's degree or PhD students with a bachelor's degree who have 2 years experience as a GA or RA @ UNH; Level 3 - $16,300 PhD students @ candidacy. Departments may pay a higher base stipend for assistants to meet the recruitment needs of their students on such appointments have responsibilities of less than those of students on regular graduate appointments.

Appointment Dates: The beginning and ending dates for the 09-10 Academic Year are August 24, 2009 to May 21, 2010. The corresponding semester dates are August 24, 2009 to January 6, 2010; and January 7, 2010 to May 21, 2010. Appointment dates for graduate part-time lecturers hired to teach on a course-by-course basis for a semester or term are August 31, 2009 to December 18, 2009; January 4, 2010 to January 25, 2010; and January 26, 2010 to May 21, 2010.

Workload: Students on full assistantships are involved in assistantship activities for twenty hours a week during the academic year. The workload for students on stipend only and hourly appointments is specified at the time of appointment. The workload for students in both of these categories is less than 20 hours per week.

Registration: All graduate students holding appointments must be enrolled as students in order to hold an appointment during the academic year. Assistants, fellows or graduate part-time lecturers must register for a minimum of 6 course/thesis credits, Master's Continuing Research or Doctoral Research during each semester in which they hold their appointments. Interns/trainees must register according to terms specified in their contracts. Students holding a stipend only or hourly appointment must register for course/thesis credits (no minimum), Master's Continuing Research, or Doctoral Research. Students registered for Continuing Enrollment (GRAD 800) are not eligible to hold an appointment. Students holding summer appointments have no required enrollment unless specified by their appointment.

Tuition Waivers: Students appointed as assistants, fellows and lecturers receive tuition waivers in addition to their stipends during the period of their appointment. Assistants and fellows on FY or spring only appointments receive tuition waivers for the January term. Graduate part-time lecturers receive tuition waivers for the January term only if they are teaching during that term. Students on stipend only and hourly appointments do not receive a waiver. Such students may be eligible for tuition scholarships. Graduate assistants may also receive tuition waivers for the summer following their appointment. Summer waivers are prorated for students who had less than a full academic year appointment. Research assistants and fellows may also receive tuition waivers for the summer if approved by their funding source. Waivers cover only course work that is directly related to a student's academic program.

Student Health Benefits Plan (SHBP): Students appointed as assistants, fellows and graduate part-time lecturers for the full academic year receive a waiver for the university's Student Health Benefits Plan (SHBP) during the period of their appointment. Students on a fall only appointment and continuing in the graduate school for the spring semester full time receive a waiver for the SHBP for the fall and will be responsible for the spring portion of the plan costs. Students on a fall only appointment and continuing in the graduate school for the spring semester on a part time basis receive a waiver for the SHBP for the fall, have the option of continuing on the plan for the spring, and will be responsible for the spring portion of the plan costs. Students on a spring only appointment will receive a waiver for the SHBP for the spring.

Mandatory Fees: Students appointed as assistants, fellows and lecturers receive a fee waiver for the technology fee during the period of their appointment. Course fees are also covered by the waiver. The Health Services and Counseling fee, the Memorial Union fee, the Student Recreation fee and the Transportation fee are not covered by waivers, although scholarships maybe awarded to individual students to cover these fees.

FICA taxes will generally be withheld from wages paid to any graduate student registered for less than 1/2 time (less than 5 credits per semester during the academic year; or less than 3 credits per session in the summer).

Note: Students registered for Doctoral Research (999) or Master's Continuing Research (GRAD 900) are full-time and will not have FICA taxes withheld. In summer students enrolled for 3 or more credits of "899" or "independent study" will generally not have FICA withheld.

Federal income taxes will be withheld from wages paid to graduate students based on information supplied to USNH Payroll on IRS Form W-4. The value of the SHBP waiver is considered a scholarship and may be reportable to the IRS and subject to tax withholding for foreign students. Both wages and scholarships may be exempt from withholding if the student is from a foreign country with tax treaty provisions that exempt these payments. The appropriate IRS Form 8233 or W-8BEN must be on file in USNH Payroll in order for a foreign student to claim these exemptions.

Criminal background checks are conducted for all graduate students appointed as a teaching assistant (TA), research assistant (RA), graduate assistant (GA) or graduate part time lecturer, graduate fellow or graduate intern/trainee. Graduate students on stipend only or hourly appointments may also be required to undergo a background check depending on the nature of their appointment. These investigations are mandated by University policy requiring a pre-employ-
The student's hiring unit making the original recommendation reconsider the decision. The student's request should be written and should contain any information that the student feels warrants a reconsideration of the decision. A copy of the request should be sent to the dean of the Graduate School. As soon as possible after receiving this request, the hiring unit will reconsider the decision and notify the student and the dean of the Graduate School of the results of the deliberations in writing.

Step 2: If the student is not satisfied with the decision reached in Step 1, s/he may request that the dean of the Graduate School review the decision. The student's request should be in writing and must stipulate the reasons for his/her dissatisfaction with the decision reached in Step 1. The Step 2 appeal will be heard by the Student Affairs Committee of the Graduate Council, unless the student requests that the dean or the dean's designee hear the appeal. When the appeal is heard by the dean's designee or the Student Affairs Committee, a recommendation is made to the dean, who will render a decision. The dean's decision will be communicated in writing to the student, the hiring unit and the hiring unit's college dean, director or vice-president.

Federal Financial Aid
Graduate students who are enrolled in a degree program at least half time (5 or more credits per semester) and are a U.S. citizen or eligible non-citizen may be considered for Federal Financial Aid. Graduate students are reviewed for loans and work study. There are no Federal or University grants or scholarships awarded to graduate students by the UNH Financial Aid Office.

To apply for Federal Financial Aid you must complete the Free Application for Federal Student Aid (FAFSA) or a Renewal Application. You can complete a paper application or find this form online at www.fafsa.ed.gov. The UNH priority deadline for applying for financial aid is March 1. This is the date by which the FAFSA/Renewal Application must be received by the Federal processor. However, students applying after March 1 will still be considered for the Federal Stafford Loan, which is not subject to the priority deadline.

Graduate students must also complete a Graduate Student Aid Verification Form and a Graduate Student Credit Verification Form before their application can be reviewed. These forms are available at the UNH Financial Aid Office or can be found on their Website at http://financialaid.unh.edu. Be aware that the Financial Aid Office will make their offer of aid based on your actual tuition charges. If you will be enrolled for less than 9 credits or paying reduced tuition in either semester, your aid package may be adjusted. If you change your status (i.e., from full to part time), receive a scholarship, tuition waiver or other resource, or correct and/or change the information on the FAFSA, an aid adjustment may result.

Types of aid available:
Federal College Work Study utilizes federal funds to provide employment opportunities to graduate students who file on time and demonstrate financial need.

The Federal Perkins Loan is a federally funded loan program administered by UNH and is available to graduate students who file on time and demonstrate exceptional need.

The Federal Subsidized Stafford Loan is a federally funded loan available to graduate students who demonstrate financial need.

The Federal Unsubsidized Stafford Loan is available to graduate students regardless of financial need. For more information about the Stafford Loan Programs visit www.nhheaf.org.

Please feel free to visit the UNH Financial Aid Website at www.unh.edu/financial.aid for further information or call (603) 862-3600 to speak to an information specialist or to set up an appointment with the Graduate School Coordinator.

Veterans Benefits
Veterans and their dependents should investigate their eligibility for veterans benefit payments. Questions may be addressed to any local Veterans Administration office or the UNH veterans coordinator, Registrar’s Office at (603) 862-1595.

Satisfactory Academic Progress
Satisfactory progress in a course of study must be maintained by all students who receive federal financial aid. The current standards for satisfactory academic progress are available upon request from the Financial Aid Office.
**Academic and Support Services**

**Library**  
www.library.unh.edu

The UNH Library comprises the main Dimond Library, four specialized branch libraries, an extensive government documents collection, and the Douglas and Helen Milne Special Collections and Archives. In addition to more than two million volumes and access to 60,000 periodicals, the library has government publications, maps, music scores and sound recordings, compact discs, videotapes, DVDs, and manuscripts. The library offers extensive electronic resources, including electronic journals, dissertations, databases, and full-text resources. The Dimond Academic Commons (DAC)-Main Floor features “one-stop” shopping for information needs, including reference assistance, IT help, high-tech equipment, and collaborative work space. Study rooms are also available for groups of four to twenty-five. Students can sign up for Graduate Carrels in the library administration office. Wireless access, computer workstations, loaner laptops and laptop hookups are available throughout the building.

The library is a member of the elite Boston Library Consortium. Through the consortium, UNH faculty, faculty emeritus, students, and staff at both the Durham and Manchester campuses have full access to a combined collection of more than 34 million volumes via interlibrary loan and on-site visits to member libraries. The library has a membership at the Boston Museum of Fine Arts, which provides free access to students and passes for faculty and staff.

The four branch libraries specialize in science, mathematics, and engineering. The Biological Sciences Library is located in Kendall Hall; Chemistry Library is in Parsons Hall; Engineering/Mathematics/Computer Science Library is in Kingsbury Hall; and the Physics Library is in DeMerritt Hall. All branch materials are indicated in the UNH Library catalog.

**Information Technology (IT)**  
http://it.unh.edu/

Computer access: All students have access to networked computing resources on campus. UNH has five microcomputer clusters, which offer more than 220 Dell Pentium and Apple Macintosh computers as well as high-speed laser printing. All clusters are completely networked and offer a suite of software; access to the Internet via the World Wide Web; and are staffed by student consultants. Two clusters are available 24 hours/day.

Training: Each semester, short courses are offered on a variety of topics. Register for a short course via the Web. Facilities with Dell Pentium and Apple Macintosh systems may be reserved by faculty and students for hands-on training.

Purchase and repair: Students may purchase their own computers at the UNH Computer Store, which sells Apple and Dell computers; Apple, Epson, and Hewlett-Packard printers; and a variety of supplies, peripherals, and software at educational pricing to members of the UNH academic community. The Computer Service Center (CSC), located in the MUB, provides hardware and software repairs for UNH faculty, staff, and students. CSC technicians are certified to perform warranty repairs on certain Dell, Apple, and Hewlett Packard products. One University telephone dial tone connection is available in each UNH Housing room.

CIS Call and Dispatch Center: As a unit of Help Desk Professional Services, the CIS Call and Dispatch Center provides UNH and USNH faculty, students, and staff with a centralized contact point for computer-related questions and concerns.

Dimond Academic Commons IT Support Center, cis.unh.edu/lac-itsc: The IT Support Center (ITSC) is one component of the Dimond Academic Commons (DAC) located on Level 3 (Main Level), Dimond Library. DAC provides “one-stop shopping” for students to get help with their academic work including using library resources and consulting help with computer, communications, and phone questions.

The DAC ITSC has friendly staff to help:
* Clean viruses and spyware from your laptop
* Learn how to stay virus- and spyware-free
* Get connected - including wireless
* Use Blackboard
* Use Word, Excel, & PowerPoint
* Repair damaged files
* Drop off exam-scan test sheets & surveys
* Fix computer account problems and re-set passwords
* Scan documents & images
* Set up your laptop to print to the library printers

ResNet, cis.unh.edu/resnet: UNH's Residential Network provides a high-speed network connection for each student living on campus. ResNet services enable students to connect to the UNH network and stay connected. ResNet staff is located in the Dimond Academic Commons IT Support Center on Level 3 (Main Level) in the Dimond Library.

UNHINFO www.unh.edu/: UNH is main Web server functions as the starting search point to find any on-line University information such as events, jobs, courses, directories, departments, and much more. UNHINFO is accessible to computers with a network connection, including the student computing centers, dorms, and Internet service providers.

**Graduate Student Housing**  
www.unh.edu/housing

**Babcock Hall and Forest Park Apartments**

Babcock Hall is a community of 180 graduate, international, and nontraditional students. Six-story Babcock Hall combines social, educational, and cultural opportunities with the convenience of on-campus living. All rooms are single occupancy, simply furnished, and are wired for telephone, cable television, and Internet access. Each floor has a kitchenette and several study and television lounges available for residents’ use. The building has table tennis, a piano, a fireplace, and laundry facilities located on the lobby level.

Family housing at the Forest Park Apartment Complex provides campus housing for married students, students with dependent children, single graduate students and newly appointed faculty members. The community at Forest Park is diverse, with students and faculty members from all over the world. The three-acre complex is located on the southern edge of campus, within close walking distance of UNH academic and administrative buildings and Durham's shopping and business district. The two- and three-story buildings within Forest Park house 97 apartments. These include studio (efficiency), one-bedroom, and two-bedroom apartments.

Following acceptance to the Graduate School, any student interested in on-campus housing should contact the University’s Department of Housing.
Summer Housing

Rooms in Babcock Hall are available to graduate students taking courses during the summer. Students interested in summer accommodations should contact the Department of Housing. Off-campus housing is listed on the Web at www.unh.com/housinglist.

Dining Services
www.unh.edu/dining

University Hospitality Services works hard to exceed its guests’ expectations. Dining halls offer hot entrees, vegetarian and vegan dishes, a variety of specialty bars, salad bars, and a well-stocked deli. In addition, the MUB Food Court, MUB Coffee Office, Wildcatter’s, Philbrook Café & #233;, The Gables Convenience Store, and with Panache offer grab-and-go foods. A variety of meal plans are available to all UNH community members. Cash, Cat’s Cache (the UNH debit program), and Dining Dollars are accepted as well.

Campus Recreation
http://campusrec.unh.edu

The Hamel Student Recreation Center is available to all full-time matriculating students and Recreation Pass holders, seven days a week (excluding UNH holidays and shutdowns).

The center offers participants two multipurpose courts, a group exercise studio, club/martial art studio, a fitness center, basketball/volleyball courts, an indoor track, a lounge, locker rooms, towel and lock service at the equipment room, saunas, a bouldering wall, indoor pool, and several grass and two synthetic sports fields.

Participants may participate in group exercise classes such as step aerobics, Reebok cycling, or cardio kickboxing. Noncredit courses are also offered including CPR and First Aid.

The intramural sports program consists of 25 different sports and activities offered through co-rec and to men’s and women’s teams. There are also 27 sport club teams.

Ice skating in the Whittemore Center arena is available during nonpeak/nonteam hours.

During the summer, the Department of Campus Recreation manages a large outdoor recreation facility on Mendum’s Pond in Barrington and an outdoor pool located on Edgewood Ave.

Memorial Union Building
www.unhmb.com

The “Heart of Campus” is the Memorial Union Building (MUB). The original building was a gift from UNH alumni and is the official state war memorial. It is the location for lectures, cultural programming, and a large number of free or inexpensive entertainment programs and activities.

The MUB was the first building on campus to have complete wireless capabilities in all public spaces and meeting rooms. Key areas of the MUB are the Information Center, two movie theaters, Games Room, the UNH Copy Center, the UNH Bookstore, the UNH Computer Store, the Ticket Office, and specific lounge/study space for both nontraditional and graduate students. On the second floor, student mailboxes are available for free for graduate students at Granite Square Station. Close by, mailing and shipping services are also available at Granite Square Shipping. Computing and Information Services provides a computer cluster. The Food Court offers expanded dining options, and limited drinks and popcorn are also available at “The Notch” on the third floor. More than 60 student organizations have office space in the MUB.

Student Organization Services (SOS), a division of the Memorial Union, is responsible for service to more than 200 student organizations and assists students with the mandatory registration and recognition process.

Off-Campus and Commuter Services
www.unhmb.com/off-campus

Found within the Leadership Center, located in the Memorial Union Building, Room 122, Off-Campus and Commuter Services provides resources, services, and programs for all students living off campus. Included are listings for off-campus housing, tenants’ rights information, and community, and UNH information contained in our Community Guide (available as a PDF on our website). We also host programs such as Commuter and Transfer Survival Day (an orientation program for all new UNH students held before classes begin each semester), Commuter Appreciation Day, Good Morning Commuters, and many others. The Commuter Connection is a great weekly resource—an e-mail containing UNH events, activities, and programs-submit to www.unhmb.com/off-campus. In addition, specific programming and support is offered for student veterans and nontraditional students.

The Leadership Center
www.unhmb.com/leadershipcenter

Located in Memorial Union Building (MUB), Room 122, the Leadership Center is the home of Student Organization Services, Project LEAD Leadership Development Programs, Greek Life, and Off-Campus and Commuter Services. We are the place to help you get involved on campus! Find information ranging from student organizations, fraternities and sororities, sample apartment sublet agreements, staying connected to campus, and much more.

Health Services
www.unh.edu/health-services

The University has a state-licensed and nationally accredited health and wellness program.

Medical Services

Health Services provides comprehensive, student-focused, primary medical care through a team approach. The clinical staff consists of board-certified physicians, nurse practitioners, nurses, and medical assistants who are committed to prevention and holistic care. Primary medical care is provided for a large variety of common concerns. Examples include respiratory illnesses, injuries, asthma, dermatologic issues, intestinal disorders, and mental health. Women’s health services include annual examinations, diagnoses and treatment related to abnormal Pap smears, testing and treatment for sexually transmitted infections, contraceptive services, pregnancy testing and counseling, limited sexual assault services and other women’s health concerns. An outreach nurse assists with problems arising from hospitalization and health withdrawal and return to campus. Other services include allergy/immunization clinics, sports medicine services, and travel clinic. One may speak by telephone with a triage nurse for advice at any time. Clinical support services include laboratory, radiology, and pharmacy. Not all services are available during the summer or breaks.

During the academic year, UNH Health Services has an agreement with a local hospital to provide after-hours services when a student’s medical needs cannot wait until Health Services is open.

Well-staffed and well-equipped community hospitals are nearby and emergency ambulance service is available in Durham at all times.
Office of Health Education and Promotion
The Office of Health Education and Promotion coordinates health promotion activities on campus. Services provided include educational programs/workshops, individual and group support to promote healthy lifestyle choices, education and support to students living with chronic illnesses, confidential HIV testing and counseling, alcohol and other drug counseling, nutritional counseling, stress management counseling, biofeedback, light therapy, massage therapy, smoking cessation services and a resource library with materials on a variety of health and wellness topics.

Student Health Benefits Plan
Health insurance is required as a condition of enrollment for full-time degree students at the University of New Hampshire. Students have the option of waiving this requirement if they present proof of adequate coverage; alternatively, students can acquire an affordable health benefits plan sponsored by the University. Information about the University’s Student Health Benefits Plan can be found at www.unh.edu/health-services/shbp.

Health Record Requirement
In order to provide effective care, Health Services requires that students who have been formally accepted for a graduate program in Durham, and who register for five or more credits, must have medical records on file with Health Services. The information will include two forms provided by Health Services on its Web site at www.unh.edu/health-services. These include an immunization form, to be completed by a medical provider and mailed to Health Services, and a health history form, to be completed by the student online. Proof of immunity to measles, mumps and rubella (MMR) is mandatory (UNH Academic Policy 02.14). Students must meet one of the following criteria for proof of immunity to MMR: received two live-virus MMR vaccinations at least one month apart after 12 months of age, or had a positive MMR titer (blood test), or obtain health provider documentation of past history of MMR, or have been born before 1957. A student requesting a religious or medical exemption from MMR vaccinations must submit a formal exemption form from his/her religious organization or health care provider and complete the UNH Health Services Request for Exemption. Students from countries where tuberculosis (TB) is endemic are required to either provide documentation of being tested within six months prior to enrollment or documentation of treatment for either latent or active TB or a negative chest x-ray if the test is positive. It is the student’s responsibility to complete the forms before the beginning of classes. Any student failing to complete these requirements may not be cleared to register for future classes.

Counseling Center
www.unhcc.unh.edu
The Counseling Center offers confidential professional consultation, individual and group therapy, and educational workshops for a broad range of emotional, psychological, and interpersonal concerns.

Appointments can be made over the phone or in person. In addition, emergency services are offered, 24 hours a day, seven days a week. All information about a student’s visits to the Counseling Center is confidential and cannot be released without the written permission of the student.

The staff comprises licensed psychologists, counselors, and consulting psychiatrists. The Counseling Center is fully accredited by the International Association of Counseling Services, Inc. and offers a predoctoral internship training program that is accredited by the American Psychological Association.

Center for International Education
www.unh.edu/cie
The Center for International Education is the clearinghouse for international activities on campus. It administers the dual major in international affairs, undergraduate study abroad, and annual scholarship competitions for the Student Fulbright Program and the National Security Education Program. Each semester, CIE also offers international enrichment opportunities through its New Hampshire International Seminar series and Faculty International Development Grants on a competitive basis.

Disability Services for Students
www.unh.edu/disabilityservices
The University of New Hampshire is committed to providing students with documental disabilities a living and learning experience that assures equal access to programs and facilities. The University will make reasonable accommodations, as supported by documentation, to promote maximum independence and access to the full range of college activities at UNH.

All students with disabilities who anticipate the need for academic and non-academic accommodations & services should self-identify and provide written documentation to the office. Please submit documentation to Disability Services for Students (DSS), Memorial Union Building, Room 118, (603) 862-2607 (Voice/TTY), or email disability.office@unh.edu as soon as possible after acceptance, to assure accommodation of disability and smooth coordination of available services. All disability related documentation is strictly private and remains in the DSS office.

Diversity Initiatives
http://www.unh.edu/diversity/index.html
Through educational programming, staff training opportunities and academic research, our goal is to make the University of New Hampshire a more diverse, respectful community—one that communicates to all of its members that they are respected, and that their contributions are valued.

Commitment to Diversity
Diversity is a community value at the University of New Hampshire. We are committed to supporting and sustaining an educational community that is inclusive, diverse, and equitable. The values of diversity, inclusion, and equity are inextricably linked to our mission of teaching and research excellence, and we embrace these values as being critical to development, learning, and success. We expect nothing less than an accessible, multicultural community in which civility and respect are fostered, and discrimination and harassment are not tolerated. We will ensure that underrepresented groups and those who experience systemic inequity will have equal opportunities and feel welcome on our campus. We accept the responsibility of teaching and learning in a diverse democracy where social justice serves as a bridge between a quality liberal education and civic engagement.

International Students and Scholars
www.unh.edu/oiss
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www.unh.edu/oiss

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the OISS to ensure University compliance with U.S. immigration and employment regulations and to assist international students, exchange scholars, faculty, and staff in the achievement of their academic and professional goals.

The OISS staff provides counseling, information on University policies, administrative support, and referral services. A variety of social and educational programming activities is offered, including orientation for incoming students, faculty and staff, and others.

All international students are encouraged to maintain contact with the OISS and are required by law to report changes of address, academic program, or source of educational funds.

Office of Multicultural Student Affairs (OMSA)
www.unh.edu/omsa

OMSA creates opportunities for people to participate in an inclusive community and to explore and understand diversity, social justice, inclusion, and equity via programs, trainings, retreats, brown-bag discussions, etc. We serve all members of the UNH community through these various opportunities and beyond.

Our work is grounded in understanding diversity that includes people of all abilities, ages and ethnicities, genders, nationalities, races, religions/spiritual traditions, socioeconomic classes, and sexual orientations.

Providing support, advising, and development opportunities for African American/Black, Latino/a, Native American, Asian/Asian American, Pacific Islanders, and Lesbian, Gay, Bisexual, Transgender, Queer, and Questioning students is at the heart of our work.

We are located in the Memorial Union Building (MUB), Room 327. We look forward to serving you.

President’s Commissions

President’s Commission on the Status of Gay, Lesbian, Bisexual, and Transgender Issues
www.unh.edu/gltb

The UNH President’s Commission on the Status of Gay, Lesbian, Bisexual and Transgender Issues facilitates the development of a University community that is equitable and inclusive of all sexual orientations and gender expressions.

President’s Commission on the Status of People of Color
www.unh.edu/cspc

The UNH President’s Commission on the Status of People of Color proposes, recommends, and evaluates programs, policies, and services aimed at enhancing diversity and supporting people of color within the UNH community.

President’s Commission on the Status of People with Disabilities

The mission of the President’s Commission on the Status of People with Disabilities is to promote empowerment and inclusion of students, faculty and staff and guests with disabilities at the UNH. The Commission acknowledges that people with disabilities are a diverse group that includes individuals with visible and non-visible disabilities. The commission shall provide a forum for discussion and assessment of disability-related issues and opportunities that are relevant for the campus and larger community. The mission is motivated by the belief that people with disabilities are assets to our community, adding value and diversity to our living, working and learning environment.

For information and resources on disability issues, visit the University’s Diversity Initiatives Web site, http://www.unh.edu/diversity/. Other University resources include the Affirmative Action and Equity Office, http://www.unh.edu/affirmativeaction/, and the Institute on Disability, http://www.iod.unh.edu/.

President’s Commission on the Status of Women
www.unh.edu/womens-commission

The mission of the UNH President’s Commission on the Status of Women is to create equal employment and educational opportunities for all UNH women by promoting an environment free of sexism and discrimination through policy, advocacy, and education.

Each of the four commissions comprises faculty, staff, and students (undergraduate and graduate).

Sexual Harassment and Rape Prevention Program
www.unh.edu/student-life/sharpp

The Sexual Harassment and Rape Prevention Program (SHARPP) is a crisis intervention center dedicated to providing free and confidential services for all members of the University community. SHARPP operates a 24-hour crisis line to respond to the needs of survivors of sexual assault, sexual harassment, childhood sexual abuse or incest, intimate partner violence, and stalking. SHARPP provides crisis services for those who are close to the survivor. Additionally SHARPP presents a wide range of programs to the University community.

UNH Transportation Services
www.unh.edu/transportation

UNH Transportation Services administers visitor parking; parking for faculty, staff, and students; and University mass transit. Other services offered by Transportation Services are Cat Courier, Guaranteed Ride Home, and Safe Rides and the Bike Program.

Wildcat Transit

Wildcat Transit Bus Service provides public transportation from Durham to Dover, Portsmouth, and Newmarket, with connections to other local and interstate bus service providers.

Campus Connector is the on-campus bus service.

The Campus Connector provides free service for students and visitors throughout the campus and the town of Durham.
**Wildcat Access**
Wildcat Access provides rides for people with either permanent or temporary disabilities who cannot access Campus Connector around campus.

**University Police**
www.unh.edu/upd
The University Police Department is committed to the enforcement of laws and University policies supportive of the rights and dignity of all persons. The department seeks to maintain a campus environment in which learning may thrive. Self-defense courses and crime prevention literature are some of the services they offer. A walking patrol provides an escort service for students, faculty, and staff. Officers, professionally trained in their respective areas, staff both the police and Security Services units.

**Veterans Information**
The UNH veterans’ coordinator, located in the Registrar’s Office, provides counseling on all aspects of veterans’ benefits and assistance in procuring and completing the required forms and certifications for veterans’ benefits. The veterans’ coordinator maintains a comprehensive directory to assist veterans in contacting state, local, and University resources. The coordinator also provides a framework for networking among campus veterans. For further information, call (603) 862-1595 or e-mail Lonn Sattler at Lonn.Sattler@unh.edu.

**Research and Scholarship**
The University is a land-, sea-, and space-grant institution and is ranked among the top 125 top research universities. In recent years graduate students at the University have been awarded a number of highly competitive fellowships from EPA, Ford, Fulbright, Merck, NASA, NIH, NOAA, and NSF.

The University’s research and scholarly activities range from highly specialized investigations in the physical and biological sciences to broad interdisciplinary studies.

Graduate students are intimately involved in these activities and are expected to be familiar with the policies and procedures outlined by the Office of Sponsored Research and the Office of Research Partnerships and Commercialization.

**Research at UNH**
http://www.unh.edu/research/
For an overview of all research news and activities at the University, including resources for graduate students, visit this Web site.

**Centers and Institutes**
www.unh.edu/research/centers.html
Research and educational activities are conducted not only in individual departments but also in multidisciplinary research centers and institutes. Visit this Web site for an annotated list of University centers and institutes, which includes links to their individual sites.

**Office of Sponsored Research**
www.unh.edu/osr/
The Office of Sponsored Research (OSR) fosters and facilitates research and scholarly activity, serves as steward for externally sponsored programs, and promotes accountability and compliance. Research is conducted according to ethical principles provided by professional associations, and federal regulations and guidelines. Accordingly, UNH has institutional policies governing the conduct of research and scholarly activities, including but not limited to the use of animal subjects, human subjects, hazardous materials, misconduct, and financial conflict of interest.

The University prides itself on extensive research endeavors and the involvement of graduate students in research projects. The University, therefore, has an obligation to teach and actively promote integrity in research and scholarship. As a graduate student here, it is your responsibility to be familiar with University policies that govern your research activities at the University. For more information, visit the Research Conduct Issues page.

http://www.unh.edu/osr/compliance_main.html.

**Office of Research Partnerships and Commercialization**
www.orpc.unh.edu
The Office of Research Partnerships and Commercialization (ORPC) is charged with the responsibility for managing UNH’s intellectual property in accordance with UNH’s Intellectual Property Policy.
**Graduate Programs**

**Master of Arts**
- Economics
- English
  - Language and Linguistics
  - Literature
- Environmental Education
- History
  - Museum Studies
- Justice Studies
- Music
  - Music Education
  - Music Studies
- Political Science
- Sociology
- Spanish

**Master of Science**
- Accounting
- Animal Sciences
- Biochemistry
- Chemical Engineering
- Chemistry
- Civil Engineering
- Communication Sciences and Disorders
  - Early Childhood Intervention
  - Language and Literacy Disabilities
- Computer Science
- Earth Sciences
  - Geology
  - Ocean Mapping
  - Oceanography
- Electrical Engineering
- Family Studies
  - Marriage and Family Therapy
- Genetics
- Hydrology
- Kinesiology
- Management of Technology
- Materials Science
- Mathematics
  - Applied Mathematics
  - Statistics
- Mechanical Engineering
- Microbiology
- Natural Resources
  - Environmental Conservation
  - Forestry
  - Water Resources
  - Wildlife
- Nursing
- Nutritional Sciences
- Occupational Therapy

Ocean Engineering
Ocean Mapping
Physics
Plant Biology
Recreation Management and Policy
  - Recreation Administration
  - Therapeutic Recreation Administration
- Resource Administration and Management
- Resource Economics
- Zoology

**Master of Arts in Teaching**
- Elementary Education
- Secondary Education

**Master of Education**
- Administration and Supervision
- Counseling
- Early Childhood Education
- Special Needs
- Elementary Education
- Reading
- Secondary Education
- Special Education
- Teacher Leadership

**Master of Science for Teachers**
- Chemistry
- College Teaching
- English
- Mathematics

**Master of Arts in Liberal Studies**
- Liberal Studies

**Master of Business Administration**
- Business Administration

**Master of Fine Arts**
- Painting
- Writing

**Master of Public Administration**
- Public Administration

**Master of Social Work**
- Social Work

**Certificate of Advanced Graduate Study**
- Educational Administration and Supervision

**Doctor of Philosophy**
- Animal and Nutritional Sciences
- Biochemistry
- Chemical Engineering
- Chemistry
- Chemistry Education
- Civil Engineering
- Computer Science
- Earth and Environmental Sciences
- Economics
- Education
- Electrical Engineering
- English
- Genetics
- History
- Materials Science
- Mathematics
- Mathematics Education
- Mechanical Engineering
- Microbiology
- Natural Resources and Environmental Studies
- Ocean Engineering
- Physics
- Plant Biology
- Psychology
- Sociology
- Systems Design
- Zoology

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**The UNH Center for Graduate and Professional Studies in Manchester**

**Master of Arts in Teaching**
- Elementary Education
- Secondary Education

**Master of Education**
- Administration and Supervision
- Counseling
- Elementary Education
- Secondary Education

**Master of Business Administration**

**Master of Public Administration**

**Master of Public Health**

**Master of Social Work**

**Certificate of Advanced Graduate Study**
- Educational Administration and Supervision
Programs of Study

Accounting (ACFI)
www.wsbe.unh.edu/graduate-programs

Degree Offered: M.S.
The Master of Science in Accounting offered by the Whittemore School of Business and Economics prepares students to be competitively equipped to enter the job market. Designed for students with undergraduate degrees in accounting, the graduate program can be completed in one year. Applicants without an undergraduate degree in accounting can still apply but may need additional undergraduate business and accounting courses prior to beginning the graduate program.

Professional accounting associations have consistently stated the need for accountants to hold graduate degrees and most states (including New Hampshire) require (or will require) postbaccalaureate coursework as a prerequisite to sitting for the CPA. Upon graduation from the Whittemore School, students are trained and eligible to sit for the CPA exam in any state. While the Whittemore School’s program strives to ensure students have range and depth in the field, it also emphasizes strong analytical and communication skills as well as fostering awareness of ethical issues. Throughout the program students are required to represent the institution in the corporate community through internships, class projects, field trips, and networking events.

Admission Requirements
The primary admission period for the program is the fall. Admission requirements include a personal history that demonstrates high academic achievement, as well as the applicant’s potential and desire for graduate study in accounting. Applicants are required to submit copies of prior academic records, current GMAT scores, three references, and a complete Graduate School application. A baccalaureate degree program must be completed prior to beginning the M.S. program. Since the Whittemore School is accredited by the American Assembly of Collegiate Schools of Business, candidates must meet the requirements set down by this organization.

Admission to the program is highly selective and limited, so it is in the applicant’s best interest to apply early.

Degree Requirements
Upon admission to the program, applicants are required to complete ten courses detailed in the following program outline. All admitted candidates are expected to have completed a series of prerequisite courses. If an applicant has not completed all the prerequisite courses, the admissions committee may offer provisional admission and require that the applicant take the prerequisite courses prior to moving into full degree candidacy.

Prerequisites
ACFI 621 Intermediate Financial Planning I
ACFI 622 Intermediate Financial Planning II
MGT 647 Business Law I
ACFI 723 Advanced Managerial Accounting Concepts and Appl.
ACFI 724 Auditing
ACFI 726 Introduction to Federal Income Taxation

Fall Semester
ACFI 820 Corporate Taxation
ACFI 844 Topics in Advanced Accounting
ACFI 850 Accounting Theory and Research
ACFI 895 Government and Non-Profit Accounting
Elective: International Accounting (CAF pending)

Spring Semester
ACFI 890 Accounting Information Systems
ACFI 830 Topics in Advanced Auditing
ADMN 898 Elective: Business Law II
ACFI 897 Elective: Ethics & Professional Practice

Courses
ACFI 820 Corporate Taxation 3
ACFI 830 Advanced Auditing 3
ACFI 844 Topics in Advanced Accounting 3
ACFI 848 Law: Use and Application in Business 3
ACFI 850 Accounting Theory and Research 3
ACFI 890 Accounting Information Systems 3
ACFI 895 Governmental and Non-Profit Accounting 3
ACFI 897 Ethics and Professional Practices 3
ACFI 898 Master’s Project 3

Animal and Nutritional Science (ANSC)

Important Notice: The College of Life Sciences and Agriculture has recently undergone a major reorganization. The Department of Animal and Nutritional Sciences (ANSC) has recently been divided between two departments.

The Department of Biological Sciences, www.biolsci.unh.edu/, now offers the master of science degree in animal science.

The Department of Molecular, Cellular, and Biomedical Sciences, www.mecs.unh.edu/, now offers the master of science degree in nutritional sciences, the Ph.D. in animal and nutritional sciences, and a postgraduate internship in dietetics. Visit the nutritional sciences page for a link to NUTR courses.

Information on these programs is offered below and at the Web sites linked above.

Degree Programs Offered: M.S., Ph.D.
The graduate program includes the M.S. degree in animal sciences, or a Ph.D. degree in animal and nutritional sciences. Areas of research specialization include human nutrition, mammalian physiology and pathology, nutritional biochemistry and metabolism, reproduction and endocrinology. Research activities utilize human, animal, and cell culture systems to investigate nutrient metabolism and a molecular-level understanding of life processes and diseases.

Admission Requirements
Students applying for the M.S. or Ph.D. program will be expected to present recent (within five years) general Graduate Record Examination (GRE) scores and possess a background in basic sciences appropriate for advanced study in the proposed area of specialization (for example, courses in biology, chemistry, organic chemistry, biochemistry, and physics). Although not required for candidacy in the Ph.D. program, an M.S. degree is suggested for most students. The student’s committee may require certain undergraduate courses as part of the graduate program if additional competencies would be beneficial to the student.

Degree Requirements

M.S. in Animal Sciences
The M.S. degree in animal sciences trains students in the advanced study of animal nutrition, dairy management, and reproductive biology, and it prepares students for future careers in technical consulting, education, and research in academics, industry, or government agencies. The program of study must include a minimum of 30 graduate credits and completion of a thesis of publishable quality based on original hypothesis-driven research. A thesis committee will consist of
at least three members of the graduate faculty; one of these will be the primary mentor. Students will design a program of study in close consultation with the thesis committee, including academic courses and a proposal for a thesis research project. Candidates will be required to pass an oral examination based on graduate courses and a completed thesis. In addition, M.S. students are considered an integral part of the teaching program and, as such, are provided ample opportunity to gain teaching experience in a variety of courses.

The Department of Biological Sciences is the sponsoring department for the M.S. degree in animal science; however, faculty members in either the Department of Biological Sciences, http://www.biolsci.unh.edu/, or in the Department Molecular, Cellular, and Biomedical Sciences, http://www.mcbs.unh.edu/, may serve as mentors for M.S. degree students in animal sciences. Prospective students are encouraged to visit the Web sites for both departments to identify faculty members who may be suitable mentors for their research interests and professional goals. You may contact faculty members directly via the e-mail addresses listed on the faculty pages on the department websites.

UNH facilities include research laboratories, a conventionally managed herd of dairy cattle located at the Dairy Teaching and Research Center, just 10 minutes from campus-center, and a herd of organically managed dairy cattle located at the UNH Organic Dairy in Lee, N.H. There are excellent opportunities for qualified applicants to receive financial assistance in the form of either a teaching or research assistantship that provides a stipend, medical insurance, and a waiver of tuition fees.

Ph.D. in Animal and Nutritional Sciences

The Ph.D. in animal and nutritional sciences trains students to gain advanced knowledge and develop research expertise in such areas as the cellular and molecular biology of various nutrients, nutritional physiology and biochemistry, vascular biology and cardiovascular disease, immunology and genetics, obesity and diabetes, dairy nutrition, human nutrition, reproductive physiology and endocrinology. It prepares students for future careers in technical consulting, education, and research in academic, industrial, and government institutions. Students with appropriate academic training at the baccalaureate or master’s degree level will design a program of study in conjunction with a faculty guidance committee. The student will advance to candidacy after successful completion of all relevant graduate courses and passing a qualifying examination conducted by the guidance committee, which will contain oral and/or written components at the discretion of the committee members. The guidance committee for doctoral students will consist of a minimum of five members, three of whom must be from within the Department of Animal and Nutritional Sciences and at least one member must be from outside the department. After the student’s advancement to candidacy for the Ph.D. degree, a doctoral committee will be appointed to supervise and approve the dissertation.

The dissertation must be based on original hypothesis-driven research of publishable quality. A public presentation of the dissertation research findings will be followed by a final examination, which will be primarily an oral defense of the dissertation. The candidate will be required to serve as a teaching assistant for a minimum of two semesters or to teach a course for one semester. Aptitude in scientific communication will be developed by presentation of one seminar during each year of enrollment, not including the dissertation defense.

Biochemistry and Molecular Biology (BCHM)

www.biochemistry.unh.edu/

Degrees Offered: M.S., Ph.D.

The Department of Molecular, Cellular, and Biomedical Sciences offers the master of science and the doctor of philosophy degrees in biochemistry. The department offers research opportunities in genomics, proteomics, developmental genetics, eukaryotic gene regulation, molecular evolution, molecular genetics, plant molecular-biology, physical biochemistry, oncogene function, signal transduction, structure and function of macromolecules, structural glycobiology, transposable elements, molecular endocrinology, and molecular population genetics. Opportunities also exist for interdisciplinary research in marine biochemistry, biochemical nutrition, and cell biology in adjunct facilities on campus.

Admission Requirements

An applicant is expected to have completed basic courses in chemistry, biological sciences, mathematics, and physics. Otherwise well-qualified applicants will be permitted to correct deficiencies in undergraduate education by enrollment in the appropriate courses or by independent study during the first year. Applicants must submit current scores (within five years) from the general test of the GRE. Applicants from non-English-speaking countries must also provide TOEFL (Test of English as a Foreign Language) scores.
Degree Requirements

M.S. Degree Requirements
A student will meet the Graduate School's requirements for the master's degree (minimum 30 credits) and will be expected to develop a thesis (6-10 cr.) on a basic research problem or to prepare a report or publication based on original research in biochemistry or molecular biology. Demonstration of proficiency in organic chemistry, physical chemistry, and biochemistry will be assessed in the first year. A guidance committee meeting will be held soon after a thesis adviser is identified. All candidates for the M.S. degree will be required to pass an oral examination based on the thesis or project report and on the graduate courses completed in the degree program.

B.S./M.S. Degree Requirements
This accelerated five-year program leading to a combined bachelor's degree and master's degree in biochemistry is designed for highly motivated and qualified undergraduate UNH students seeking additional training to further their career goals as researchers in the life sciences. Admission to the combined degree program is highly competitive. Students wishing to pursue this program must have a grade point average greater than 3.2 at the time of application. A thesis adviser must be identified during the junior year, and the approval of the adviser must be obtained. Prior to the first semester of the senior year, the student must formally apply to the department through the Graduate School and receive early admission. The requirement for the Graduate Record Examinations is waived for combined degree applicants. Thirty credits of graduate level (800-999) coursework (including dual-credit courses) must be completed. Six to 8 credits of graduate-level courses must be taken during the senior year and are applied to both the B.S. and M.S. requirements. All other requirements for the M.S. degree must be followed.

Ph.D. Degree Requirements
Doctoral students will be required to complete a dissertation on original research in biochemistry or molecular biology. Demonstration of proficiency in organic chemistry, physical chemistry, and biochemistry will be assessed in the first year. A guidance committee meeting will be held soon after a thesis adviser is identified. In the second year, students will be required to write and defend a research proposal in an area unrelated to their thesis project. Upon completion of graduate courses recommended by a guidance committee, a doctoral student will be required to pass an oral qualifying examination conducted by the guidance committee. The successful completion of these requirements and advancement to candidacy for the Ph.D. degree must occur at least six months prior to the final oral defense of the Ph.D. dissertation administered by the student's doctoral committee.

Teaching Requirement
Teaching assignments in the laboratory, in lectures, or in an individual instruction format are an essential part of the graduate academic programs of the department and are designed to give graduate students practical teaching experience. Normally, one year of part-time teaching will be required of each student.

Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>BCHM 802</td>
<td>Endocrinology</td>
<td>4</td>
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<tr>
<td>BCHM 811</td>
<td>Genomics and Bioinformatics</td>
<td>4</td>
</tr>
<tr>
<td>BCHM 850</td>
<td>Physical Biochemistry</td>
<td>3 OR 4</td>
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<td>BCHM 851</td>
<td>Principles of Biochemistry I</td>
<td>4</td>
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<tr>
<td>BCHM 852</td>
<td>Principles of Biochemistry II</td>
<td>4</td>
</tr>
<tr>
<td>BCHM 854</td>
<td>Laboratory in Biochemistry and Molecular Biology of Nucleic Acids</td>
<td>5</td>
</tr>
<tr>
<td>BCHM 855</td>
<td>Laboratory in Biochemistry and Molecular Biology</td>
<td>5</td>
</tr>
<tr>
<td>BCHM 863</td>
<td>Biochemistry of Cancer</td>
<td>3</td>
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<tr>
<td>BCHM 866</td>
<td>Environmental Genomics</td>
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<tr>
<td>BCHM 871</td>
<td>Molecular Genetics</td>
<td>4</td>
</tr>
<tr>
<td>BCHM 890</td>
<td>Current Topics in Biomedicine</td>
<td>4</td>
</tr>
<tr>
<td>BCHM 894</td>
<td>Protein Structure and Function</td>
<td>4</td>
</tr>
<tr>
<td>BCHM 895</td>
<td>Investigations</td>
<td>1 TO 4</td>
</tr>
<tr>
<td>BCHM 897</td>
<td>Special Topics: Issues in Genome Evolution</td>
<td>2</td>
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<tr>
<td>BCHM 899</td>
<td>Master's Thesis</td>
<td>1 TO 10</td>
</tr>
<tr>
<td>BCHM 942</td>
<td>Biochemical Regulatory Mechanisms</td>
<td>3</td>
</tr>
<tr>
<td>BCHM 950</td>
<td>Macromolecular Interactions</td>
<td>3</td>
</tr>
<tr>
<td>BCHM 960</td>
<td>Advanced Topics in Signal Transduction</td>
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<td>BCHM 999</td>
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<td>MCBS 997</td>
<td>Seminar</td>
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</table>

Business Administration (ADMN)

www.wsbe.unh.edu/graduate-programs

Degree Offered: M.B.A.
The Whittemore School of Business and Economics offers a program leading to the M.B.A. in formats designed for full-time students, part-time evening students, and practicing managers in a weekend executive program. Each program includes a sequence of required courses and opportunities to take electives. While each program is offered in a different format, the basis of each program is to provide students with an introduction to business practices through theoretical and applied opportunities. All three models are professional and nationally accredited by the Association to Advance Collegiate Schools of Business (AACSB), making these programs the only AACSB-accredited executive and part-time models in New Hampshire.

Admission Requirements
The Whittemore School welcomes applicants with an above-average academic record in any undergraduate specialty. The crucial requirement for admission into the M.B.A. program is a history that demonstrates that the applicant has the potential and desire for graduate study in business. Consequently, a portfolio approach to admissions is adopted, in which an applicant’s work and military experience along with other indications of maturity, motivation, and self-discipline are considered in addition to the applicant’s test scores and academic record. All applicants are required to take the Graduate Management Admission Test (GMAT). Applicants are expected to have successfully completed one semester of calculus, statistics, or have demonstrated proficiency in quantitative reasoning. Interested applicants are encouraged to contact Christine Shea, Associate Dean of Graduate Programs and Research, Whittemore School, 15 Academic Way, Durham, NH 03824-3593.

The Whittemore School M.B.A. programs have different pricing structures. For current rates and fees, please visit the business services Web site (follow the M.B.A. link).

Degree Requirements

Full-time M.B.A. Degree Requirements
The curriculum for the one-year intensive full-time M.B.A. program begins with online foundation work in the summer. Students formally begin the program at the end of August with an orientation program, and continue together as a cohort through the academic year. The 48-credit program comprises ten required core courses, a series of electives, and an international residency; the program culminates with a corporate consulting project. Electives can be taken in such areas as marketing, finance, entrepreneurship, supply chain management, leadership, and general management. Students with less than three years of professional work experience must complete an internship as one of their electives.
Part-time M.B.A. Degree Requirements

Part-time, evening students typically begin the program in the fall term, although a January admission with a reduced course load may be possible. Offered on both the Durham and Manchester campuses, the degree is comprised of ten required core courses and six electives. Students may petition to waive up to three core courses. A waiver is typically granted if the student possesses a major (five to six courses) in a core area earned within five years of matriculation, e.g., a student with a major in marketing may petition to waive the core course in marketing. The program is designed to permit students to complete the degree in two years although a reduced pace is also possible. Specializations are available in the following areas:

Marketing and Supply Chain Management

This specialization covers such topics as market research and analysis and new product and services development. A cross-functional approach is utilized to teach students how to manage fundamental value processes involved in the production and marketing of goods and services. The specialization is unique in its integrative emphasis on meeting customer and market needs in an effective and efficient manner given technological and operational constraints.

Entrepreneurial Venture Creation

This specialization is designed to promote an environment that produces an entrepreneurial culture and promotes learning through experiential, real-world, real-time learning. It provides a basis to learn about the high-growth entrepreneurial venture process of value creation through an application of technology in a dynamic environment and is appropriate for students who intend to start a high-growth business, work for a new venture, become involved in a new venture creation within an established organization, or are interested in the field of venture capital.

Financial Management

This specialization is designed for the student who wants to take a coherent set of finance courses offered within the general framework of the M.B.A. The study of finance provides students with opportunities in a wide variety of disciplines including banking, insurance, corporate finance, investment management, and risk management.

General Management

Students may elect to take the six electives in fields of their choice. Two of the electives may be completed as independent studies, which allow students to study a topic in-depth that is not offered as a course. Additionally, by petition two graduate-level courses offered by other departments may be utilized towards the degree.

Executive M.B.A. Degree Requirements

The Executive M.B.A. curriculum is designed to meet the needs of individuals working full-time at the executive level. The curriculum comprises of 17 courses emphasizing general management and provides broad-based exposure to the functional areas of finance and accounting, and human resource, marketing, operations, and strategic management. In the second year, all students take a yearlong track in International Business and choose between a second track in either Entrepreneurial Venture Creation or Managing Technological Innovation. The Integrative Management Seminar taken each term brings in regional business leaders to discuss current business topics and challenges.

The program is offered in Durham at the acclaimed New England Conference Center, offering a residential option for students coming from a distance. The nineteenth-month program begins in early September with a week in residence spent on orientation activities, team building, networking, and classes. Thereafter, classes are held twice each month in all-day Friday and Saturday sessions. In the second year, students spend two days on Wall Street as part of the finance course, and the program concludes with a required ten-day international residence.

Chemical Engineering (CHE)

www.unh.edu/chemical-engineering/

Degrees Offered: M.S., Ph.D.

The Department of Chemical Engineering offers the master of science degree and chemical engineering Ph.D. degree in the Engineering Ph.D. Program.

Admission Requirements

An applicant is expected to have completed a baccalaureate degree or master’s degree in chemical engineering. Students with good academic records but with deficiencies in certain areas may be admitted on condition that they complete specified courses without credit to make up for their deficiencies. Applicants must submit current scores (within five years) from the general test of the GRE. International students are required to submit TOEFL test scores.

Degree Requirements

M.S. Degree Requirements

A minimum of 30 credits, which must include Advanced Chemical Kinetics (CHE 932), and Advanced Chemical Engineering Thermodynamics (CHE 923), and Advanced Chemical Engineering Thermodynamics (CHE 923), and Advanced Chemical Engineering Kinetics (CHE 932) is required for the master of sci-
ence in chemical engineering. These five core courses constitute 15 credits. The remaining 9 course credits can be made up of electives offered by the department or by the college. Students take electives after consulting with their adviser. A thesis is required, for which a minimum of 6 credits will be allowed, unless the candidate is specifically exempted by the faculty because of previous research experience.

Ph.D. Admission Requirements

Students admitted to the Ph.D. program normally hold a master’s degree in chemical engineering. Exceptional students with baccalaureate degrees in chemical engineering are eligible for admission to the program. To be admitted, students must present evidence that they have a strong foundation in chemical engineering. Applicants must submit current scores (within five years) from the general test of the GRE. International students are required to submit TOEFL test scores.

Ph.D. Degree Requirements

Following entrance into the program, the Ph.D. student’s adviser advises the student in outlining his/her program and may specify individual coursework requirements in addition to the required core courses. The core courses are fluid dynamics, mass transfer, heat transfer, thermodynamics, and reaction kinetics. The core courses requirements can be waived only in special cases with permission from the department faculty. Each doctoral student must complete 50 course credit hours or 15 courses (which ever comes first) beyond the bachelor’s program. At least 8 of the courses must be at the 900 level.

The graduate coordinator also conducts an annual in-depth review of the student’s progress and, following completion of the student’s coursework (the five core courses), administers the written qualifying examination in each of the core courses. All coursework including electives should normally be completed by the end of the second year of full-time graduate study and must be completed before the student can be advanced to candidacy.

The student must prepare a research proposal, which is different from his/her Ph.D. dissertation research, and defend the proposal in an oral examination before a committee. Upon the successful completion of the oral qualifying examination, the student is advanced to candidacy and, upon the recommendation of the graduate coordinator, a doctoral committee is appointed by the dean of the Graduate School. The doctoral committee conducts an annual review of the student’s progress, supervises and approves the doctoral dissertation, and administers the final dissertation defense.

There is no language requirement.

Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CHE 801</td>
<td>Introduction to Polymer Engineering</td>
<td>4</td>
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<tr>
<td>CHE 805</td>
<td>Natural and Synthetic Fossil Fuels</td>
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<tr>
<td>CHE 809</td>
<td>Fundamentals of Air Pollution and Its Control</td>
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<td>CHE 812</td>
<td>Introduction to Nuclear Engineering</td>
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<td>CHE 822</td>
<td>Introduction to Microfluidics</td>
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<td>CHE 844</td>
<td>Corrosion</td>
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<td>CHE 852</td>
<td>Process Dynamics and Control</td>
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<td>CHE 861</td>
<td>Biochemical Engineering</td>
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<td>CHE 862</td>
<td>Biomedical Engineering</td>
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<td>CHE 899</td>
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<td>CHE 913</td>
<td>Advanced Fluid Mechanics</td>
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<td>CHE 915</td>
<td>Heat Transfer</td>
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<td>CHE 916</td>
<td>Diffusive Mass Transfer</td>
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<td>CHE 923</td>
<td>Advanced Chemical Engineering Thermodynamics</td>
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<td>CHE 932</td>
<td>Advanced Chemical Engineering Kinetics</td>
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<td>CHE 996</td>
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<td>CHE 999</td>
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Chemistry (CHEM)

www.unh.edu/chemistry/

Degrees Offered: M.S., M.S.T., Ph.D.

The Department of Chemistry offers programs leading to the doctor of philosophy and the master of science degrees in the areas of organic, inorganic, physical, and analytical chemistry. The department also offers options in the Ph.D. program in chemistry education and atmospheric chemistry and in the Master of Science for Teachers (M.S.T.).

Admission Requirements

Admission to the master of science and the doctor of philosophy degrees is based upon a strong undergraduate record and requires satisfactory work in the usual undergraduate courses in inorganic chemistry, analytical chemistry, organic chemistry, and physical chemistry, as well as the normal supporting courses in mathematics and physics. Entering graduate students (except for those desiring the M.S.T. degree) are expected to take proficiency examinations in chemistry to ensure they begin their graduate work at the appropriate level. These examinations will be offered the week prior to the opening of the fall semester during the Department of Chemistry’s Graduate Student Orientation week. Applicants for the Master of Science for Teachers should consult the General Regulations of the Graduate School for special admission requirements.

Degree Requirements

The master’s degree requires completion of coursework appropriate to the student’s field of study and the completion of a research problem presented in the form of a thesis (6-10 cr.). A minimum of 30 credit hours is required.

Master of Science for Teachers Degree Requirements

This degree requires 30 credit hours in graduate-level courses approved by the graduate coordinator. Persons interested in this degree should confer with the department’s graduate program coordinator.

Ph.D. Degree Requirements

This degree requires completion of coursework appropriate to the student’s field of study and the completion of a research problem presented in the form of a dissertation. Students will also demonstrate to the guidance committee that they have a broad basic knowledge of the field of chemistry: by completing certain fundamental graduate courses; by means of a series of examinations in the major field; and by presenting and defending an original research proposal before the end of the third year. The culmination of the program will result in a public thesis defense and acceptance of the dissertation.

The Ph.D. degree program now also includes an option in education and an option in atmospheric chemistry. Please contact the department for more information.

Interdisciplinary Programs in Chemistry

Graduate students in chemistry may elect to enter one of the interdisciplinary programs offered jointly with the chemistry department and other departments. In these programs, the graduate student, with the advice of the guidance committee, elects courses in chemistry and in the related disciplines, and writes the dissertation on a research problem appropriate to interdisciplinary treatment. Students interested in these programs should write to the graduate coordinator for further information.
Preparing Future Faculty (PFF)

Students who desire a career in college-level teaching follow their regular degree program in addition to PFF requirements.

Teaching Requirement

All graduate students who are doctor of philosophy or master of science degree candidates will obtain some teaching experience during their tenure.

Courses

<table>
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<tr>
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<th>Course Name</th>
<th>Credits</th>
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<td>Chemistry Teaching Seminar</td>
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<td>CHEM 808</td>
<td>Spectroscopic Investigations of Organic Molecules</td>
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<td>CHEM 855</td>
<td>Advanced Organic Chemistry</td>
<td>3</td>
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<tr>
<td>CHEM 862</td>
<td>Instrumental Methods of Chemical Analysis</td>
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<td>CHEM 874</td>
<td>Inorganic Chemistry</td>
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<tr>
<td>CHEM 876</td>
<td>Physical Chemistry III</td>
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<td>CHEM 895</td>
<td>Special Topics</td>
<td>2 TO 4</td>
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<td>CHEM 899</td>
<td>Thesis/Problems</td>
<td>1 TO 10</td>
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<tr>
<td>CHEM 902</td>
<td>Theoretical Organic Chemistry II</td>
<td>3</td>
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<td>CHEM 903</td>
<td>Advanced Inorganic Chemistry I</td>
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<td>CHEM 904</td>
<td>Advanced Inorganic Chemistry II</td>
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<td>CHEM 905</td>
<td>Advanced Physical Chemistry I</td>
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<tr>
<td>CHEM 911</td>
<td>Synthetic Organic Chemistry I</td>
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<tr>
<td>CHEM 917</td>
<td>Special Topics in Organic Chemistry</td>
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</tr>
<tr>
<td>CHEM 918</td>
<td>Special Topics in Organic Chemistry</td>
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</tr>
<tr>
<td>CHEM 926</td>
<td>Physical Chemistry of Solutions</td>
<td>3</td>
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<td>CHEM 927</td>
<td>Molecular Reaction Dynamics</td>
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<tr>
<td>CHEM 930</td>
<td>Advanced Optical Methods</td>
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<tr>
<td>CHEM 933</td>
<td>Chemical Separations</td>
<td>3</td>
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<tr>
<td>CHEM 934</td>
<td>Chemical Equilibria</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 935</td>
<td>Electrical Methods of Analysis</td>
<td>3</td>
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<tr>
<td>CHEM 947</td>
<td>Inorganic Biochemistry</td>
<td>3</td>
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<tr>
<td>CHEM 971</td>
<td>Teaching and Learning Chemistry</td>
<td>3 TO 4</td>
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<tr>
<td>CHEM 991</td>
<td>Graduate Presentation Portfolio</td>
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<td>CHEM 992</td>
<td>Graduate Writing Portfolio</td>
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<tr>
<td>CHEM 995</td>
<td>Colloquium</td>
<td>1 TO 4</td>
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<td>CHEM 996</td>
<td>Colloquium</td>
<td>1 TO 4</td>
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<tr>
<td>CHEM 997</td>
<td>Seminar</td>
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<td>CHEM 998</td>
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<tr>
<td>CHEM 999</td>
<td>Doctoral Research</td>
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</table>

Civil Engineering (CIE)

www.unh.edu/civil-engineering/index.html

Degrees Offered: M.S., Ph.D.

The Department of Civil Engineering offers the master's degree in civil engineering with the following areas of specialization: structural, materials, geotechnical, water resources, and environmental engineering. Interested applicants are encouraged to write to the graduate program coordinator for specific information on current research in the department. A Ph.D. degree in civil engineering is also available.

Admission Requirements

An applicant must have completed a baccalaureate science degree in engineering, mathematics, or science at an accredited college or university. If coursework or laboratory experience is deficient, an admitted student will be required to fulfill, without graduate credit, all undergraduate prerequisites for graduate courses. In some cases, the student’s adviser may require additional undergraduate courses in order to achieve a well-integrated program of study. Applicants must submit current scores (within five years) from the general test of the GRE, unless waived by the graduate coordinator (for current UNH undergraduate civil engineering (CIE) or environmental engineering (ENE) majors only).

Degree Requirements

M.S. Degree Requirements

All master’s degree students must complete a minimum of 31 total credits. A student in the master’s program may elect either a thesis (minimum of 25 course credits and 6 thesis credits) or nonthesis (minimum of 28 course credits and 2-credit project or for structures and geotechnical areas, a minimum of 30 course credits and a 1-credit seminar) option. Up to two senior-level civil engineering courses or 8 credits may be counted toward the master’s degree under the dual registration (early admit) program provided the student has been admitted to the Graduate School prior to the course offerings.

Thesis Option: A formal oral presentation/thesis defense is required. All thesis option students are eligible for teaching or research assistantships and are required to register for Civil Engineering Seminar (CIE 900) for one semester, but are required to make two presentations during their programs of study. For graduation, a B average (3.00 GPA) and a successful thesis defense must be achieved.

Nonthesis Option: The nonthesis option is designed to facilitate completion of B.S./M.S. civil engineering degrees within five years. A student electing the nonthesis option is required to prepare a research project paper or solve a research problem (for structures and geotechnical areas only) and give a final oral presentation/project or problem defense. Nonthesis option students are not eligible for an assistantship. For graduation, a B average and a successful research project or problem defense must be achieved.

Ph.D. Degree Requirements

Following admission into the program, a guidance committee is appointed for the student by the dean of the Graduate School upon recommendation of the graduate coordinator. This committee assists in outlining the student’s course of study and may specify individual coursework requirements.

Within 18 months after admission, the student must pass both written and oral qualifying exams. The student must successfully complete at least 24 course credit hours beyond a master’s degree.

Minor Requirements: An identifiable group of courses (9 credits minimum) in an area outside of the civil engineering department and approved by the guidance committee must be successfully completed to provide a minor to the Ph.D. degree. A minor may be satisfied by courses taken toward a master’s degree other than civil engineering, but the credits will not be applied against the 24 credit-hour minimum.

Language or Research Tool: Students are required to gain or prove proficiency in a language or research tool in an appropriate area, such as mathematics, statistics, or data analysis; laboratory analysis or procedures; instrumentation; computer programming; or a foreign language suitable to the area of concentration. The proposed language or research tool must be approved by the guidance committee and may be achieved through the successful completion of coursework, an examination, or both.

Teaching Experience: A minimum of one semester as a teaching assistant or comparable experience is required. The guidance committee will evaluate whether a student’s past teaching assistantship satisfies this requirement.

Doctoral Candidates: Upon successful completion of the Ph.D. qualifying examinations and the language or research tool requirement, a doctoral student is advanced to the status of doctoral candidate. When a student achieves candidacy, a doctoral committee is established. The doctoral committee directs research, conducts a semi-annual review of the student’s progress, supervises and approves the doctoral dissertation, and administers the final examination (also known as the dissertation defense).
Upon completion of the dissertation, and with the approval of the doctoral committee, the student schedules an oral defense in accordance with the requirements of the Graduate School.

### Courses

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<td>CE 821</td>
<td>Pavement Design</td>
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<tr>
<td>CE 822</td>
<td>Properties and Production of Concrete</td>
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<tr>
<td>CE 823</td>
<td>Bituminous Materials and Mixtures</td>
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<td>CE 840</td>
<td>Public Health Engineering</td>
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<td>CE 841</td>
<td>Open Channel Flow</td>
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<td>CE 842.5</td>
<td>Solid and Hazardous Waste Engineering</td>
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<td>CE 845</td>
<td>Engineering Hydrology</td>
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<td>CE 847</td>
<td>Introduction to Marine Pollution and Control</td>
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<td>CE 848</td>
<td>Solid and Hazardous Waste Design</td>
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<td>CE 849</td>
<td>Water Chemistry</td>
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<td>CE 850</td>
<td>Echolocography</td>
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<td>CE 851</td>
<td>Introduction to Sustainable Engineering</td>
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<tr>
<td>CE 854</td>
<td>Transportation Engineering and Planning</td>
<td>3</td>
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<tr>
<td>CE 855</td>
<td>Design of Pressurized Water Transmission Systems</td>
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<td>CE 856</td>
<td>Environmental Engineering Microbiology</td>
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<td>CE 857</td>
<td>Coastal Engineering and Processes</td>
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<td>CE 858</td>
<td>Stormwater Management Designs</td>
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<td>CE 859</td>
<td>Stream Restoration</td>
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<td>CE 860</td>
<td>Foundation Design I</td>
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<td>CE 861</td>
<td>Foundation Design II</td>
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<td>CE 862</td>
<td>Introduction to Geotechnical Earthquake Engineering</td>
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<td>CE 863</td>
<td>Geological Engineering</td>
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<td>CE 866</td>
<td>Geo-Environmental Engineering</td>
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<td>CE 874</td>
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<td>CE 882</td>
<td>Timber Design</td>
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<td>CE 883</td>
<td>Matrix Structural Analysis and Modeling</td>
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<td>CE 885</td>
<td>Introduction to Structural Vibrations</td>
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<td>CE 886</td>
<td>Introduction to Finite Element Analysis</td>
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<td>CE 887</td>
<td>Dynamics of Structures</td>
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<td>CE 888</td>
<td>Master’s Project Paper</td>
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<td>CE 891</td>
<td>Pre-stressed Concrete</td>
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<td>CE 892</td>
<td>LRFD Bridge Design</td>
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<td>CE 893</td>
<td>Structural Design in Steel</td>
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<td>Independent Study</td>
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<td>CE 940</td>
<td>Hydrologic Monitoring</td>
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<td>CE 942</td>
<td>River Mechanics</td>
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<td>CE 943</td>
<td>Advanced Hazardous Waste and Environmental Sampling and Analysis</td>
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<td>CE 944</td>
<td>Advanced Physicochemical Treatment Design</td>
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<td>CE 945</td>
<td>Advanced Groundwater Topics</td>
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<td>CE 946</td>
<td>Advanced Bioenvironmental Engineering Design</td>
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<td>CE 960</td>
<td>Advanced Soil Mechanics</td>
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<td>CE 961</td>
<td>In Situ Geotechnical Testing</td>
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### College Teaching (GRAD)

www.gradschool.unh.edu/pff/

#### Application Requirements

**Test Scores:** None  
**New England Regional:** No  
**Special Application Instructions:** Summer MST admission open to college and university faculty, and doctoral students from other institutions.

#### Degree Offered: M.S.T., Cognate

The college teaching program prepares graduate students for academic teaching positions. Students must be ready to teach in their field or discipline upon completion of program requirements. The transfer and relationship between theory and research and instructional practice is emphasized in all courses.

This is a University-wide program coordinated by the Office of the Dean of the Graduate School and involving the Center for Teaching Excellence and faculty members from many fields and disciplines. Two academic programs are offered: the Cognate in College Teaching and the Master of Science for Teachers (M.S.T.).

#### Admission Requirements

Applicants to the cognate or M.S.T. programs must have completed one year in a doctoral program at UNH and have the support and recommendation of their doctoral program coordinator. The M.S.T. program is also available to faculty members and doctoral students from other universities. Students in master’s-only programs at UNH may be eligible to enroll in an M.S.T. program as a dual degree or in the Cognate program.

### Degree Requirements

#### Cognate in College Teaching Requirements

This program requires the satisfactory completion of 12 academic credits and emphasizes the development of classroom teaching skills in a specific field or discipline. Students elect, with the permission of their graduate coordinator, to add the cognate to their graduate degree. The cognate will be awarded at the time of the award of the qualifying graduate degree. Requirements include 4 credits in the GRAD 950 series, including GRAD 950 Issues in College Teaching and GRAD 951 Teaching with Writing. Students also complete a minimum of 4 credits in field and disciplinary studies related to teaching in their specific area of graduate study. A list of approved graduate-level courses for field and disciplinary studies is available and includes courses in the GRAD 970 and 980 series. All students also must complete 4 credits in GRAD 990, College Teaching Praxis.

#### M.S.T. Degree Requirements

Building upon the basic foundation in college teaching, the M.S.T. program adds advanced studies in specific content related to teaching and learning from many fields, the evolving role and function of the professor in higher education and postsecondary academic institutions, and specific methods related to pedagogical improvement and research. Completion of the M.S.T. as a dual degree with the Ph.D. may lengthen the time usually needed to earn the doctoral degree. Under no circumstances will the M.S.T. be awarded to a doctoral student who fails to complete the doctoral degree.

Requirements include core requirements of 16 credits from the GRAD 950 and 960 series of courses. Required courses include GRAD 950, 961, and 965. Students also complete a minimum of 8 credits in field and disciplinary studies related to their specific area of graduate study. A list of approved courses for field and disciplinary studies is available and includes courses in the GRAD 970 and 980 series. All students also must complete 8 credits in GRAD 990, College Teaching Praxis.

Some graduate programs have requirements that complement the requirements of these University-wide college teaching programs. In these instances, formal articulation agreements insure fully coordinated programs so that students are not required to duplicate requirements. Information on existing articulation agreements is available from the coordinator of this program or specific graduate program directors.

Permission to enroll in GRAD 990, Teaching Praxis, is dependent upon the student’s readiness to be an effective instructor. Readiness is determined by the coordinator based upon the recommendation of the faculty. Permission to enroll in GRAD 990 is also based upon the satisfactory completion of prerequisite requirements and the ability to communicate effectively in a college classroom as an instructor. Students may be required to submit evidence to verify this ability to communicate effectively in a classroom as a
Admission Requirements
The Department of Communications Sciences and Disorders offers a master of science degree. Students are prepared to practice in a variety of job settings within the field of speech-language pathology and to meet the academic and practicum requirements of the American Speech-Language-Hearing Association (ASHA) for the Certificate of Clinical Competence in speech-language pathology. The program is accredited by the Council on Academic Accreditation of ASHA. Applicants for admission should possess a bachelor’s degree in communication sciences and disorders or its equivalent. The following courses, or their equivalents, are undergraduate prerequisites for the master’s program: COMM 521, Anatomy and Physiology of the Speech and Hearing Mechanism; COMM 522, Language Acquisition; COMM 524, Clinical Phonetics; COMM 704, Basic Audiology; COMM 705, Introduction to Auditory Perception and Aural Rehabilitation; COMM 777, Speech and Hearing Science; and KIN 706, Neurology. In addition, a course in statistics is required. Students are also required to have completed coursework in typical human development, cultural diversity, and both biological and physical sciences in preparation for fulfillment of ASHA requirements. Applicants with degrees in related fields may be admitted to the Graduate School as provisional students, with the expectation that they will complete the above prerequisite prior to, or concurrent with, graduate courses. Acceptance to the communications sciences and disorders program is based primarily on grade-point average and GRE scores. Applicants must submit current scores (within five years) from the general test of the GRE. Generally, students must have earned a minimum grade-point average of 3.20 to be considered for admission. Letters of recommendation are considered, particularly for the awarding of scholarships, assistantships, and other sources of support.

Option in Language Literacy Disabilities
In addition to the above, required courses for this option are:
COMM 875 Advanced Language Acquisition 3 cr.
COMM 900 Phonological Disorders in Children 3 cr.
COMM 901 Dysphagia 3 cr.
COMM 907 Advanced Seminar in Aural Rehabilitation 3 cr.
COMM 908 Disorders of Language and Literacy I 3 cr.
COMM 909 Disorders of Language and Literacy II 3 cr.
COMM 912 Language Disorders Birth to Five 3 cr.

Students will take two elective courses, which may be taken within and outside the department.

Communication Sciences and Disorders (COMM) www.chhs.unh.edu/csd

Degree Offered: M.S.
The graduate program integrates an array of academic and clinical experiences to prepare students for a variety of careers in speech-language pathology. The program offers a master of science degree program in communications sciences and disorders. Students can elect to self-design their program, choosing from an array of required and elective courses that best suit their career objectives. This is referred to as the “no option” concentration. Two additional options: language/literacy disabilities and early childhood are available to those students seeking particular expertise in one of these areas. Irrespective of which of the three options a student selects, the program of study will prepare them to treat the full range of communication disabilities across the life span.

Faculty and students are actively engaged in research activities. Their projects include examinations of the efficacy of language intervention for adults with aphasia, management of motor speech deficits, functional outcomes of augmentative and alternative communication, role of communication in fostering inclusive education, relationships between language and literacy, and ways of enhancing the process of clinical supervision.

M.S. Degree Requirements
Three options are offered: No option, option in language/literacy disabilities, and option in early childhood and language disorders (minimum 59 credits). The following core courses are required of all students: COMM 876 and 877, Ethics/Professional Issues in Speech Language Pathology I and II, 2 cr.; COMM 880, Diagnosis of Speech and Language Disorders, 3 cr.; COMM 890, Advanced Audiology for Speech-Language Pathologists, 3 cr.; COMM 891, Neurology for the Speech-Language Pathologist, 3 cr.; COMM 903, Therapy Process, 2 cr.; COMM 915, Counseling Clients and Families with Communications Disorders, 2 cr.; COMM 910, On-Campus Clinical Practicum, 3 cr.; COMM 911, Off-Campus Clinical Practicum, 6 cr. Students are also required to take a separate course in research methods approved by the department.

No Option
In addition to the core courses listed above, students enrolling in the master of science degree program (no option) will take the following required courses:
COMM 900 Phonological Disorders in Children 3 cr.
COMM 901 Dysphagia 3 cr.

In addition, students will take two of the following courses:
COMM 875 Advanced Language Acquisition 3 cr.
COMM 908 Disorders of Language and Literacy I 3 cr.
COMM 909 Disorders of Language and Literacy II 3 cr.
COMM 912 Language Disorders Birth to Five 3 cr.

Two of the following courses:
COMM 902 Stuttering 3 cr.
COMM 906 Voice Disorders 3 cr.
COMM 907 Advanced Seminar in Aural Rehabilitation 3 cr.
COMM 914 Augmentative and Alternative Communication 3 to 4 cr.

Three of the following courses:
COMM 904 Aphasia in Adults 3 cr.
COMM 905 Motor Speech Disorders 3 cr.
COMM 913 Cognitive Communication Disorders 3 cr.
COMM 920 Seminar (Autism Spectrum Disorders) 3 cr.

Students will take two elective courses, which may be taken within and outside the department.

Option in Language Literacy Disabilities
In addition to the above, required courses for this option are:
COMM 875 Advanced Language Acquisition 3 cr.
COMM 900 Phonological Disorders in Children 3 cr.
COMM 901 Dysphagia 3 cr.
COMM 907 Advanced Seminar in Aural Rehabilitation 3 cr.
COMM 908 Disorders of Language and Literacy I 3 cr.
COMM 909 Disorders of Language and Literacy II 3 cr.
COMM 912 Language Disorders Birth to Five 3 cr.

Students will also take four elective courses from the following two different groups:

Students will take two of the following courses:
COMM 902 Stuttering 3 cr.
COMM 906 Voice Disorders 3 cr.
COMM 914 Augmentative and Alternative Communication 3 to 4 cr.
Students will take two of the following courses:
- COMM 904 Aphasia in Adults 3 cr.
- COMM 905 Motor Speech Disorders 3 cr.
- COMM 907 Advanced Seminar in Aural Rehabilitation 3 cr.
- COMM 913 Cognitive Communication Disorders 3 cr.

**Option in Early Childhood Intervention**

In addition to the core courses listed above, required courses for this option are:
- COMM 900 Articulation and Phonological Disorders 3 cr.
- COMM 901 Dysphagia 3 cr.
- COMM 908 Language/Literacy Disorders I 3 cr.
- COMM 912 Language Disorders in Early Childhood 0-5 yr. 3 cr.
- COMM 920 Seminar (Autism Spectrum Disorders) 3 cr.
- EDUC 949 Supporting Families of Students with Special Needs 4 cr.

In addition, the student will also take five elective courses from the three groups below:

Students will take two of the following courses:
- COMM 902 Stuttering 3 cr.
- COMM 906 Voice Disorders 3 cr.
- COMM 907 Advanced Seminar in Aural Rehabilitation 3 cr.
- COMM 914 Augmentative/Alternative Communication 3 cr.

Students will take one of the following courses:
- COMM 904 Aphasia 3 cr.
- COMM 905 Motor Speech Disorders 3 cr.
- COMM 913 Cognitive/Communicative Disorders 3 cr.

Students will take two of the following courses:
- COMM 909 Language/Literacy Disorders I 3 cr.
- EDUC 941 Diversity and Child Development 4 cr.
- HHS 898 Neurodevelopmental and Related Disorders 1 to 8 cr.

Other courses within the department

Courses outside of the department approved by adviser

**Clinical Practicum**

Clinical practicum experiences will be selected according to the desired option to develop practical skills in that area of interest. The number of hours needed by students may vary depending on previous undergraduate experiences. All students are required to complete two off-campus (total of 6 credits) and two on-campus (total of 6 credits) clinical practicum rotations.

Clinical Practicum experiences are scheduled in sites that are approved by the department. Students are responsible for meeting the health and criminal record clearances established by their practicum sites. In addition, students are responsible for transportation to off-campus clinical practicum sites and other community learning experiences and must purchase liability insurance. Practicum sites may require proof of immunization such as poliomyelitis, rubella, and hepatitis; and a physical examination, including tuberculin test as well as health insurance.

**Concluding Experience**

Students must elect a comprehensive examination or thesis as a concluding experience.

Comprehensive Examination (non-thesis): All students except those writing a thesis must pass a written comprehensive examination designed to assess their mastery of the professional concepts of communication sciences and disorders in the area of normative processes, pathologies, and remediation. Performance evaluated by all graduate faculty.

Thesis: Students may choose to write a thesis. Upon completion of the research project, students must defend the thesis in an oral examination and must gain approval of the thesis committee. In addition to the required coursework specified above, students must register for 6 credits of COMM 899.

**Courses**

- COMM 875 Advanced Language Acquisition 3 cr.
- COMM 876 Ethical and Professional Issues in Communication Sciences and Disorders I 1 cr.
- COMM 877 Ethical and Professional Issues in Communication Sciences and Disorders II 1 cr.
- COMM 880 Diagnosis of Speech and Language Disorders 3 cr.
- COMM 890 Advanced Audiology for Speech-Language Pathologists 3 cr.
- COMM 891 Applied Neurology for Speech-Language Pathology 3 cr.
- COMM 895 Special Topics 1 to 3 cr.
- COMM 899 Master's Thesis 1 to 6 cr.
- COMM 900 Phonological Disorders in Children 3 cr.
- COMM 901 Dysphagia 3 cr.
- COMM 902 Stuttering 3 cr.
- COMM 903 Therapy Process 2 cr.
- COMM 904 Aphasia in Adults 3 cr.
- COMM 905 Motor Speech Disorders/AAC 3 cr.
- COMM 906 Voice Disorders 3 cr.
- COMM 907 Advanced Seminar in Aural Rehabilitation 3 cr.
- COMM 908 Disorders of Language and Literacy I 3 cr.
- COMM 909 Disorders of Language and Literacy II 3 cr.
- COMM 910 On-Campus Clinical Practicum 1 to 2 cr.
- COMM 911 Off-Campus Clinical Practicum 1 to 4 cr.
- COMM 912 Language Disorders Birth to Five 3 cr.
- COMM 913 C Cognitive Communication Disorders 3 cr.
- COMM 914 Augmentative and Alternative Communication 3 cr.
- COMM 915 Counseling Clients and Families with Communication Disorders 2 cr.
- COMM 920 Graduate Seminar 1 to 6 cr.

**Computer Science (CS)**

www.cs.unh.edu

**Degrees Offered: M.S., Ph.D.**

The computer science department offers both the Master of Science and the Doctor of Philosophy degrees. A major emphasis of our graduate program is the blending of theoretical and applied aspects of computer science. Students pursuing a specialization in computer science theory are required to develop a strong background in systems and are encouraged, whenever possible, to identify applications for theory. Similarly, students specializing in applied areas of computer science are required to base their work on strong theoretical foundations.

**Admission Requirements**

The computer science graduate program is geared toward students with a B.S. degree in computer science. Students with undergraduate degrees in other fields are invited to apply, but if accepted into the program, they will be required to satisfy courses equivalent to those listed below. If a student is only missing a small number of the prerequisites, it may be possible to be accepted into the graduate program on the condition that the remaining prerequisites are completed at UNH. Applicants must submit current scores (within five years) from the general test of the GRE.

For students without a B.S. degree in computer science, the minimal formal coursework includes an introduction to computer science, object-oriented programming, data structures, operating systems, and computer science theory.

These prerequisites can be satisfied at UNH by the following undergraduate courses:

- CS 415 Introduction to Computer Science I
- CS 416 Introduction to Computer Science II
- CS 515 Data Structures
- CS 520 Assembly Language Programming and Machine Organization
- CS 620 Operating System Fundamentals
- CS 659 Introduction to the Theory of Computation

Some students may need to take additional mathematics classes.

Although the master's program is normally a two-year program, someone admitted with just this minimal background should anticipate taking two-and-a-half to three years to complete the degree. Students without a B.S. or M.S. in computer science are not normally
admitted directly into the Ph.D. program, but it is possible to transfer from the M.S. program to the Ph.D. program.

Degree Requirements

M.S. Degree Requirements
The M.S. program has three options: thesis, project, and exam.

M.S. Thesis Option
1. CS 900, Computer Science Seminar.
2. Eight CS graduate courses of at least 3 credits each.
   a. Two must be implementation intensive (see list below).
   b. Three courses must be chosen from three different breadth groups (see list below).
   c. At least two courses must be above 900.
3. Thesis (6 credits). The student must complete a thesis under the supervision of a thesis adviser and a thesis committee of at least three members.

M.S. Project Option
1. CS 900, Computer Science Seminar.
2. Ten CS graduate courses of at least 3 credits each.
   a. Two must be implementation intensive (see list below).
   b. Four courses must be chosen from four different breadth groups (see list below).
   c. At least three courses must be above 900; one of these must be related to the project area.
3. Project (3 credits). The student must complete a project under the supervision of a faculty adviser.

M.S. Exam Option
1. CS 900, Computer Science Seminar.
2. Ten CS graduate courses of at least 3 credits each.
   a. Two must be implementation intensive (see list below).
   b. Four courses must be chosen from four different breadth groups (see list below).
   c. At least three courses must be above 900.
3. Comprehensive exam that includes four different examination topics (see list below). One topic must be selected from one of the Theory Group; the other three topics must be selected from three different groups (which can include a second theory topic).

Implementation Intensive Courses
Implementation intensive courses include: CS 812, 819, 820, 830, and 870.

Examination Topic Groups
The list below identifies the six topic groups used for both the M.S. comprehensive exam and the Ph.D. breadth exam.

Group: Exam Topics
1. Theory: Formal Specification and Verification
2. Systems: Operating Systems, Computer Networks
3. Compiler and Language: Compilers
4. Database: Database
5. Artificial Intelligence: Artificial Intelligence
6. Interactive Systems: Graphics

Breadth Course Groups*
The list below identifies the six breadth course groups and introductory (800-level) graduate courses in each group. It is also acceptable to satisfy a group requirement by taking an advanced course (900-level) in the specified area. (Note that there are courses in the curriculum that are not in any of the identified groups.)
*Not all breadth courses form the basis for exam topics. There are no current exams in the following courses: CS 820, 821, 860, and 867.

Group: Introductory Course
1. Theory: CS 845, 859
2. Systems: CS 820, 821, 823, 825
3. Compiler and Language: CS 812, 871
4. Database: CS 875
5. Artificial Intelligence: CS 830, 865
6. Interactive Systems: CS 860, 867, 870

Courses
CS 800 Internship 1
CS 812 Compiler Design 3
CS 818 Software Engineering Process 3
CS 819 Object-Oriented Methodology 3
CS 820 Operating System Programming 3
CS 821 Operating System Kernel Design 3
CS 823 Performance Evaluation of Computer Systems 3
CS 825 Computer Networks 3
CS 830 Introduction to Artificial Intelligence 3
CS 845 Formal Specifications and Verification of Software Systems 3
CS 858 Algorithms 3
CS 859 Theory of Computation 3
CS 860 Introduction to Human-Computer Interaction 3
CS 865 Introduction to Computational Linguistics 3
CS 867 Interactive Data Visualization 3
CS 870 Computer Graphics 3
CS 871 Web Programming Paradigms 3
CS 875 Database Systems 3
CS 880 Topics 3
CS 889 Master’s Project 3
CS 899 Master’s Thesis 1 TO 6
CS 900 Graduate Seminar 1
CS 920 Advanced Operating Systems 3
CS 925 Advanced Computer Networks 3
CS 931 Combinatorial Search and Heuristic Optimization 3
CS 975 Object-Oriented Database Systems 3
CS 980 Advanced Topics 3
CS 981 Advanced Topics in Database Systems 3
CS 986 Advanced Topics in Formal Specification and Verification 3
CS 988 Advanced Topics in Computer Graphics 3
CS 989 Advanced Topics in Algorithms 3
CS 998 Independent Study 1 TO 6
CS 999 Doctoral Research 0

Earth Sciences (ESCI)
www.unh.edu/esci/

Degree Offered: M.S.
The Department of Earth Sciences offers the master of science degree in Earth sciences with options in geology, oceanography, ocean mapping, and a specialization in geochemical systems. The department also offers the master of science degree in hydrology. Graduate students in the department may conduct research through the Institute for the Study of Earth, Oceans, and Space and the Center for Coastal and Ocean Mapping.
and isotope geochemistry. Concentration in the oceanography option may be placed on chemical, geological, or physical oceanography. Although the broad scope of oceanography will be presented, the program emphasizes estuarine, coastal, continental margin processes and environments, and midocean ridges.

The ocean mapping option is intended for students with an interest in hydrography and hydrographic survey technology.

The geochemical systems specialization is intended for students with an interest in all aspects of geochemistry: bedrock, sediment, water, ice, and air with particular emphasis on interpreting and modeling the interaction of these media, biogeochemistry, air quality, and climate change.

The hydrology degree is intended for students with an interest in fluvial processes, global-scale hydrology, groundwater hydrology, hydroclimatology, surface-water hydrology, water quality, and quantitative hydrology.

Note: The Ph.D. in Earth and Environmental Science is offered as part of the interdisciplinary and intercollege Natural Resources and Earth Systems Science (NRESS) program. All earth sciences emphases available in the Department of Earth Sciences Masters Program (see above) are also available in the NRESS Ph.D. program. Please see the program information under the NRESS program for further details.

Admission Requirements
An applicant to the M.S. program is expected to have completed one year of calculus and at least four semesters of college chemistry, physics, and/or biology; and to have an undergraduate degree or equivalent in geology, chemistry, physics, mathematics, engineering, or the biological sciences. Applicants must submit current scores (within five years) from the general test of the GRE. Students lacking some background in a particular area may be admitted provided they are prepared to complete courses, without graduate credit, in which they may be deficient. The program of study a student wishes to follow and the student’s undergraduate major determine the level of preparation necessary. The preparation of each student is determined before the beginning of the first semester in residence in order to plan the course of study. Each entering student is assigned an academic adviser to assist in planning a program of study.

Degree Requirements
Students in the M.S. programs are required to complete the core curriculum for their respective areas. Students in the thesis option must satisfactorily complete 30 credits, which include the credits accumulated in the core curriculum. Students in this option must complete a master’s thesis (6 credits) and give an oral presentation of the results. Students in the nonthesis option must satisfactorily complete 34 credits, which includes the core curriculum, a 2-credit directed research project, and a written and oral presentation of that research.

Geology
The core curriculum for the option in geology normally includes at least three courses from 825, Igneous Petrology; 826, Metamorphic Petrology; 832, Regional Geology and Advanced Structure; 834, Applied Geophysics; 841, Geochemistry; 845, Isotope Geochemistry; 854, Sedimentology; 859, Geological Oceanography; and 862, Glacial Geology. Students are also required to take 997, Seminar in Earth Sciences (1 cr. first year), and 998, Proposal Development (1 cr. first year).

Oceanography
The core curriculum for the option in oceanography normally includes 852, Chemical Oceanography, 3 or 4 cr.; 858, Introductory Physical Oceanography; 859, Geological Oceanography; 997, Seminar in Earth Sciences (1 cr. first year); and 998, Proposal Development (1 cr. first year).

Ocean Mapping
The core curriculum for the option in ocean mapping normally includes 858, Introductory Physical Oceanography; 859, Geological Oceanography; OE 810, Ocean Measurements Laboratory; 870, Fundamentals of Ocean Mapping; 871, Geodesy and Positioning for Ocean Mapping; 972, Hydrographic Field Course; 997, Seminar in Earth Sciences (1 cr. first year); and 998, Proposal Development (1 cr. first year).

Geochemical Systems
The core curriculum for the specialization in geochemical systems normally includes three courses from 841, Geochemistry; 846, Analytical Geochemistry; 847, Aqueous Geochemistry; 852, Chemical Oceanography; 864, Data Analysis in Earth System Science; EOS/NR 844 Biogeochemistry; ESCI/EOS 815, Global Atmospheric Chemistry; ESCI/EOS 816, Atmospheric Aerosol and Precipitation Chemistry; 997, Seminar in Earth Sciences (1 cr. first year); and 998, Proposal Development (1 cr. first year).

Hydrology
The core curriculum for the major in hydrology normally includes 805, Principles of Hydrology; 810, Groundwater Hydrology; 997, Seminar in Earth Sciences (1 cr. first year); and 998, Proposal Development (1 cr. first year).

In each of the options listed above, additional electives are to be selected from 800- and 900-level courses in the department and/or from courses numbered 700 and above in related disciplines outside of the department (e.g., natural resources, civil engineering, chemistry, zoology). More detailed information is available from the department.

Courses
In each of the options listed above, additional electives are to be selected from 800- and 900-level courses in the department and/or from courses numbered 700 and above in related disciplines outside of the department (e.g., natural resources, civil engineering, chemistry, zoology). More detailed information is available from the department.

Courses
ESCI 805 Principles of Hydrology 4
ESCI 810 Groundwater Hydrology 4
ESCI 815 Global Atmospheric Chemistry 3
ESCI 817 Macro-scale Hydrology I 4
ESCI 818 Macro-scale Hydrology II 4
ESCI 826 Metamorphic Petrology 4
ESCI 834 Geophysics 0 OR 4
ESCI 841 Geochemistry 4
ESCI 845 Isotope Geochemistry 4
ESCI 846 Analytical Geochemistry 4
ESCI 847 Aqueous Geochemistry 4
ESCI 850 Biological Oceanography 4
ESCI 852 Chemical Oceanography 3
ESCI 854 Sedimentology 4
ESCI 858 Introduction to Physical Oceanography 3
ESCI 859 Geological Oceanography 4
ESCI 862 Glacial Geology 4
ESCI 864 Data Analysis in Earth System Science 4
ESCI 865 Paleoclimatology 3
ESCI 866 Volcanology 4
ESCI 870 Fundamentals of Ocean Mapping 4
ESCI 871 Geodesy and Positioning for Ocean Mapping 4
ESCI 895 Topics I TO 170 4
ESCI 896 Topics I TO 170 4
ESCI 897 Colloquium 0
ESCI 898 Directed Research 2
ESCI 899 Master’s Thesis 170 6
ESCI 903 Advanced Hydrology 3
ESCI 972 Hydrographic Field Course 4
ESCI 973 Seafloor Characterization 3
Earth, Oceans, and Space (EOS)

www.eos.sr.unh.edu/

The Institute for the Study of Earth, Oceans, and Space offers students the opportunity for interdisciplinary study and research. Certain graduate degree programs in earth sciences, physics, natural resources, and zoology may be accessed through the institute as follows: all the M.S. programs in earth sciences, the specialization in space physics and astrophysics (M.S. and Ph.D.), and departmental (M.S.) or interdepartmental (Ph.D.) program in natural resources and earth systems sciences. Admission and degree requirements are set by the respective departments and program. See the graduate program descriptions in earth sciences, physics, zoology, natural resources, and the natural resources and earth systems sciences program (NRESS) for admission and degree requirements.

Courses

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EOS 807</td>
<td>Environmental Modeling</td>
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<tr>
<td>EOS 810</td>
<td>Introduction to Astrophysics</td>
<td>4</td>
</tr>
<tr>
<td>EOS 812</td>
<td>Introduction to Space Plasma Physics</td>
<td>4</td>
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<td>EOS 815</td>
<td>Global Atmospheric Chemistry</td>
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<td>Macro-Scale Hydrology I</td>
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<td>EOS 818</td>
<td>Macro-Scale Hydrology II</td>
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<td>EOS 830</td>
<td>Terrestrial Ecosystems</td>
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<td>EOS 844</td>
<td>Biogeochemistry</td>
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<tr>
<td>EOS 850</td>
<td>Biological Oceanography</td>
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<td>EOS 864</td>
<td>Data Analysis in Earth System Science</td>
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<td>EOS 865</td>
<td>Paleoclimatology</td>
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<td>EOS 940</td>
<td>Physics of Fluids</td>
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<td>EOS 954</td>
<td>Heliospheric Physics</td>
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<td>EOS 987</td>
<td>Magnetospheres</td>
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<td>EOS 988</td>
<td>High Energy Astrophysics</td>
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<td>EOS 996</td>
<td>Special Topics</td>
<td>3 TO 4</td>
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</table>

Economics (ECON)

www.wsbe.unh.edu/graduate-programs

Degrees Offered: M.A., Ph.D.

Programs are offered through the Whittemore School of Business and Economics.

Students seek graduate training in economics for several reasons. Some pursue the M.A. as a terminal degree and become professional economists employed in a variety of business and government settings, including banking, investment, insurance, pharmaceutical companies, consulting, the U.S. commerce department, and international organizations such as the World Bank and the World Health Organization. Other students may wish to become professional economists who advance to the very highest levels of management in business, government or academia. Students with these career goals continue their graduate studies by earning the Ph.D. degree.

The graduate programs in economics at UNH are among the most distinctive in the country. The M.A. program is based on a fast-track, ten-month calendar that provides rigorous training in economic theory and applied statistics. It also allows students to pursue applied coursework in international finance, environmental and resource economics, health economics, data analysis and information management, and international business. The doctoral program at UNH is one of only a few that offers a dual emphasis in business. Students who wish to pursue a Ph.D. degree, but who do not possess an M.A. in economics, are considered for admissions into the M.A. program. The doctoral program requires a master’s degree in economics.

Master of Arts in Economics

The M.A. program in economics builds on some of the core economic theory and econometrics classes from the Ph.D. program. Many other schools offer stand-alone M.A. programs whose core consists of little more than advanced undergraduate classes. At UNH, graduate economics is taught on an entirely different level. Consequently, our master’s students are exceptionally well trained.

The fast-track, ten-month program is based on four terms, one five-week term (Term 1) and three ten-week terms (Terms 2–4), running from the end of August through the end of May. It consists of three components; the foundation (in Term 1), the core (in Term 2), and concentrations (in Term 3 and 4). As part of the requirements, students participate in weekly research seminars where they are exposed to cutting-edge research presented by UNH faculty and by scholars from around the country. The culminating experience for the program is a master’s paper written during Term 4, which affords students the opportunity to work closely with faculty members in conducting original research in their chosen concentration.

Requirements

Students must earn 36 credits to graduate, usually consisting of ten, 3-credit courses, plus 6 hours of graduate economics seminar.

I. The Foundation (3 credits)
ECON 825 Mathematical Economics

The course is typically offered in the 5-week Term 1. Class meets four days a week and students earn three credits, the same as in the other terms.

II. The Core (9 credits)
ECON 976 Microeconomics I
ECON 972 Macroeconomics I
ECON 926 Econometrics I

These courses enable students to advance to specialized areas in the third and fourth terms with a strong background in theory and econometrics.

III. Electives (15 credits)
ECON 927 Econometrics II or approved skills course
Field/elective courses
Students may take a variety of economic electives or choose to specialize in an area such as international finance, environmental and resource economics, health economics, data analysis and information management, and international business. Up to four electives as substitutes for economics electives may be taken in courses offered outside of the department, subject to approval by the department. All elective courses must be at the 800 level or higher.

IV. Graduate Economics Seminar (6 credits)
Students are required to sign up for the Graduate Economics Seminar (ECON 988) in Terms 2, 3, and 4. No more than 6 credits can be counted towards the degree.

V. Master’s Paper (3 credits)
Students are required to take the Research Skills course (ECON 979) in preparation to write a master’s research paper then present it at the end of Term 4.

Ph.D. in Economics
Students demonstrating exceptional promise in economics (usually after completing the master’s program) and who are interested in teaching and research find the doctoral program a unique challenge. The doctoral program in economics has four key elements: (1) broad education in economics; (2) integrative research experience; (3) dual emphasis on training first-rate economists and outstanding college teachers and (4) outstanding faculty with strong expertise in environmental economics, health economics, and international economics.

Nationally, doctoral study in economics has increasingly involved quantitative rigor. UNH’s program has responded to this trend, but not at the expense of providing a broad background in economics. Beyond the core theory and econometrics classes, students study methodology and the history of economic thought.

The doctoral program encourages students to develop their research skills early on through an integrative research experience. The cornerstone of this experience is the department’s weekly research seminar. Students participate in the seminar by writing critical reviews and referee reports of the papers presented, acting as discussants, and presenting their own research.

The most distinctive feature of UNH’s doctoral program is its dual emphasis on training economists and college teachers. The department of economics, in conjunction with the Teaching Excellence Program in the Graduate School, has developed a nationally known program that provides training in pedagogy for students whose career goals include teaching at the college level. This program, called the Cognate in College Teaching, is an option that Ph.D. students may pursue in addition to the requirements of the Ph.D. degree.

Requirements
The degree requirements include: nine core courses, comprehensive exams, two fields of concentration (a major field and a minor field), field and research workshops, a major field exam, doctoral dissertation proposal defense and final defense, and proficiency in one foreign language if deemed necessary by the student’s dissertation chair.

I. Core courses
ECON 976, 977 Microeconomics I and II
ECON 972, 973 Macroeconomics I and II
ECON 970 Advanced Economic Theory
ECON 926, 927 Econometrics I and II
ECON 957 History of Economic Thought
ECON 958 Topics in Economic Thought and Methodology

II. Comprehensive Examinations in Microeconomics and Macroeconomics

III. Fields of Concentration
Students must complete the requirements for one major field and one minor field.

Environmental Economics
Requirements for a Major Field
1. ECON 908 Environmental Economics: Theory and Policy
2. ECON 909 Environmental Valuation
3. One of the following: ECON 911 Natural & Environmental Resource Management; ECON 807 Economics of Sustainable Development; or other approved course.
4. ECON 992 Field Workshop

Requirements for a Minor Field
1. Two approved courses, at least one of which must be ECON 908 or ECON 909.

Health Economics
Requirements for a Major Field
1. ECON 941 Survey of Health Economics
2. ECON 942 Selected Topics in Health Economics
3. One of the following: PH 901 Epidemiology; PH 907 Public Health Policy; PH 922 Public Health Economics; or other approved course
4. ECON 992 Field Workshop

Requirements for a Minor Field
1. ECON 945 and ECON 946

International Economics
Requirements for Major Field
1. ECON 945 International Trade
2. ECON 946 International Finance
3. One of the following: ADMN 846 International Financial Management; ECON 846 Multinational Enterprises; ECON 807 Economics of Sustainable Development; ECON 868 Seminar in Economic Development; ADMN 841 International Management; or other approved course.
4. ECON 992 Field Workshop

Requirements for a Minor Field
1. ECON 945 and ECON 946

IV. Examination in Major Field
V. Elective Course

VI. Graduate Economics Seminar

Beyond the core theory courses and field requirements, students must take one additional graduate course from the department or an approved 800-level class from another department.

VII. Research Workshop

Beyond their second year of study, students continue to participate in the department’s weekly seminar by enrolling in two terms of Research Workshop (ECON 996). Research Workshop students present their own research in the research seminar series. They may also serve as discussants for outside speakers and write referee reports for the papers presented. Students must secure a dissertation adviser prior to signing up for their first term of Research Workshop. The research-workshop requirement should be completed by the end of the fourth year of study.

VIII. Foreign Language Requirement

Students may need to demonstrate reading knowledge of one foreign language if it is determined to be essential to the student’s area of research by his or her dissertation chair.

IX. Dissertation Proposal Defense

Prior to defending his/her proposal, a student must find a dissertation chair and form a dissertation committee. The dissertation proposal may be defended as part of the Research Workshop or separately from the Workshop.

X. Final Dissertation Defense

Cognate in College Teaching

The Ph.D. degree in economics from UNH is a research degree that provides students with a deep understanding of economic the-
ory, institutions, and empirical analysis. Most graduates of the program move into faculty positions at other institutions of higher learning where teaching is an important component of their responsibilities.

In conjunction with the Teaching Excellence Program in the Graduate School, the department has developed a track in its doctoral program that provides formal training in pedagogy for students whose career goals include teaching at the college level. This track, called the Cognate in College Teaching, is an option that Ph.D. students may select in addition to the requirements of the doctoral degree (discussed above). The Cognate is a 12-credit program and is awarded, upon satisfaction of all requirements, with the Ph.D. The Cognate can only be awarded in conjunction with the Ph.D. and none of the course requirements of the Cognate can be substituted for those of the Ph.D.

To enter the program, a student must formally apply to the Graduate Dean after at least one year of full-time graduate studies in economics. Admission to the Cognate will be decided by the graduate dean, based upon recommendations of the economics graduate program coordinator and the teaching excellence program director.

Requirements of the Cognate
Courses (12 credits)
- GRAD 950 Issues in College Teaching (2 credits)
- GRAD 951 Teaching with Writing (2 credits)
- ECON 898 Teaching Economics (4 credits) [or GRAD 978]
- GRAD 990 College Teaching Praxis (4 credits)

*Teaching Economics is offered as an 898 topics course until it is given its own course number.

Teaching Portfolio
A student must submit an approved teaching portfolio. The teaching portfolio is a relatively short collection of materials selected to document, summarize, and highlight one’s growth, experiences and strengths as a teacher. For those new to the academic job market, it can help set them apart from other candidates.

Upon completion of these requirements, the Cognate in College Teaching is awarded and noted on the graduate transcript. For more information see http://www.unh.edu/teaching-excellence/resources/Programs.html.

Education (EDUC)
www.unh.edu/education/

Degrees Offered: M.A., M.Ed, M.A.T., C.A.G.S., Ph.D.

The Department of Education offers a variety of programs leading to the master's degree, the doctor of philosophy degree, and the certificate of advanced graduate study.

The master of arts is offered in counseling. The master of arts in teaching is offered in elementary and secondary education. The master of education is offered in administration and supervision, counseling, early childhood education (including an option in special needs), elementary education, reading, secondary education, special education, and teacher leadership. Special education certification is also available to those who complete the M.A.T. or M.Ed. programs in either elementary or secondary education.

The certificate of advanced graduate study is offered in educational administration and supervision. The doctor of philosophy is offered in education.

The master of science for teachers is offered through the departments of chemistry, English, and mathematics. (See those departments for information.) Most programs are available to part-time admitted graduate students.

Admission Requirements
In addition to the materials required by the Graduate School, each application must include recent (within five years) Graduate Record Examination general test scores and a thoughtful, well-written statement of purpose for undertaking graduate study in a particular program.

Individual programs within the department may have additional admissions requirements. Applicants should refer to specific program descriptions. Consultation with a program faculty member is recommended. In all cases, the applicant’s relevant experience, references, and professional goals will be considered in the admission process.

Action on applications to Department of Education programs varies by individual program. Applicants to this program must refer to the online Programs of Study listing for additional application instructions. This can be done by referring to the Graduate School’s program of study page and then selecting the specific program of study. The additional application instructions can be found under each program of study’s application requirements.

Doctor of Philosophy
Program information: Please contact Education department

The Department of Education offers a Ph.D. in education with specialization in fields related to the areas of teacher education, educational leadership and policy studies, curriculum and instruction, literacy and schooling, and experiential/outdoor education. The doctoral program is designed to engender a broad understanding of the field of education by encouraging focused scholarly inquiry grounded in the reality of educational practice. Professors and students work to place educational issues in a philosophical and socio-cultural context. Collaborative projects sometimes move beyond the boundaries of the University into other educational settings. The program enrolls full- and part-time students.

An individual program of study is planned by the student and her or his guidance com-
committee. Each student’s program includes a set of common core courses, specialized study, a number of selected electives from across areas of inquiry, and required research preparation. Students must meet specific University, department, and program requirements. Within this framework, individual programs can vary widely from student to student depending upon the student’s own interests and goals.

The Ph.D. in education provides students with preparation for research, teaching, and leadership in a variety of settings. Graduates hold positions at all levels of schooling, from colleges and universities to K-12 schools. Former students are also involved in work as policy makers, community agency directors, consultants, and research analysts.

Admission

Students admitted to the program must have completed a master’s degree in education or a related field and will normally have worked full time as an educator at the elementary, secondary, or college level. Entering students are expected to have completed some graduate-level coursework in educational psychology, curriculum and instruction, educational structure and change, and the philosophical and social foundations of education. Exceptional candidates who do not meet all of these course prerequisites will be considered. To apply, candidates must submit a Graduate School application, transcripts of all undergraduate and graduate coursework, and Graduate Record Examination (GRE) general test scores.

In addition to the personal statement required on the Graduate School application, candidates must submit an essay on an educational issue. This essay should discuss one issue in the field of education that is of interest to the candidate. It should explore the opportunities and challenges this issue poses and explain why the applicant finds it personally compelling (1,000 to 1,500 words in length). Prior to completing and submitting the application, it is highly recommended that the candidate arrange for an on-campus interview with the director of doctoral studies or with an appropriate department faculty member. Applicants from distant locations may interview by phone. Contact the Department of Education by phone: (603) 862-2310 or e-mail: education.department@unh.edu.

Degree Requirements

Candidates for the degree must meet admission requirements, develop and complete an approved program of study in consultation with their guidance committee, complete required coursework, undergo an annual assessment review by the Doctoral Advisory Committee (for first- and second-year students), pass a qualifying examination to advance to candidacy, establish a dissertation committee, develop an approved dissertation proposal, write and present the dissertation, and pass the final oral examination.

Program of Studies

Upon acceptance to the program, students are assigned an adviser. During the first year of study, students identify, either in consultation with their adviser or with the director of doctoral studies, faculty members to serve as their guidance committee. Programs for the doctoral degree in education are planned individually by students and their guidance committees. The program of study consists of four major elements: common core courses, specialization specific to the student’s scholarly interests, a number of selected electives from across areas of inquiry, and research preparation, including specific advanced research modules. At least five common core courses are required of all students: Proseminar in Doctoral Studies, Critical Inquiry in Education, Educational Administration and Supervision, Qualitative Inquiry in Education, and Quantitative Inquiry in Education, Introductions to Statistics: Inquiry, Analysis, and Decision Making; Applied Regression Analysis for Educational Research, and Quantitative Inquiry: Methods and Techniques of Educational Research. Typically students complete 52 to 64 hours in graduate coursework following their matriculation. These hours do not include doctoral research (EDUC 999).

Qualifying Examination

To be advanced to Ph.D. candidacy, students must satisfactorily complete qualifying examinations as well as other program requirements. After completing at least two-thirds of their coursework, students may take the qualifying examination. The examination is a written exam to be developed, supervised, and evaluated by the student’s guidance committee. The qualifying examination is used to evaluate the student’s general knowledge in relevant areas of inquiry, and his or her fitness for engaging in research, particularly in the subject proposed for the dissertation.

Dissertation

To complete the degree, the student must present and defend a dissertation of original research and publishable quality.

Doctor of Philosophy in Literacy and Schooling

Note: The Literacy and Schooling program (Ph.D.) is no longer accepting applications to their program effective 5/27/2005. This program is now an area of inquiry option in the Ph.D. in education program.

Administration and Supervision

Program information: Todd DeMitchell, Virginia Garland

The Department of Education offers the degrees of Master of Education and the Certificate of Advanced Graduate Study in Educational Administration and Supervision.

Master of Education

The program is designed for the experienced teacher who wishes to become qualified in the broad area of supervision and administration, grades K-12. Emphasis is on the elementary and secondary school principalship and instructional supervision. This program leads to certification in New Hampshire as a principal.

Core requirements (28 credits): 953, Seminar in Curriculum Study; 961, Public School Administration; 962, Educational Finance and Business Management; 965, Educational Supervision; 967, School Law; 969, Practicum in Educational Administration; and 972, Educational Program Evaluation.

Electives (8 credits): Electives are elected in consultation with the program adviser. EDUC 976, The Principalship, is strongly recommended as an elective.

Concluding experience: A degree candidate must successfully complete one of the following: a comprehensive oral examination based on a set of theses statements prepared by the candidate or a major research study related to school administration, curricula, or educational supervision.

Certificate of Advanced Graduate Study (C.A.G.S.)

This program is designed for those who possess a master’s degree in school administration or a master’s degree in a related educational field supplemented by work experience
Master of Arts (62 credit hours)

NOTICE**: The Graduate Program in Counseling in the Department of Education is suspending admissions to the Master of Arts program for the summer and fall of 2009. Notice will be given on this Web site about any future admissions to this program. PLEASE NOTE THAT ADMISSIONS TO THE MASTER OF EDUCATION (M.ED.) PROGRAM IN COUNSELING LEADING TO CERTIFICATION AS A SCHOOL COUNSELOR, OR PROFESSIONAL POSITIONS IN SOME HELPING PROFESSIONS, IS UNAFFECTED. THE PROGRAM IS ACCEPTING APPLICATIONS AT BOTH THE DURHAM AND MANCHESTER CAMPUSES. For further information, please contact the department directly.

The Master of Arts in Counseling requires the following:

Core Requirements (52 credits): 919, Counseling Practicum: Professional and Ethical Orientation; 920, Counseling Theory and Practice; 921, Psychology of Career and Personal Development; 922, Assessment in Counseling; 923, Group Counseling; 924, Psychological Disorders: Variations in Human Development; 925, Counseling Internship I; 926, Counseling Internship II; 927, Human Growth and Development: Personality Theory; 929, Advanced Counseling Internship; 930, Research in Counseling; 931, Clinical Diagnosis and Treatment Planning in Counseling; 932, Society and Culture: Contemporary Issues in Counseling.

Electives (4 credits): Selected in consultation with the student’s adviser, electives may be chosen from graduate-level courses on campus, or may be completed through an approved independent study.

Concluding experience: Degree candidates must complete a comprehensive essay examination.

Early Childhood Education
Program information: Leslie Couse

The Department of Education offers the master of education degree in early childhood education and an option in special needs. Certification as an early childhood teacher (N-3) is available.

This program is an advanced course of study designed for teachers, administrators, and other early childhood practitioners who wish to improve their professional competence and broaden their career opportunities. The program emphasizes the acquisition of knowledge and competencies in child development (birth through eight years), learning environments, developmentally appropriate curriculum, developmental and cultural diversity, and professional leadership. The coursework culminates in extensive field-based experience.

Admission requirements: All admitted students are expected to have had at least one course in child development at the upper-division level and at least 200 hours of supervised classroom experience with children from birth through eight years of age, or the equivalent.

Core requirements (30 credits): 941, Diversity and Child Development; 942, Sociocultural Perspectives on Teaching and Learning; 943, Changing Contexts in Early Education; 944, Inclusive Curriculum for Young Children; 948, Leadership and Advocacy in Early Childhood Education; one course selected from the special needs option courses offering (EDUC 860, 947, 951, 949); and two semesters (6 credits) of internship in EDUC 900B and 901B.

Electives (6 credits): Selected in consultation with the program adviser.

Concluding experience: A degree candidate...
must successfully complete one of the following: a comprehensive written and oral examination, or a research thesis.

Special Needs Option

Program information: Leslie Couse
The Department of Education offers the master of education degree in early childhood education and an option in special needs. An early childhood special education certificate is available (birth-8).

This program is an advanced course of study designed for teachers, administrators, and other early childhood practitioners who wish to improve their professional competence and broaden their career opportunities. The program emphasizes the acquisition of knowledge and competencies in child development (birth through eight years), learning environments, developmentally appropriate curriculum, developmental and cultural diversity, and professional leadership. The coursework culminates in extensive field-based experience.

Admission requirements: All admitted students are expected to have had at least one course in child development at the upper-division level and at least 200 hours of supervised classroom experience with children from birth through eight years of age, or the equivalent.

In addition to the early childhood core requirements described above, students choosing this option will concentrate on young children who are at risk for, or have, developmental difficulties and special needs. Coursework emphasizes an understanding of the role of the family, community, and social policy in early development and intervention. The program is noncategorical in its approach to assessment and educational planning.

Core requirements (38 credits): identical to core requirements of early childhood program with the addition of 860, Introduction to Young Children with Special Needs; 947, Curriculum for Young Children with Special Needs: Evaluation and Program Design; and 949, Supporting Parents of Students with Special Needs.

Electives (4 credits): selected in consultation with the program adviser.

Concluding experience: A degree candidate must successfully complete one of the following: a comprehensive written and oral examination, or a research thesis.

These program requirements are subject to modification in order to reflect changes in New Hampshire state certification requirements for general special education.

Reading

Program information: Grant Cioffi, Paula Salvio, Ruth Wharton-McDonald
The graduate program in reading prepares reading and writing specialists and teachers to provide instruction and leadership in literacy in a variety of educational contexts. The instructional sequence integrates theory, research, and instructional practice, and incorporates field-based and clinical components. Particular emphasis is placed on the interrelationship of reading and writing. Graduates of the program provide direct instruction in literacy and offer leadership in organizing, managing, and evaluating literacy programs.

Core requirements (24 credits): 907, Foundations of Literacy Instruction; 908-909, Clinical Diagnosis and Remediation of Reading Difficulties and Disabilities; 910, Reading and Writing Methods in the Middle/Secondary School; 913, Field Practicum in Reading; 914, Seminar in Reading Research.

Electives (12 credits): selected in consultation with the program adviser; a student using the research thesis option as a concluding experience will use 8 credits for EDUC 899, Master’s Thesis.

Concluding experience: A degree candidate will successfully complete either a written examination or a research thesis.

Special Education

Program information: Vincent Connelly, Georgia Kerns, Jan A. Nisbet, William Wansart
The special education program prepares highly qualified educators who possess the knowledge, disposition, and skills necessary to take the lead in establishing effective teaching and learning environments for a diverse population of learners, who are capable of collaborating with classroom teachers as team leaders or consultants, and who utilize these skills within their school communities, and within the profession itself. The program meets current certification requirements in the state of New Hampshire in General Special Education, Learning Disabilities, Mental Retardation and Special Education Administration.

Degree Requirements

Prerequisites for General Special Education Certification:

1. All candidates are required to complete a course in mathematics teaching methods and a course in reading teaching methods. At UNH, courses that meet the reading requirement are EDUC 806, Introduction to Reading Instruction and EDUC 907, Foundations of Reading Instruction. Courses which meet the mathematics requirement are MATH 701, Exploring Math for Teachers I and MATH 702, Exploring Math for Teachers II. Equivalent courses taken at another college or university may be substituted.

2. All students are required to complete EDUC 850, Introduction to Exceptionality and EDUC 851, Educating Exceptional Learners. Equivalent courses taken at another college or university may be substituted.

3. Credits for prerequisite courses will not count toward those needed for the M.Ed. degree.

Core Courses (32 credit hours)

Required courses for all students:

EDUC 756/856 Supporting Families of Individuals with Exceptionalities 4 cr.
EDUC 900C Internship and Seminar in Special Education 6 cr.
EDUC 901C Internship and Seminar in Special Education 6 cr.
EDUC 938 Advanced Seminar in Special Education 4 cr.
EDUC 939 Assessment of Children with Learning Difficulties 4 cr.
EDUC 940 Teaching Children with Learning Difficulties 4 cr.
EDUC 981 Methods and Techniques of Educational Research 4 cr.

Elective Courses (12 credit hours minimum)

EDUC 852 Contemporary Issues in Learning Difficulties 4 cr.
EDUC 853 Contemporary Issues in Behavior Disorders 4 cr.
EDUC 854 Contemporary Issues in Developmental Disabilities 4 cr.
EDUC 855 Fostering Social Relationships for Students Who Experience Severe Disabilities 2 cr.
EDUC 860 Introduction to Young Children with Special Needs 4 cr.
EDUC 876 Reading for Children with Special Needs 4 cr.
EDUC 908/909 Diagnosis and Remediation of Reading Difficulties 4 cr.
EDUC 947 Curriculum for Young Children with Special Needs: Evaluation and Program Design 4 cr.
EDUC 951 Laws and Regulations Affecting the Education of Individuals with Disabilities 4 cr.

Students will select elective courses in consultation with their adviser. At most, 4 credit hours of EDUC 899, Thesis may count as elective work.
Other courses may be included on recommendation from the adviser.

Core Courses for certification in Learning Disabilities in addition to those necessary for certification in General Special Education:

EDUC 852 Contemporary Issues in Learning Disabilities 4 cr.
EDUC 908/909 Diagnosis and Remediation of Reading Disabilities 4 cr./4
EDUC 910 Reading and Writing Methods in the Middle/Secondary School 4 cr.
EDUC 915 Special Education: Determining Eligibility and Program Planning 4 cr.
EDUC 952 Inclusive Assessment, Curriculum, Instruction and Communication Supports 4 cr.
EDUC 954 Leadership and Systems Change in Inclusive Education 4 cr.
EDUC 956 Learning to Listen: Positive Behavioral Supports 4 cr.
COMM 914 Seminar in Alternative and Augmentive Communication 3 cr.
Core Courses for Special Education Administration in addition to those necessary for certification in General Special Education:

EDUC 951 Laws and Regulations in Special Education 4 cr.
EDUC 956 Learning to Listen: Positive Behavioral Supports 4 cr.
EDUC 961 Public School Administration 4 cr.
EDUC 962 Educational Finance and Business Management 4 cr.
EDUC 964 Human Resources in Education 4 cr.
EDUC 974 Administrative Internship 6 cr.

Concluding Experiences

All students will have the option of one of two concluding experiences:
1. Research project with a defense, or
2. A research thesis that meets the requirements of the Graduate School and the Education Department (6-10 credits).

Requirements for the thesis are explained in the Graduate School publication entitled Thesis and Dissertation Manual. Requirements for the project may be obtained from the adviser or on the program Web site www.gradschool.unh.edu.

Grades and Credit Hours

The M.Ed. degree requires a minimum of 44 hours of graduate level credits. The exact number of credit hours will depend on the student’s background, competencies, and professional goals, and will be determined by the adviser.

Teacher Education Program

Program information: Tom Schram, Cindy Glidden

The teacher education program prepares teachers who possess the knowledge, disposition, and skills necessary to take the lead in establishing effective teaching and learning environments within their own classrooms and school communities.

The Department of Education offers the master of arts in teaching degree in elementary and secondary education and the master of education degree in elementary and secondary education for those seeking initial teacher licensing. The master of education degree in teacher leadership is available for experienced teachers.

Applications to teacher education programs are evaluated on the following criteria: undergraduate academic record, Graduate Record Examination (GRE) general test scores, personal statement, and letters of recommendation regarding academic ability, motivation, interpersonal skills, and potential for success as a teacher. Those seeking admission to programs leading to teacher licensing should also have a positive recommendation from EDUC 500, Exploring Teaching, or equivalent experience.

In our admissions process, we seek evidence that our students have the following knowledge, abilities, and dispositions: motives to teach that include a strong social commitment to contribute to society through education; a disposition to care for their students; an ability to interact positively with children and adults; a capacity to win the respect of their peers and be effective in group interaction, showing openness to the needs and views of others; well-developed communication skills, including speaking, writing, and listening skills, as well as an ability to engage others in both the giving and receiving of information and feelings; perceptiveness or the ability to identify and process the relevant details in their environment, especially in the context of a classroom; the ability to make reasonable judgments in a context of complex situations that change from moment to moment; the capacity for clear thinking and an ability to translate their thoughts into simple and clear explanations; superior academic skills, extensive knowledge of at least one major discipline, intellectual curiosity, the ability to be open to the unknown, and the willingness to tolerate uncertainty in the face of enormous pressure to deny it; a disposition to take charge of their own learning, which includes the active pursuit of feedback and the willingness to take thoughtful risks.

Any course taken in the Department of Education that will be used to fulfill a teacher licensure requirement must be completed with a grade of B– or better.

Master of Arts in Teaching and Master of Education Programs for Those Seeking Teacher Licensure

These programs are designed for two types of students: UNH undergraduates who anticipate completing the Five-Year Teacher Preparation Program at UNH, and students who completed an undergraduate degree either at UNH or elsewhere with little or no coursework in education. The programs lead to teaching licensure at the elementary and secondary levels. Admission to these programs is competitive.

Licensure requirements that must be met prior to or as part of the master’s degree program include completion of 4 credits or an equivalent in each of the following: 500/935, Exploring Teaching; 800, Educational Structure and Change; 801, Human Development and Learning: Educational Psychology; 803, Alternative Teaching Models; 805, Alternative Perspectives on the Nature of Education; 851A or B, Educating Exceptional Learners; 900A, 901A, Internship and Seminar/Teaching (6 credits each, must be taken as part of the program).

Elementary teacher licensure requirements include two additional courses: 806, Introduction to Reading Instruction in the Elementary Schools, or 907, Foundations of Reading Instruction; and a mathematics course: MATH 701, Exploring Mathematics I, or MATH 702, Exploring Mathematics II (4 credits each), or the equivalent.

Students pursuing teacher licensure in art, biology, chemistry, earth sciences, general science, physics, or social studies must also complete EDUC 807, Teaching Reading through the Content Areas (2 credits).

Credits earned in the seven-week Live, Learn, and Teach summer program may be applied toward the master’s degree. Live, Learn, and Teach satisfies the EDUC 500/935, Exploring Teaching requirement through 4 credits of EDUC 935, Seminar and Practicum in Teaching; 4 credits of 800A, Educational Structure and Change; and 4 credits of 803H, Experiential Curriculum.

Preparation for licensure in general special education is available to those who complete the M.A.T. or M.Ed. programs in either elementary or secondary education. This licen-
sure allows recipients to serve as general special education teachers. In order to qualify for licensure in general special education, students must complete 22 credits (18 of which may be used toward the M.Ed. degree, or 6 toward the M.A.T. degree); a reading methods course; a mathematics methods course; 850, Introduction to Exceptionality; 851, Educating Exceptional Learners; 939-940, Assessment and Teaching of Children with Learning Difficulties; 900C, 901C, Internship and Seminar (3 credits each).

Dual licensure in early childhood education and elementary education is available to those who are enrolled in the M.Ed. in Elementary Education. This dual licensure allows recipients to serve as early childhood and/or elementary teachers. The early childhood/elementary education dual-certification program option is intended for students who have majored in family studies with an option in child studies or young child/nursery-kindergarten, or the equivalent. Dual licensure requires three graduate courses in early childhood education to be selected in consultation with an adviser from the early childhood program. The three early childhood courses will count as a graduate concentration in the M.Ed. elementary program. Students will complete a full-year internship at the K-3 level under the auspices of the teacher education program.

Master of Arts in Teaching (Elementary and Secondary)

Students complete an Internship (12 credits) and an additional 20 credits. Of the 20 additional credits at the graduate level, three courses totaling 9 to 12 credits must be taken from a subject field outside education. The remaining 8-11 credits can be in education or in another department.

In consultation with his/her adviser, a graduate student in this program is strongly encouraged to develop a subject-area concentration consisting of at least 3 courses.

Concluding experience: A degree candidate must successfully complete a teacher education program portfolio and colloquium in conjunction with the internship.

Master of Education in Teacher Leadership

This program is designed for experienced teachers who wish to remain in the classroom but expand their leadership role in improving schooling. Admitted students usually have three or more years of teaching experience. The program provides a context in which teachers can build upon their classroom experiences as teachers and learners; expand their understanding of the roles of teachers in schools; develop tools of inquiry that enable them to investigate questions about teaching, learning, and school reform; inspire others to work toward institutional change; and collaborate effectively with other teachers, administrators, and parents in ways that move the teaching profession forward. Students must complete a minimum of 32 credits, 12 of which are a required core. At least four courses must be taken in the Department of Education.

Core requirements: 958, Analysis of Teaching; 953, Seminar in Curriculum Study; and one of the following: 981, Quantitative Inquiry: Methods and Techniques of Educational Research; 984, Teacher as Researcher; or 980, Research in the Teaching of Writing.

Concentration: A set of courses (three or more), which reflect a personal interest, need, or goal, is chosen by the student in consultation with his or her adviser. The concentration may be in or outside education. Potential areas of concentration include mentoring, curriculum, ESL, and increasing knowledge in subject matter fields.

Elective courses: Graduate-level courses in or outside education may be taken in addition to the concentration.

Concluding experience: A degree candidate must complete an inquiry project, which may be theoretical or empirical in nature. Theoretical projects focus on a problem or issue of interest to the candidate and require synthesis of professional experience, coursework, and professional literature. Empirical projects involve the systematic collection, analysis, and reporting of data using appropriate methodologies. Students may also develop a portfolio with a reflective essay (including portfolios developed for the National Board of Professional Teaching Standards).

Students may choose to do a research thesis. Students choosing the research thesis must complete 6 credits, 4 of which will count toward their concentration.

**Courses**

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<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<td>Educational Structure and Change</td>
<td>2 OR 4</td>
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<td>EDUC 801</td>
<td>Human Development and Learning: Educational Psychology</td>
<td>2 OR 4</td>
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<tr>
<td>EDUC 803</td>
<td>Alternative Teaching Models</td>
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<td>EDUC 805</td>
<td>Alternative Teaching Perspectives on the Nature of Education</td>
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<td>EDUC 806</td>
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EDUC 901B Internship and Seminar in Early Childhood Education 3
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EDUC 902 Doctoral Pro-seminar 4
EDUC 903 Normative Inquiry in Education 4
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EDUC 908 Clinical Diagnosis and Remediation of Reading Difficulties and Disabilities 4
EDUC 909 Clinical Diagnosis and Remediation of Reading Difficulties and Disabilities 4
EDUC 910 Reading and Writing Methods in the Middle/Secondary School 4
EDUC 913 Field Practicum in Reading 4
EDUC 914 Seminar in Reading Research 4
EDUC 916A Seminar in Research on Literacy Instruction 2
EDUC 916B Seminar in Research on Literacy Instruction 2
EDUC 916C Seminar in Research on Literacy Instruction 2
EDUC 916D Seminar in Research on Literacy Instruction 2
EDUC 919 Counseling Practicum: Professional and Ethical Orientation 4
EDUC 920 Counseling Theory and Practice 4
EDUC 921 Psychology of Career and Personal Development 4
EDUC 922 Assessment in Counseling 4
EDUC 923 Group Counseling 4
EDUC 924 Psychological Disorders and Variations in Human Development 4
EDUC 925 Counseling Internship I 4
EDUC 926 Counseling Internship II 4
EDUC 927 Human Growth & Development: Personality Theory 4
EDUC 929 Advanced Counseling Internship 4
EDUC 930 Research in Counseling 4
EDUC 931 Clinical Diagnosis and Treatment Planning in Counseling 4
EDUC 932 Society and Culture: Contemporary Issues in Counseling 4
EDUC 933 Developmental Models of Comprehensive School Guidance 4
EDUC 935A Seminar and Practicum in Teaching 4
EDUC 935B Seminar and Practicum in Teaching 4
EDUC 938 Advanced Seminar in Special Education 4
EDUC 939 Assessment and Teaching of Children with Learning Difficulties 4
EDUC 940 Assessment and Teaching of Children with Learning Difficulties 4
EDUC 941 Diversity and Child Development 4
EDUC 942 Socio-cultural Perspectives on Teaching and Learning 4
EDUC 943 Changing Contexts in Early Education 4
EDUC 944 Inclusive Curriculum for Young Children 4
EDUC 947 Curriculum for Young Children with Special Needs: Evaluation and Program Design 4
EDUC 948 Leadership and Advocacy in Early Childhood Education 4
EDUC 950 Research in Culture, Behavior, and Development 4
EDUC 951 Laws and Regulations Affecting the Education of Students with Disabilities 4
EDUC 952 Inclusive Assessment, Curriculum, Instruction, and Communication Supports 4
EDUC 953 Seminar in Curriculum Study 4
EDUC 954 Leadership and Systems Change in Inclusive Education 2
EDUC 956 Learning to Listen: Developing Positive Behavior Supports for Students with Challenging Behaviors 4
EDUC 957 Collaborative Models of Supervision for Cooperating Teachers 4
EDUC 958 Analysis of Teaching 4
EDUC 960 Mentoring New Teachers 2
EDUC 961 Public School Administration 4
EDUC 962 Educational Finance and Business Management 4
EDUC 964 Human Resources in Education 4
EDUC 965 Educational Supervision and Evaluation 4
EDUC 967 School Law 4
EDUC 968 Collective Bargaining in Public Education 4
EDUC 969 Practicum in Educational Administration 4
EDUC 971 School Facilities Management 4
EDUC 972 Educational Program Evaluation 4
EDUC 973 Policy, Politics, and Planning in Education 4
EDUC 974 Administrative Internship and Field Project 6
EDUC 975 Administrative Internship and Field Project 6
EDUC 977 Leadership: The District Level Administrator 4
EDUC 978 Applied Regression Analysis in Educational Research 4
EDUC 980 Research in the Teaching of Writing 4
EDUC 981 Quantitative Inquiry: Methods and Techniques of Educational Research 4
EDUC 982 Issues and Methods in Ethnographic Research in Education 4
EDUC 983 Advanced Psychology of Human Learning 4
EDUC 984 Teacher as Researcher 4
EDUC 985 Contemporary Issues and Theories in Human Learning and Development 4
EDUC 986 Philosophy of Education 4
EDUC 988 Alternative Models of Teacher Development 4
EDUC 989C Programming in Adult Education 4
EDUC 990 Developmental Perspectives on Adulthood 4
EDUC 991 Curriculum Theory I 4
EDUC 992 Curriculum Theory II 4
EDUC 993 Epistemology and Education 4
EDUC 995 Independent Study 1 TO 4
EDUC 998 Special Topics 1 TO 4
EDUC 999 Doctoral Research 0

Electrical and Computer Engineering (ECE)
www.ece.unh.edu

Degrees Offered: M.S., Ph.D.
The Department of Electrical and Computer Engineering offers a program of study leading to the master of science degree with a major in electrical engineering. An option in electrical engineering is available within the engineering Ph.D. program.

Opportunities
Advanced degrees in electrical engineering open the door to a wider variety of job opportunities, particularly with regard to consulting, research and development, and positions in academia. Within the department, opportunities for formal study, research, and individual or team projects are available in the following areas: biomedical engineering; communication systems; digital signal processing; computer engineering, computer networks, digital systems, and logical synthesis; robotics and neural networks; image processing and pattern analysis; control systems; fiber optics; electromagnetics; space systems engineering; rapid prototyping technologies; VLSI circuits; reconfigurable, testable, and fault-tolerant computational structures; ocean engineering; and instrumentation

Admission Requirements
An applicant should have completed a baccalaureate degree in electrical engineering or have comparable training, which includes courses in mathematics and physical science, network theory, digital systems, fields and waves, electronics, and electrical circuits, with appropriate laboratory experiences. Students with a baccalaureate degree from non-U.S. universities must take and submit current (within five years) general scores from the Graduate Record Examination.

Degree Requirements
M.S. Degree Requirements

Each student meets with a faculty adviser to set up a program of study. No specific course requirements are mandated. However, the student must consult their adviser before signing up for the courses.

Students are required to take a minimum of 34 credit hours for both the thesis and non-thesis options as shown below. With approval by the department and the Graduate School Dean, some 700-level courses in other departments may be used to fulfill requirements at the 800-level.

Thesis Option:
24 credit hours of graduate course work, with at least 12 of those credit hours earned in 900-level courses 4 credits of ECE 900 seminar 6 credits of thesis work.

Non-Thesis Option:
30 credit hours of graduate course work, with at least 18 of those credit hours earned in 900-level courses 4 credits of ECE 900 seminars
Ph.D. Degree Requirements
Following entrance into the doctoral program, a guidance committee is appointed for the student by the dean of the Graduate School upon recommendation of the graduate coordinator. This committee assists students in outlining their programs and may specify individual coursework requirements.

To qualify for the Ph.D. in engineering, the student must successfully pass two separate examinations. The first exam is called the preliminary exam and is normally taken at the end of the first academic year unless it is petitioned by the student and approved by the graduate committee. This exam tests the student’s general electrical engineering knowledge at the undergraduate level and, based on performance, the student may be advised to take remedial courses, given a chance to retake the exam during the next semester, or discontinued from the program. This decision will be made by the department. The comprehensive exam is normally given at the completion of all coursework and primarily involves the development and presentation of a research proposal to the guidance committee.

Typically, 24 credits of coursework beyond the M.S. are expected. A minimum cumulative grade-point average of 3.33 must be maintained. Upon the successful completion of all coursework and the comprehensive examination, the student is advanced to candidacy and, upon the recommendation of the graduate coordinator, a doctoral committee is appointed by the dean of the Graduate School. The doctoral committee conducts an annual review of the student’s progress, supervises and approves the doctoral dissertation, and administers the final dissertation defense.

Courses

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>ECE 804</td>
<td>Electromagnetic Fields and Waves II</td>
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<tr>
<td>ECE 811</td>
<td>Digital Systems</td>
<td>4</td>
</tr>
<tr>
<td>ECE 814</td>
<td>Introduction to Digital Signal Processing</td>
<td>0 OR 4</td>
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<tr>
<td>ECE 815</td>
<td>Introduction to VLSI</td>
<td>4</td>
</tr>
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<td>ECE 817</td>
<td>Introduction to Digital Image Processing</td>
<td>0 OR 4</td>
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<td>ECE 834</td>
<td>Network Data Communications</td>
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<td>ECE 845</td>
<td>Environmental Acoustics I: Air and Water</td>
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<tr>
<td>ECE 857</td>
<td>Fundamentals of Communication Systems</td>
<td>0 OR 4</td>
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<td>ECE 858</td>
<td>Communication System Design</td>
<td>0 OR 4</td>
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<tr>
<td>ECE 860</td>
<td>Introduction to Fiber Optics</td>
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<td>ECE 872</td>
<td>Control Systems</td>
<td>4</td>
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<tr>
<td>ECE 874</td>
<td>Introduction to Neural Networks</td>
<td>4</td>
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<tr>
<td>ECE 875</td>
<td>Applications of Integrated Circuits</td>
<td>0 OR 4</td>
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<tr>
<td>ECE 877</td>
<td>Collaborative Engineering I</td>
<td>4</td>
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<tr>
<td>ECE 881</td>
<td>Physical Instrumentation</td>
<td>0 OR 4</td>
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<td>ECE 884</td>
<td>Biomedical Instrumentation</td>
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<tr>
<td>ECE 885</td>
<td>Environmental Acoustics II: Air and Water</td>
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<tr>
<td>ECE 896</td>
<td>Special Topics in Electrical or Computer Engineering</td>
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<tr>
<td>ECE 899</td>
<td>Master’s Thesis</td>
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<td>ECE 900</td>
<td>Seminar</td>
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<td>ECE 901</td>
<td>Electromagnetic Wave Theory I</td>
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<tr>
<td>ECE 915</td>
<td>Advanced Active Circuits</td>
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<td>ECE 939</td>
<td>Statistical Theory of Communications</td>
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<td>ECE 940</td>
<td>Information Theory</td>
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<td>ECE 941</td>
<td>Digital Signal Processing</td>
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<td>ECE 944</td>
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<td>ECE 955</td>
<td>Estimation and Filtering</td>
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<td>ECE 960</td>
<td>Computer Architecture</td>
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<td>Introduction to Pattern Recognition</td>
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<td>Advanced Topics in Computer Engineering</td>
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<td>ECE 994</td>
<td>Advanced Topics in Systems Engineering</td>
<td>1 TO 3</td>
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<td>ECE 998</td>
<td>Independent Study</td>
<td>1 TO 3</td>
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<tr>
<td>ECE 999</td>
<td>Doctoral Research</td>
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</table>

Degrees Offered: M.S.T., M.A., M.F.A., Ph.D.
The Department of English offers four advanced degrees: master of arts with options in literature or English language and linguistics; master of science for teachers; master of fine arts in writing; and doctor of philosophy.

Admission Requirements
All applicants must submit writing samples in accordance with guidelines available from the English department graduate office. All applicants (except those for the MFA and MST) must submit current scores (within five years) from the general test of the GRE. Applicants for the doctor of philosophy degree program in literature must also submit scores for the subject test of literature in English. A student admitted to the Ph.D. program must hold an M.A. degree or be in the final stage of completing requirements for the degree.

Applicants for the degree of master of science for teachers should consult the general regulations of the Graduate School for special admission requirements.

All applicants who wish to be considered for teaching assistantships or tuition scholarships must complete an application form, available from the English department graduate office or from their Web site listed above or from the graduate school forms page.

Degree Requirements

M.A. Degree Requirements

Literature Option
An M.A. candidate must complete 36 credit hours at the 800 or 900 level, including three seminar courses and a fourth seminar in literature or ENGL 998, Master’s Paper. At least six courses must be literature courses offered by the English department (as distinct from courses in critical theory, linguistics, writing, or teaching methods); there are additional distribution requirements. If a student chooses the Master’s Paper option, the six-course requirement is reduced to five literature courses. Each M.A. candidate must also pass ENGL 925, The Graduate Study of Literature, and one course in literary theory. The literary theory requirement would normally be met by successful completion of ENGL 813, 814, or 926. As a general rule, all courses counting toward the M.A. degree should be taken in the English Department, but two courses may be taken in other departments with approval. No more than two literature courses should be taken in a combined 700/800 (split) level course.

M.A. candidates must pass a reading examination in a foreign language or demonstrate that they have passed a fourth-semester college-level language course with a grade of B or better. Students whose native language is not English may be exempt from this requirement.

English Language and Linguistics Option

Students who wish to specialize in any of the various areas of English language and linguistics may design an M.A. program to meet their interests. Specialties include applied linguistics and the teaching of English as a second language as well as the traditional subfields of linguistics. Psycholinguistics courses are offered through the psychology department.

To earn the M.A. degree, students must complete at least 32 credit hours at the 800 or 900 levels, including one seminar course, and 4 credits of ENGL 998, in which they are to produce a substantial scholarly paper. Unless the student already has a strong background in linguistic theory, the program of study must include one course in
phonetics and phonology (ENGL 893) and one in syntax and semantics (ENGL 894). Reading knowledge of one foreign language is required. This may be demonstrated by passing a departmental examination or by receiving a grade of B or better in a fourth-semester college-level language course. Students whose native language is not English may be exempt from this requirement. The student's course of study must be approved by the program adviser.

M.S.T. Degree Requirements
The master of science for teachers is designed for high school teachers. No foreign language is required. Students must take the Writing Institute (part of the Literacy Institutes sponsored by the University of New Hampshire) or an equivalent course in the teaching of writing such as English 810 (4 cr. version). The student must complete 32 credit hours at the 800 or 900 levels. At least 24 of these credits must be in the Department of English. Courses taken outside the department must be approved by the student's adviser.

The department offers special summer programs, which can be taken to fulfill some or all of the course requirements for the M.S.T. degree. The New Hampshire Literacy Institutes are summer institutes that focus on the teaching of writing and reading in grades K-12. Summer institutes emphasize writing workshops in fiction, nonfiction, and poetry and may include courses in literature and composition theory and research.

Master of Fine Arts in Writing
In the fall of 2007, UNH launched a master of fine arts in writing, creating a three-year, 48-credit program that aims to provide students with the intensive training in their craft that they'll need to start their lives as professional writers. Students concentrate in fiction, nonfiction, or poetry and are taught by a faculty of nine working writers, each of whom specializes in one of these fields. Students learn in small workshops and in individual conferences with their teachers. Conference teaching is a cornerstone of the UNH graduate writing program.

Students are required to take four workshops in their major genre. In addition, students take one form and theory course in their major genre, five elective courses that may include additional writing courses or courses from the English department's offerings in other fields (such as literature, linguistics, or composition studies), and 8 credit hours of the M.F.A. thesis. Teaching assistants are required to take English 910, Practicum in Teaching College Composition, as one of their electives. There is no foreign language requirement.

The M.F.A. thesis is a book-length, publishable manuscript. For fiction writers, the thesis could be a collection of short stories, a story cycle (linked stories), or a novel. For nonfiction writers, the thesis could be a collection of themed essays and/or magazine articles or a book of creative nonfiction. For poets, the thesis would be a book-length collection of poems. The minimum length of the thesis is 150 pages for fiction and nonfiction writers and 45 pages for poets. Students will work closely with a thesis adviser as they write and pass an oral defense of the thesis, a defense conducted by a three-member thesis committee of writing faculty. Students will also conduct a public reading of their thesis in an event organized by the writing faculty.

In addition, the M.F.A. program offers students opportunities to publish an online journal called Barnstorm, as well as intern at publishing houses and magazines and teach in the community at prisons, senior centers, and schools. A select number of students are chosen to teach UNH undergraduate writing courses and to work in the University's Writing Center.

The program admits an average of 15 new students a year, which creates a writing community of 45 student writers.

Ph.D. Degree Requirements
The Ph.D. program combines the essential guidance and discipline of coursework with the equally essential freedom of independent study and research. To be admitted to the doctoral program, a student must hold an M.A. degree. Students choose between two areas: literature and composition studies. Students choosing either area or program must demonstrate basic proficiency in two languages or advanced proficiency in one. Basic proficiency may be demonstrated by passing a departmental examination or by receiving a grade of B or better in a fourth-semester college-level language course. Advanced proficiency is demonstrated by passing a rigorous departmental examination.

The doctoral program in literature is designed to train students to be teachers and scholars in the fields of literature and language. Students in this program will complete nine graduate courses of which four must be seminars. The other courses must be at the 800 or 900 levels and must include the Practicum in Teaching College Composition (ENGL 910), the Seminar in Literary Theory (ENGL 926), and the ungraded 2-credit course in Dissertation and Profession (ENGL 924). In addition, students must pass a general examination in English and American literature, a more specialized qualifying examination, and the final oral defense of their dissertation. The program in composition studies is designed to train experts in the teaching of composition who are also qualified to teach general courses in literature or linguistics. Students in composition studies will complete 10 graduate-level courses of which four must be seminars. The other courses must be at the 800 or 900 levels and include a Practicum in Teaching College Composition (ENGL 910) and Research Methods in Composition (ENGL 918). Students will take a combined general and qualifying examination that focuses both on the theory of composition and rhetoric, and on a secondary area of specialization. Their dissertation work will be on a topic in composition.

Ph.D. students normally hold assistantships and teach under supervision; such teaching is considered a vital part of the student's professional training.

Courses

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGL 800</td>
<td>Studies in Literature</td>
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<tr>
<td>ENGL 803</td>
<td>Advanced Nonfiction Writing</td>
<td>4</td>
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<tr>
<td>ENGL 804</td>
<td>Advanced Nonfiction Writing</td>
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<tr>
<td>ENGL 805</td>
<td>Advanced Poetry Workshop</td>
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<tr>
<td>ENGL 806</td>
<td>Researching the Literature of Fact</td>
<td>4</td>
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<tr>
<td>ENGL 807</td>
<td>Fiction: Form and Technique</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 808</td>
<td>Nonfiction: Form and Technique</td>
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<td>ENGL 809</td>
<td>Poetry: Form and Technique</td>
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<tr>
<td>ENGL 810</td>
<td>Teaching Writing</td>
<td>1 TO 6</td>
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<td>ENGL 811</td>
<td>Editing</td>
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<td>ENGL 812</td>
<td>Writing the Creative Nonfiction Book</td>
<td>4</td>
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<tr>
<td>ENGL 814</td>
<td>Literary Theory</td>
<td>4</td>
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<tr>
<td>ENGL 815</td>
<td>Teaching English as a Second Language: Theory and Methods</td>
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<td>ENGL 816</td>
<td>Curriculum, Materials and Assessment in English as a Second Language</td>
<td>4</td>
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<tr>
<td>ENGL 817</td>
<td>World Languages</td>
<td>4</td>
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<tr>
<td>ENGL 818</td>
<td>English Linguistics and Literature</td>
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<td>ENGL 819</td>
<td>Sociolinguistics Survey</td>
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<td>ENGL 827</td>
<td>Issues in Second Language Writing</td>
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<td>ENGL 829</td>
<td>Spec Top/Composition Studies</td>
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<tr>
<td>ENGL 830</td>
<td>Practicum in Teaching English and the Language Arts</td>
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<td>ENGL 838</td>
<td>Topics in Asian American Studies</td>
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<td>ENGL 840</td>
<td>Indigenous New England</td>
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<td>ENGL 841</td>
<td>Literature of Early America</td>
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<td>ENGL 845</td>
<td>Contemporary American Literature</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 846</td>
<td>Studies in American Drama</td>
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</table>
Environmental Education (ENED)

www.unh.edu/education/index.cfm

Degree Offered: M.A.

The part- or full-time program offers a master of arts degree with a major in environmental education. An innovative and collaborative effort of the Department of Education and the Department of Natural Resources, the program is dedicated to preparing educators who can effectively promote awareness, knowledge, and constructive participation in deliberation over the important environmental questions that we face. The program has flexible requirements and gives students the opportunity to work closely with an adviser to create an individualized course of study that meets their interests, reflects their prior experiences, and focuses on their professional goals. Students apply during the fall or spring terms and begin the program with an intensive four-week Summer Institute. The program also includes a field-based Practicum where students are given the opportunity to implement their educational ideas through a mentoring program at one of a variety of local environmental and educational organizations.

Admission Requirements

Applicants to the M.A. program in environmental education must possess a baccalaureate degree from an approved institution with a GPA of 2.7 or higher and have successfully completed a minimum of five life science or physical science courses at the undergraduate or graduate level. Applicants are required to submit the following materials for consideration: official transcripts from all relevant educational institutions; an essay outlining relevant interests, prior experience, and educational goals; and three letters of recommendation from individuals who possess detailed knowledge of the applicant’s ability to engage in graduate study. Documentation of other experiences or abilities as an educator is also welcome. Admissions decisions are made on a rolling basis by the executive committee of the program. The Graduate Record Exam (GRE) is optional. Promising students who fail to meet one or more of the preceding criteria may be admitted provisionally, with a plan appropriate to their specific needs.

Degree Requirements

A total of 32 credits is required to complete the degree. The program includes:
- Summer Institute (8 credits) Course electives (20 credits) Practicum (4 credits)
- Students will also produce a Program Portfolio.

The M.A. program in environmental education helps prepare educators who are able to integrate and put into practice the three focus areas that constitute the program’s academic core:

1. Environmental Science: understanding the physical and biological processes and relationships that constitute ecosystems.
3. Environmental Values, Policy, and Planning: an understanding of the social (e.g., economic, political, and institutional) and ethical dimensions of environmental policy. The program requires 32 credits for graduation and is organized in three parts:

The Summer Institute (8 credits): Students enter the program by enrolling in an intensive Summer Institute that is coordinated and taught by an interdisciplinary team of UNH faculty. The curriculum involves a case study approach, integrating the three focus areas in an experiential setting. This experience gives students a foundation for creating a rigorous, coherent, and challenging program of study, which they begin (on a part- or full-time basis) during the following year.
Individualized Program of Study (20 credits):
The three focus areas of the program provide the structure within which students include
at least one graduate-level course in each area and integrate the courses. With the guidance of
an adviser, students select a group of courses that balances depth and breadth. All individu-
ized programs of study are approved by the program’s executive committee.

Practicum (4 credits): The field-based Practicum is taken as the final course in the pro-
gram. Students work in an internship site demonstrating their ability to put into prac-
tice a thoughtful and effective vision of environmental education. In the seminar that
accompanies the internship, students create and present a portfolio that reflects what they
have achieved in the program. Completion of the program portfolio marks the fulfillment
of the requirements for the master’s degree.

Courses

| ENED 890 | Environmental Education Summer Institute: Field Ecology, Human Communities, and Curriculum | 8 |
| ENED 900 | Seminar and Practicum in Environmental Education | 4 |

Family Studies (FS)
www.chhs.unh.edu/fs/

Degree Offered: M.S.
The Department of Family Studies offers two programs of study leading to a master of
science degree in Family Studies. The goal of both programs is to provide students with
an understanding of theory and methods relevant to child and family studies and to prepare
them to work with families in therapeutic, educational, and community or corporate settings. The Core Areas of Study program has three foci: Adolescent Development; Child Advocacy and Family Policy; and Child Development. Students may elect a thesis or comprehensive exam. The Marriage and Family Therapy Program is accredited by the American Association for Marriage and Family Therapy and requires a minimum of two years of full-time study, including two summers.

Admission Requirements
Students in good standing with undergradu-
ate degrees in any field and a specific interest in working with individuals and families are encouraged to apply. If a student’s under-
graduate program does not include an intro-
ductive statistics course or the equivalent,
successful completion of such a course is re-
quired before beginning graduate work. Stu-
dents seeking admission must submit recent
scores from the Graduate Record Examination general test unless a waiver has been ap-
proved by the department. Applicants must
have a minimum combined score of 1100 on the Verbal and Quantitative sections of the
GRE and a 4.1 on the Writing section. Ad-
tional admissions information and personal
interviews may be required of applicants.

The Family Studies Graduate Program will
consider requests to waive the admissions
requirement for recent GRE scores under the following circumstances:
When a candidate has already earned a
graduate degree in an accredited program and performed well in that program. When a
candidate has demonstrated proficiency in at
least 2-3 relevant graduate-level courses from
an accredited program and/or institution.
The Family Studies Graduate Program will
not consider requests to waive the admis-
sions requirement for candidates who have a
learning disability because the organization
that administers GRE: testing, Educational
Testing Services, provides accommodations
for test-takers with documented disabilities.

Core Areas of Study
Adolescent Development: This core area of
study is designed to develop general compe-
tence in understanding and applying theory and research regarding adolescents within
the context of their families and communi-
ties. Students are expected to participate in
projects involving adolescents and their fami-
lies and to complete a practicum in a program that serves adolescents.

Child Advocacy and Family Policy: This core area of study is designed to develop general compe-
tence in understanding theory and research regarding advocacy and policy is-
ues impacting children and families. Those
accepted into the program for this core area of
study are expected to work with selected
state, national, and international agencies
as child advocacy interns, develop expertise on
at least one advocacy issue, and conduct
research on an advocacy related topic.

Child Development: This core area of study is designed to develop an understanding of
children from infancy through the early
school years, preparing students to work in
a variety of social science positions focused
on children’s family and school experiences.
Students are expected to complete a practi-
cum in a child-focused setting.

Marriage and Family Therapy Program
The Marriage and Family Therapy Pro-
gram specifically prepares students to work
in mental health, family service, medical, and
human service settings. The emphasis is on
structural, strategic, and systemic approach-
es to marriage and family therapy. Clinical
training is provided under the direction of
an approved supervisor of the American As-
sociation for Marriage and Family Therapy
in the department’s Marriage and Family
Therapy Clinic. The clinical training em-
phasizes treating the individual, couple, and
family in relationship to the larger systems
that influence them. Supervised practica con-
tinue throughout the program. The program
is fully accredited by the Commission on Ac-
creditation for Marriage and Family Therapy
Education (AAMFT) and meets the academ-
ic requirements for clinical membership in
the American Association for Marriage and
Family Therapy. AAMFT standards require
five hundred (500) hours of clinical practice
during the program. Additional hours of
clinical practice under supervision will be
required to meet AAMFT standards for
clinical membership after graduation. See
www.aamft.org for information on clinical
membership.

M.S. Degree Requirements - Core Areas of Study
Program requirements for the Core Areas of Study include:
1) completion of the 12-credit core curricu-
lum that includes FS 991, Professional Issues
for Family Specialists; FS 993, Theoretical
Approaches to Family Studies; and FS 994,
Research Seminar;
2) twenty-two (22) hours of coursework in-
cluding four (4) semester hours of practicum
or internship (FS 807 or FS 911C), and a
graduate-level statistics course; and
3) successful completion of a research thesis
(6-10 credits in FS 899) OR a comprehensive
written examination, plus eight credits of ap-
proved electives in place of FS 899. Students
in the Child Advocacy and Family Policy core
area of study must complete an additional
four (4) hours of practicum/internship, for a
total of eight (8) hours.

Thesis Option: Students electing to complete a research thesis must write and defend a the-
esis based on original research. Students must
earn a minimum of six (6) credits of FS 899
(Master’s Thesis).
Comprehensive Examination: Students electing to complete a comprehensive examination must take an additional eight (8) credits of approved electives in place of thesis credits. The comprehensive examination consists of a timed, three-hour closed-book portion and a one-week take-home exam.

M.S. Degree Requirements-Option in Marriage and Family Therapy

Program requirements include:

1) the 12-credit core curriculum (FS 991, Professional Issues for Family Specialists; FS 993, Theoretical Approaches to Family Studies; and FS 994, Research Seminar);

2) thirty-two (32) semester hours of coursework, including FS 841, Marital and Family Therapy; FS 930, Child Development in Context; FS 942, Advanced Systems of Marital and Family Therapy; FS 945, Family Therapy Practice I; FS 946, Critical Problems in Family Life; FS 947, Family Therapy Practice II; FS 952, Couples Therapy; and FS 954, Sex Therapy

3) successful completion of at least twenty (20) credits of FS 898, Marriage and Family Therapy Practicum (500 hours of supervised clinical practice)

4) completion and presentation of an integrative paper and video representing the student’s theory of change.

A graduate student who fails a course must immediately attend a mandatory meeting with the instructor of the course, the family studies coordinator, and, if desired, the student’s adviser. If a graduate student received grades below “B-” in two or more courses, the family studies graduate coordinator will make a recommendation to the Graduate School that the student be dismissed from the Family Studies graduate program.

Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FS 807</td>
<td>Practicum</td>
<td>1 TO 6</td>
</tr>
<tr>
<td>FS 808</td>
<td>Child and Family Center Internship</td>
<td>1 TO 6</td>
</tr>
<tr>
<td>FS 809</td>
<td>Child Study and Development Center Internship</td>
<td>1 TO 6</td>
</tr>
<tr>
<td>FS 833</td>
<td>Supervising Programs for Young Children</td>
<td>4</td>
</tr>
<tr>
<td>FS 834</td>
<td>Curriculum for Young Children</td>
<td>4</td>
</tr>
<tr>
<td>FS 841</td>
<td>Marital and Family Therapy</td>
<td>4</td>
</tr>
<tr>
<td>FS 843</td>
<td>Families, Schools, and Community</td>
<td>4</td>
</tr>
<tr>
<td>FS 846</td>
<td>Human Sexuality</td>
<td>4</td>
</tr>
<tr>
<td>FS 850</td>
<td>Contemporary Issues in Adolescent Development</td>
<td>4</td>
</tr>
<tr>
<td>FS 857</td>
<td>Race, Class, Gender, and Families</td>
<td>4</td>
</tr>
<tr>
<td>FS 860</td>
<td>Family Programs and Policies</td>
<td>4</td>
</tr>
<tr>
<td>FS 871</td>
<td>Observation and Assessment of Young Children</td>
<td>4</td>
</tr>
<tr>
<td>FS 872</td>
<td>International Approaches to Child Advocacy</td>
<td>4</td>
</tr>
<tr>
<td>FS 873</td>
<td>International Perspectives on Children and Families</td>
<td>4</td>
</tr>
<tr>
<td>FS 876</td>
<td>Children, Adolescents and the Law</td>
<td>4</td>
</tr>
<tr>
<td>FS 894</td>
<td>Families and the Law</td>
<td>4</td>
</tr>
<tr>
<td>FS 897</td>
<td>Special Topics</td>
<td>1 TO 4</td>
</tr>
<tr>
<td>FS 898</td>
<td>Marriage and Family Therapy Practicum</td>
<td>1 TO 8</td>
</tr>
<tr>
<td>FS 899</td>
<td>Master’s Thesis</td>
<td>1 TO 6</td>
</tr>
<tr>
<td>FS 911</td>
<td>Graduate Internship</td>
<td>2 TO 8</td>
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<tr>
<td>FS 930</td>
<td>Child Development in Context</td>
<td>4</td>
</tr>
<tr>
<td>FS 942</td>
<td>Advanced Systems of Marital and Family Therapy</td>
<td>4</td>
</tr>
<tr>
<td>FS 945</td>
<td>Family Therapy Practice I</td>
<td>4</td>
</tr>
<tr>
<td>FS 946</td>
<td>Critical Problems in Family Life</td>
<td>4</td>
</tr>
<tr>
<td>FS 947</td>
<td>Family Therapy Practice II</td>
<td>4</td>
</tr>
<tr>
<td>FS 952</td>
<td>Clinical Interventions in Couples Therapy</td>
<td>4</td>
</tr>
<tr>
<td>FS 991</td>
<td>Professional Issues for Family Specialists</td>
<td>4</td>
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<tr>
<td>FS 993</td>
<td>Theoretical Approaches to Family Studies</td>
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<tr>
<td>FS 994</td>
<td>Research Seminar</td>
<td>4</td>
</tr>
<tr>
<td>FS 995</td>
<td>Seminar and Special Problems</td>
<td>2 TO 4</td>
</tr>
<tr>
<td>FS 997</td>
<td>Advanced Research Seminar</td>
<td>4</td>
</tr>
</tbody>
</table>

Genetics (GEN)
genetics.unh.edu

Degrees Offered: M.S., Ph.D.

The interdepartmental genetics program offers graduate work leading to the degrees of master of science and doctor of philosophy. Faculty members are housed in the Departments of Molecular, Cellular, and Biomedical Sciences and Biological Sciences. Areas of faculty research expertise include animal science, biochemistry, microbiology, molecular biology, plant biology, biotechnology, genomics, and proteomics.

Admission Requirements

Qualified applicants are admitted with the approval of the genetics faculty. Undergraduate preparation should include mathematics through calculus, chemistry through organic, physics, animal or plant biology courses with laboratories, and at least one course in genetics. Preparation in statistics and computer science are desirable. Applicants with deficiencies in background courses who are admitted to the graduate program may be required to complete necessary coursework without graduate credit. Applicants must submit current scores (within five years) from the general GRE test.

Degree Requirements

M.S. Degree Requirements

The coursework for the master of science degree is formulated with the assistance of the student’s guidance committee. Students admitted to the M.S. program are required to conduct a research project under the guidance of a faculty adviser, write and submit a thesis based on this research, and pass an oral examination covering graduate courses and thesis. Students are required to take a minimum of 30 credits, including at least three genetics courses (minimum of 10 credits), attend seminars, present one seminar per year, and write and defend a thesis.

Ph.D. Degree Requirements

The chairperson of the genetics program, with the concurrence of the student’s thesis adviser, nominates the student’s guidance and doctoral committees, which administer the qualifying and final examinations, respectively. Doctoral students are expected to have a broad exposure to genetics courses, exceeding that required of master’s students. Specific course requirements are developed by the student and the guidance committee. Upon completion of coursework, the student must pass an oral qualifying examination conducted by the guidance committee in order to advance to candidacy. Doctoral students must complete a dissertation on original research in genetics and orally defend their dissertation before the doctoral committee.

Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEN 804</td>
<td>Genetics of Prokaryotic Microbes</td>
<td>0 OR 5</td>
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<tr>
<td>GEN 805</td>
<td>Population Genetics</td>
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</tr>
<tr>
<td>GEN 806</td>
<td>Human Genetics</td>
<td>3</td>
</tr>
<tr>
<td>GEN 811</td>
<td>Genomics and Bioinformatics</td>
<td>4</td>
</tr>
<tr>
<td>GEN 812</td>
<td>Introduction to Perl Programming for Bioinformatics</td>
<td>4</td>
</tr>
<tr>
<td>GEN 813</td>
<td>Microbial Ecology and Evolution</td>
<td>4</td>
</tr>
<tr>
<td>GEN 815</td>
<td>Molecular Evolution</td>
<td>4</td>
</tr>
<tr>
<td>GEN 823</td>
<td>Quantitative Genetics</td>
<td>4</td>
</tr>
<tr>
<td>GEN 853</td>
<td>Cytogenetics</td>
<td>4</td>
</tr>
<tr>
<td>GEN 854</td>
<td>Laboratory in Biochemistry and Molecular Biology of Nucleic Acids</td>
<td>5</td>
</tr>
<tr>
<td>GEN 866</td>
<td>Environmental Genomics</td>
<td>4</td>
</tr>
<tr>
<td>GEN 871</td>
<td>Molecular Genetics</td>
<td>4</td>
</tr>
<tr>
<td>GEN 872</td>
<td>Evolutionary Genetics of Plants</td>
<td>4</td>
</tr>
<tr>
<td>GEN 874</td>
<td>Plant Biotechnology and Genetic Engineering 3</td>
<td>4</td>
</tr>
<tr>
<td>GEN 875</td>
<td>Plant Biotechnology and Genetic Engineering Lab</td>
<td>2</td>
</tr>
<tr>
<td>GEN 895</td>
<td>Special Topics</td>
<td>2 TO 4</td>
</tr>
<tr>
<td>GEN 899</td>
<td>Master’s Thesis</td>
<td>1 TO 10</td>
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<tr>
<td>GEN 995</td>
<td>Special Topics</td>
<td>2 TO 4</td>
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<tr>
<td>GEN 996</td>
<td>Special Topics</td>
<td>2 TO 4</td>
</tr>
<tr>
<td>GEN 999</td>
<td>Doctoral Research</td>
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<tr>
<td>MCBS 997</td>
<td>Seminar</td>
<td>1</td>
</tr>
</tbody>
</table>
Degrees Offered: M.A., Ph.D.
The Department of History offers the master of arts and doctor of philosophy degrees. The master of arts is offered in many fields. A formal option in museum studies is available. Doctoral dissertations may be written on the history of the United States or on topics comparing the United States with other societies or areas.

Admission Requirements
The department usually requires evidence of substantial preparation in history at the undergraduate level, together with some preparation in other areas of humanities and social sciences.

Applicants for admission to any graduate program in history should have a minimum of a B average in history, allied humanities, and social sciences. In addition, applicants must submit current scores (within five years) from the general test of the GRE. The department assesses the student’s entire application, including letters of recommendation, in making its decision on admission. Deficiencies in an undergraduate program may be rectified by coursework as a special student, but such coursework cannot be used to satisfy requirements for an advanced degree. The department also recommends that a beginning graduate student have some training in a foreign language. Students in seminar or reading courses in other than American history may be required to have a reading knowledge of at least one foreign language appropriate to the particular course. Applicants should include with their applications a personal statement indicating their reason for undertaking graduate study at the University of New Hampshire. Normally, an entering student intending to be a candidate for the doctorate will complete an M.A. program as a prerequisite. However, students with the M.A. from another institution, or with exceptionally strong preparation at the undergraduate level, can begin the doctoral program immediately. In addition, a student in residence can, with the consent of the department, omit the M.A. and proceed directly toward the Ph.D.

Degree Requirements

M.A. Degree Requirements
A master’s student designs a specific program to meet one of three plans. Plan A allows substantial training and research in a single subfield of history but within a foundation of broader coursework. Plan B allows substantial breadth over at least two subfields. The subfields in history include the following: the ancient world, early medieval Europe, early modern Europe, modern Europe, European intellectual history, medieval England, early modern England, modern England, early modern France, modern France, early modern Germany, modern Germany, Iberia, Russia, early U.S., modern U.S., colonial Latin America, modern Latin America, the Far East, the Near East, sub-Saharan Africa, and the history of science. Plan C allows students who enter the doctoral program without an M.A. to pursue the M.A. and Ph.D. degrees simultaneously.

Plan A requires at least eight courses in history numbered 800 or above, including at least one research seminar, and a thesis in a single subfield (equivalent to two courses).

Plan B requires at least 10 courses in history numbered 800 or above, including at least one research seminar, and an oral examination demonstrating competence in two subfields of history.

Plan C requires at least 30 credits of coursework during preparation for the Ph.D. qualifying examinations, as described below; submission of a seminar or other research paper as a demonstration of competence in basic research techniques; and passing Ph.D. qualifying examinations.

Museum Studies Option
Students who are seeking or considering careers in the museum world, rather than in teaching and/or research, may pursue the option in museum studies. Students basically follow Plan B. Of the 10 required courses, students must take History 871, Museum Studies; History 872, Studies in Regional Material Culture; one research seminar; and two internships (taken for credit) in nearby museums or other historical institutions. The final requirement is either a one-hour oral exam or the completion of a major project related to the student’s work in museum studies.

Ph.D. Degree Requirements
A doctoral student’s program, which must be approved by the graduate committee of the department, shall include each of the following requirements: two research seminars, one in early U.S. history and one in modern U.S. history; two reading seminars, one in early U.S. history and one in modern U.S. history; a course in historical methods; correction of any deficiencies in the student’s previous program; proficiency in one foreign language; History 970, Graduate Seminar in Teaching History (applies to all doctoral candidates awarded teaching assistantships); preparation through reading and coursework in the entirety of U.S. history, with accent upon either early or modern U.S.; preparation through reading and coursework of two subfields outside of U.S. history, one of which may be a cognate field outside of history entirely; qualifying exams; and dissertation and successful defense.

Note: in the definition of fields above, United States and U.S. are understood to mean the United States and its colonial antecedents.

Apprenticeship
The department considers that graduate work in history, and particularly doctoral work, is professional training. The department recognizes the dual concerns of the historian’s life: teaching and research. When feasible, all doctoral students are expected to undertake teaching in the department during a part of their residence. Participation in proseminar and in teaching constitutes an apprenticeship in conjunction with formal study. Doctoral students may choose to pursue the Cognate in College Teaching offered through the Graduate School. All graduate students are reviewed annually by the faculty of the department. A student accumulating two course failures is automatically barred from continuing in any degree program in history, but the department reserves the right to exclude others whose overall performance does not give reasonable assurance of a successful program completion. Students are allowed no more than three attempts to meet any language requirement.

Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 800</td>
<td>Advanced Explorations</td>
<td>1 TO 4</td>
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<tr>
<td>HIST 801</td>
<td>Seminar in Historical Explorations</td>
<td>4</td>
</tr>
<tr>
<td>HIST 802</td>
<td>Holocaust: The War on Europe’s Jews</td>
<td>4</td>
</tr>
<tr>
<td>HIST 803</td>
<td>European Conquest of North America</td>
<td>4</td>
</tr>
<tr>
<td>HIST 805</td>
<td>Revolutionary America, 1750-1788</td>
<td>4</td>
</tr>
<tr>
<td>HIST 806</td>
<td>History of the Early Republic</td>
<td>4</td>
</tr>
<tr>
<td>HIST 809</td>
<td>United States Legal History Special Topics</td>
<td>4</td>
</tr>
<tr>
<td>HIST 811</td>
<td>Civil War Era</td>
<td>4</td>
</tr>
</tbody>
</table>
Justice Studies (JUST)

www.unh.edu/justice-studies/

Degree Offered: M.A.

The goal of the master of arts degree program in justice studies is to produce graduates who have a high level of knowledge about law and justice in American society and worldwide.

Upon completion, graduates will be able to enhance their careers in the justice system, enter new careers in the justice system, or continue their graduate training in law, social sciences, or humanities.

The program addresses issues of justice that are not necessarily criminal in nature. It will familiarize students with legal and justice ideas, legal institutions, and the legal process. It will provide tools for a reasoned appraisal of how the law works and of the policies that underlie it. The courses address a wide variety of subjects, including philosophy of law, American legal history, psychological aspects of the law, social control, criminology, juvenile delinquency, law and literature, and family law. Courses are taught by faculty with backgrounds in both the social sciences and humanities.

Special Note on Tuition:
The Justice Studies Masters program also has a different pricing structure. You can find the most current pricing for this program under the business services website (follow the Justice Studies-MA link).

Admission Requirements

In addition to meeting the general Graduate School requirements, applicants must submit current scores (within five years) from the general test of the GRE or the LSAT.

Degree Requirements

The master of arts in justice studies requires that students complete a minimum of nine courses (36 credit hours) in Justice Studies from the following list:

Required courses:
JUST 830  Theories of Justice
JUST 901  Proseminar
JUST 905  Quantitative Research Methods
JUST 907  Applied Research Methods

One of the three listed below:
SOC 815  Criminological Theory
SOC 880  Social Conflict
SOC 921  Crime and Conflict

Concluding Experience:

JUST 897  culminating Project (4 credits), and
JUST 950/951 Internship (4 credits), or
JUST 899  Masters Thesis (8 credits)

Electives:
Choose 2 courses if taking JUST 897 or 2 courses plus JUST 950/951 if taking JUST 897 from the following list (no more than 1 from any Department other than Justice Studies):
EDUC 867  Students, Teachers, and the Law
EDUC 897  Higher Education and the Law
EDUC 951  Laws and Regulations Affecting the Education of Students with Disabilities
EDUC 967  School Law
EDUC 968  Collective Bargaining in Public Education
FS 872  International Approach to Child Advocacy
FS 897  Children, Adolescents, and the Law
FS 894  Families and the Law
HMP 940  Legal Strategies in Health Care
HIST 809  United States Legal History Special Topics
HIST 949  Colloquium in United States History
JUST 867  Students, Teachers, and the Law
JUST 950  Internship
JUST 951  Research Internship
JUST 965  Special Topics
JUST 995  Reading and Research
POLT 801  Courts and Public Policy
POLT 803  Urban and Metropolitan Politics
PSYC 954  Advanced Seminar in Social Psychology
SW 979  Social Work and the Law
SOC 815  Criminological Theory
SOC 820  Sociology of Drug Use
SOC 876  Family Violence Research Seminar
SOC 880  Social Conflict
SOC 921  Crime and Conflict
SOC 976  Violence in the Family
**Kinesiology (KIN)**

www.unh.edu/kinesiology/

**Degree Offered: M.S.**

The Department of Kinesiology offers a master of science degree with the following areas of concentration: exercise science, outdoor education, and sport studies. In addition, the Departments of Kinesiology and Social Work offer a dual degree program, which consists of a master in science in kinesiology with a concentration in outdoor education, as well as a master in social work (M.S.W.).

**Admission Requirements**

Admission is based on undergraduate preparation, academic record, Graduate Record Examination general test scores (current scores, within the last five years), and letters of recommendation. Applicants must show adequate preparation in the basic support courses of the selected concentration area. Applicants who have not met specific course prerequisites should expect to take additional undergraduate work without receiving graduate credit.

Students applying for the dual degree program must meet both the admission requirements for kinesiology and for social work. See social work for their admission requirements.

**Degree Requirements**

Students may follow either the thesis or the nonthesis plan. All degree candidates will be required to take KIN 900, Applied Statistics (or equivalent); KIN 901, Analysis of Professional Literature; the designated concentration core; and electives as required.

Exercise science core: KIN 804, Electrocardiography; KIN 805, Topics in Applied Physiology; KIN 824, Metabolic Adaptations to Exercise; KIN 836, Fitness and Graded Exercise Test and Prescription; and two semesters of KIN 902, Colloquium.

Sport studies core: KIN 880, Psychological Factors in Sport; one adviser-approved KIN elective at the 800 or 900 levels; and KIN 840, Athletic Administration or KIN 843, Sport Marketing.

Outdoor education core:

KIN OE Concentration

Required Courses: Graduate

EDUC 881 Statistics 4 cr.
KIN 883 Psychological Aspects of Adventure Education 4 cr.
KIN 884 Foundations of Adventure Education 4 cr.
KIN 885 Program Models and Evaluation in Outdoor Education 4 cr.
KIN 886 Organization & Administration of Outdoor Education Prgs. 4 cr.
KIN 887 Theory of Adventure Education 4 cr.
KIN 901 Analysis of Professional Literature 4 cr.

Required for OE/SW dual degree:

KIN 882 Therapeutic Applications of Adventure Programming 4 cr.

Any remaining coursework in each concentration should be taken within the Department of Kinesiology; however, approval may be granted to take relevant courses outside the department.

Thesis plan: A minimum of 30 approved graduate credits including a thesis (24 graduate course credits plus 6 thesis credits), as well as an oral defense of the thesis, are required in the thesis plan.

Nonthesis plan: A minimum of eight approved graduate courses (with a minimum of 30 credits) are required in the nonthesis plan. Four credits of KIN 895, Advanced Studies, are required. A student may take KIN 895 only after completing at least three approved graduate courses including KIN 901. Exercise science students who elect this plan must take 6 credits of KIN 896, Advanced Research in Exercise Science. In addition, exercise science students must orally defend their research.

Dual degree students take classes simultaneously over the course of three years in both kinesiology: outdoor education and social work and complete a minimum of 77 credits for graduation. This includes two internships, one during their first year of study and a second specialized internship during the third year, which concentrates on the utilization and application of adventure therapy in an agency setting.

**Courses**

KIN 804 Electrocardiography 4
KIN 805 Topics in Applied Physiology 4
KIN 806 Neurology 4
KIN 807 Neurology Lab 2
KIN 824 Metabolic Adaptations to Exercise 4
KIN 900 Applied Statistics 4
KIN 905 Master’s Thesis 1 TO 6
KIN 906 Advanced Studies 2 TO 4
KIN 907 Analysis of Professional Literature 4
KIN 908 Advanced Research in Exercise Science 6
KIN 909 Colloquium 1 TO 2
KIN 910 Curricular Issues in Health Pedagogy 4
KIN 950 Internship 2 TO 4
KIN 951 Special Topics 2 TO 4
KIN 986 Organization and Administration of Outdoor Education Programs 4
KIN 987 Theory of Adventure Education 4
KIN 988 Advanced Studies 2 TO 4
KIN 989 Advanced Research in Exercise Science 6
KIN 990 Special Topics 1 TO 4
KIN 991 Master’s Thesis 1 TO 6
KIN 992 Applied Statistics 4
KIN 993 Analysis of Professional Literature 4
KIN 994 Colloquium 1 TO 2
KIN 996 Advanced Research in Exercise Science 6
KIN 997 Colloquium 1 TO 2
KIN 998 Special Topics 2 TO 4
KIN 999 Colloquium 1 TO 2

**Liberal Studies (LS)**

www.unh.edu/liberal-arts/

**Degree Offered: M.A.L.S.**

The program offers a master of arts in liberal studies (M.A.L.S.) degree. The master of arts in liberal studies is an innovative, interdisciplinary graduate program. Housed within the College of Liberal Arts but drawing its courses and instructors from across the University, the program makes available a diverse spectrum of offerings and a wealth of faculty expertise and resources.

The liberal studies curriculum is intended to promote broad intellectual comprehension and enrichment rather than vocational or professional training within a single field or discipline. Designed to address the particular interests of students who seek to deepen their knowledge, the program offers a challenging but flexible program of cross-disciplinary learning.

**Admission Requirements**

Admission to the master of arts in liberal studies is selective. A bachelor’s degree is required for admission. Students will be asked to provide relevant transcripts of their educational experience, a resume, and letters of recommendation. They will also be asked to submit a brief essay describing why they
are particularly interested in this program and indicating the sort of interdisciplinary focus or area of learning in which they might like to concentrate their study. The Graduate Record Exam (GRE) is not required but is helpful.

**Degree Requirements**

The program consists of seven courses (30 credits) divided into three parts: a core seminar specifically designed for and required of every student, to be taken within one year of entrance to the program; a concentration made up of five elective courses chosen from various disciplines across the liberal arts that centers on an interdisciplinary theme or topic; and a master’s thesis or project, which is intended to act as an integrating capstone experience for liberal studies students.

Core seminar LS 800 (4 credits): Each liberal studies student is required to take one core seminar as an introduction to the program as a whole. The seminar must be taken within the first year of a student’s matriculation in the program, preferably in the first semester. Although all core seminars focus on interdisciplinary issues and themes, each is meant to introduce students to different topics and divergent disciplines from across the liberal arts such as literature, the arts, philosophy, history, women’s studies, political science, and sociology.

Concentration (20 credits): Students will work with the director of the program and a concentration and thesis adviser to develop an interdisciplinary concentration program of study, which focuses on a significant topic, issue, perspective, or cultural development, and is made up of five elective courses offered in various departments throughout the college and University. A concentration should constitute a sustained thematic exploration and may be selected from a menu of suggested concentrations or may be self-designed by each student with the help of his or her adviser. The five courses are to be selected from 700-900-level courses regularly offered within departments and colleges across the University, including up to three independent study courses carried out as a tutorial with particular faculty members (with permission). It is expected that a student’s concentration will culminate in a concluding final project or thesis.

The following are typical examples of cross-disciplinary concentration programs of study: American studies, the humanities, ecology and values, justice studies, labor studies, religious studies, urban studies, and women’s studies.

LS 898 Project or LS 899 Thesis (6 credits): With the support of their concentration and thesis adviser, students prepare a final project consistent with their concentration and interests. A capstone experience, the project can be a scholarly thesis or equivalent creative endeavor, which integrates the student’s learning in a particular concentration. The director of the program will meet periodically with those students enrolled for thesis credit in order to provide a forum for discussing their research and writing.

### Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LS 800</td>
<td>Core Seminar</td>
<td>4</td>
</tr>
<tr>
<td>LS 845</td>
<td>Special Topics</td>
<td>2-4</td>
</tr>
<tr>
<td>LS 846</td>
<td>Special Topics</td>
<td>2-4</td>
</tr>
<tr>
<td>LS 895</td>
<td>Independent Study</td>
<td>1-2</td>
</tr>
<tr>
<td>LS 896</td>
<td>Independent Study</td>
<td>1-2</td>
</tr>
<tr>
<td>LS 898</td>
<td>Master’s Project</td>
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</tr>
<tr>
<td>LS 899</td>
<td>Master’s Thesis</td>
<td>10-16</td>
</tr>
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</table>

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**Management of Technology (MOT)**

[www.wsbe.unh.edu/graduate-programs](http://www.wsbe.unh.edu/graduate-programs)

**Degree Offered: M.O.T.**


Please contact the department for details.

**Admission Requirements**

Admission is limited to employees of BAE Systems. All applicants must have a minimum of a bachelor’s degree from an accredited college or university and meet the admissions standards of the Graduate School. It is understood that some applicants will have advanced degrees in engineering or science fields. Normally a candidate will have significant work experience and be nominated by the company. Applicants are required to submit current GMAT scores.

Please contact the department for details.

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**Degree Requirements**

Please contact the department for details.

**Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOT 898</td>
<td>Advanced Topics</td>
<td>3</td>
</tr>
<tr>
<td>MOT 931</td>
<td>Accounting and Finance for Technical Managers</td>
<td>3</td>
</tr>
<tr>
<td>MOT 934</td>
<td>Management of Technology</td>
<td>3</td>
</tr>
<tr>
<td>MOT 935</td>
<td>Quantitative Methods</td>
<td>3</td>
</tr>
<tr>
<td>MOT 936</td>
<td>Leadership and Team Management</td>
<td>3</td>
</tr>
<tr>
<td>MOT 939</td>
<td>Information Systems/Management of Enterprise Systems</td>
<td>3</td>
</tr>
<tr>
<td>MOT 941</td>
<td>Product Development and Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MOT 942</td>
<td>Project Management</td>
<td>3</td>
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<td>MOT 945</td>
<td>Supply Chain Management and Procurement</td>
<td>3</td>
</tr>
<tr>
<td>MOT 946</td>
<td>Strategic Management of Technology</td>
<td>3</td>
</tr>
<tr>
<td>MOT 947</td>
<td>Intellectual Property Management, Ethics and Emerging Technology</td>
<td>3</td>
</tr>
<tr>
<td>MOT 948</td>
<td>Business Planning and Program Management</td>
<td>3</td>
</tr>
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</table>

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**Materials Science (MS)**

[www.unh.edu/materials-science/](http://www.unh.edu/materials-science/)

**Degrees Offered: M.S., Ph.D.**

The materials science program offers the master of science and doctor of philosophy degrees in materials science engineering. The program offers research opportunities over a broad range of areas including synthesis and characterization of thin films, fullerenes and nanotubes, molecular templates, self-organizing nanostructures, polymers and polymer nanoparticles, using scanning probe microscopy, physical and chemical vapor deposition methods, micro-mechanics, molecular beam mass spectrometry, and computational methods.

**Admission Requirements**

Admission to the master of science and doctor of philosophy degrees is based upon a strong undergraduate record. A minimum G.P.A. of 3.0 is required, but undergraduate students with exceptional experience or other mitigating factors will be considered. Except under special circumstances, applicants must submit current scores (within five years) from the general test of the GRE. Since materials science is an interdisciplinary field, students from mechanical engineering, chemical engineering, electrical engineering, chemistry, mathematics, physics and other engineering- and science-related disciplines will be considered. A suitable undergraduate program should contain: multivariable calculus and differential equations, two semesters of university (calculus-based) physics, one semester of thermodynamics or physical chemistry, one semester...
of computer programming, one semester each of fluid mechanics and heat transfer or two semesters of solid mechanics, and one semester of materials science. Members of the faculty are available to evaluate each student’s undergraduate curriculum. A series of appropriate courses will be required for those students with deficiencies in their undergraduate program.

Degree Requirements

M.S. Degree Requirements

A student will meet the Graduate School’s requirements for the master’s degree (30 credits). There is a thesis option and a project option. In both options, the student is required to take MS 860, Thermodynamics and Kinetics of Materials I; MS 961, Thermodynamics and Kinetics of Materials II; one course each satisfying the areas of synthesis and processing, characterization, and structure-property relationships, and two semesters of MS 900, Materials Science Seminar. For the thesis option, the student will take one additional course (24 course credits) and 6 credits of MS 899, Master’s Thesis. For the project option, the student will take two additional courses (27 course credits) and 3 credits of MS 898, Master’s Project. All students are expected to take at least 6 course credits at the 900 level.

Ph.D. Option Requirements

Students must complete 39 postbaccalaureate course credits. The student is expected to take MS 860, Thermodynamics and Kinetics of Materials I; MS 961, Thermodynamics and Kinetics of Materials II; one course each satisfying the areas of synthesis and processing, characterization, and structure-property relationships, and two semesters of MS 900, Materials Science Seminar. In addition, the student must take five additional courses with at least 12 total credits at the 900 level (including those courses taken at the master’s level).

The student will be advanced to candidacy after he or she has completed an M.S. degree or 24 credits of graduate courses with at least 6 credits at the 900 level and the qualifying examination. The qualifying exam shall consist of two parts. The student must present a written proposal adhering to NSF guidelines, followed by an oral defense of that proposal. In addition, the student must submit a substantive review paper and an oral presentation on that paper. A materials science program faculty committee will determine the subject of the paper. A substantive record of publication in conjunction with an oral presentation at a conference may substitute for the review paper. A materials science program faculty committee will decide whether the previous publication record is substantive. The committee will evaluate the paper, the proposal, and the two oral presentations to determine whether the student is suitably prepared for graduate research at the Ph.D. level. The proposal and paper for the qualifying exam shall normally be completed within six months of completing 24 credits of coursework.

Upon the successful completion of the qualifying examination, the student is advanced to candidacy and, upon the recommendation of the graduate coordinator, a doctoral committee is appointed by the dean of the Graduate School. The doctoral committee conducts an annual review of the student’s progress, supervises and approves the doctoral dissertation, and administers the final dissertation defense.

Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS 830</td>
<td>Mechanical Behavior Materials</td>
<td>4</td>
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<tr>
<td>MS 831</td>
<td>Fracture and Fatigue Engineering Materials</td>
<td>4</td>
</tr>
<tr>
<td>MS 844</td>
<td>Corrosion</td>
<td>4</td>
</tr>
<tr>
<td>MS 860</td>
<td>Thermodynamics and Kinetics of Materials I</td>
<td>3</td>
</tr>
<tr>
<td>MS 861</td>
<td>Diffraction and Imaging Methods in Materials</td>
<td>3 OR 4</td>
</tr>
<tr>
<td>MS 862</td>
<td>Electronic Materials Science</td>
<td>4</td>
</tr>
<tr>
<td>MS 863</td>
<td>Thin Film Science and Technology</td>
<td>4</td>
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<td>MS 895</td>
<td>Special Topics</td>
<td>2 TO 4</td>
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<td>MS 898</td>
<td>Master’s Project</td>
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<td>MS 899</td>
<td>Master’s Thesis</td>
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<td>MS 900</td>
<td>Seminar</td>
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<td>MS 905</td>
<td>Macromolecular Synthesis</td>
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<td>MS 910</td>
<td>Macromolecular Characterization</td>
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<td>MS 915</td>
<td>Processing and Properties of Polymer Fluids and Solids</td>
<td>3</td>
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<tr>
<td>MS 960</td>
<td>Thermodynamics and Kinetics of Materials II</td>
<td>3</td>
</tr>
<tr>
<td>MS 965</td>
<td>Advanced Surface and Thin Film Characterization</td>
<td>4</td>
</tr>
<tr>
<td>MS 995</td>
<td>Graduate Special Topics</td>
<td>2 TO 4</td>
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<tr>
<td>MS 999</td>
<td>Doctoral Research</td>
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</table>

Mathematics and Statistics (MATH)

www.math.unh.edu

Degrees Offered: M.S., M.S.T., Ph.D.

The Department of Mathematics and Statistics offers programs leading to a master of science in mathematics, master of science in mathematics with an option in applied mathematics, master of science in mathematics with an option in statistics, a doctor of philosophy in mathematics, and a doctor of philosophy in mathematics education.

In general, the master’s degree programs offer the student a high level of preparation for professional employment as well as appropriate preparation for programs leading to the Ph.D. The Ph.D. programs prepare the student primarily for a career in university teaching and research.

The graduate programs have limited enrollment, allowing students to work closely with faculty members in their areas of expertise. Research within the department is currently being conducted in many areas of the mathematical sciences, including: operator theory, Hilbert spaces, geometric function theory, complex analysis, Radon transforms, integral geometry, ring theory, computational algebra, homological algebra, quantum groups, tensor categories, combinatorics, topology, algebraic topology, category theory, nonlinear dynamics and chaos, data compression, chaotic prediction and control, spectral analysis, asymptotic analysis, mathematical control theory, environmental statistics, spatial and spatio-temporal statistics, Bayesian and computational statistics, wavelets in statistics, teaching and learning of mathematics, teaching and learning of probability and statistics, mathematics curriculum and teacher education, calculus learning, K-12 mathematics education reform, and mathematics education.

Admission Requirements

Applicants for the M.S. and Ph.D. degrees must have completed significant undergraduate coursework in mathematics, preferably in algebra, analysis, and topology. Applicants for the M.S. with applied mathematics option must have completed significant coursework in analysis or applied analysis. Applicants for the M.S. with statistics option will typically have an undergraduate degree in the mathematical, physical, biological, or social sciences or in engineering; must have completed mathematical coursework at least through multivariate calculus; and must have knowledge of basic statistics and basic linear algebra at the undergraduate level. Applicants for the degree of master of science for teachers must have completed education courses sufficient for certification, or have three years teaching experience, or currently hold a full-time teaching position.
Degree Requirements

M.S. Degree Requirements
This program requires 30 credit hours, consisting of at least 10 semester courses approved by the department and chosen from courses in 801-888 and 931-998, with at least six of the courses in the 931-998 group. A comprehensive master's examination is intended to allow the student maximum latitude in pursuing his or her mathematical interests.

Applied Mathematics Option
This program requires 30 credit hours, consisting of the courses MATH 931-932, two topics in applied mathematics courses (MATH 967/977), 6 credits of Master's Thesis (MATH 899), and four elective courses. The elective courses need not be in mathematics, but must be at the 800 level or higher, and at least one must be a technical course in statistics or some other department. The broad elective flexibility allows the student's application interests to have a substantial role in the content of the program. The student's full program plan must be proposed in writing to the applied mathematics faculty and approved prior to the student's second semester of study. The program includes a thesis, which must constitute original research in applied mathematics, conducted under the supervision of a faculty adviser. There is no comprehensive examination in this option.

Statistics Option
This program requires 30 credit hours, consisting of at least 10 semester courses approved by the department, which includes completion of a project (MATH 898) consisting of a substantial application of statistical methodology to a real problem. Most of the courses will be taken from the department's statistics courses in the range MATH 837-979 and must include all of MATH 839, 840, 855, and 856, unless some of these or equivalent courses were taken prior to enrollment in the program. At most, three of the required 10 courses may also be taken from the department's approved nonstatistics courses (in the range MATH 837-979) and/or approved courses offered in other departments. MATH 898, the Master's Project, is conducted under the supervision of a faculty adviser and concluded with a written report and public oral presentation. MATH 898 may be taken for 3 to 6 credits, depending on the level of substantial research and methodological development required for project completion; the appropriate number of credits is determined by the statistics faculty. A master's committee of at least two statistics faculty members oversees the student's progress and determines credit for the project. There is no comprehensive examination in this option.

M.S.T. Degree Requirements
The program requires 30 credit hours, consisting of at least 10 semester courses approved by the department. These will normally be taken from the courses numbered MATH 901-929 and will usually include the seven courses MATH 903-908 and MATH 925. A concluding experience consisting of a mathematics portfolio and a comprehensive problem set is required. The courses in this program are offered primarily during summer sessions.

Ph.D. Requirements
In each Ph.D. program, requirements 1 to 3 (below) must be completed for advancement to candidacy. Students in the Ph.D. program in mathematics who intend to write a dissertation in statistics must satisfy the alternate basic requirements 1 and 2, which replace basic requirements 1 and 2; all other Ph.D. students must satisfy requirements 1 and 2. The additional requirements 3 to 5 differ slightly for the mathematics and mathematics education Ph.D. programs; these are indicated below.

Basic degree requirements for the Ph.D. program:
1. all of the courses MATH 951, 952, 953, 954, 955;

Alternate basic degree requirements for mathematics Ph.D. students:
1. all of the courses MATH 839, 840, 855, 856, 951, 953, and 954;
2. passing written comprehensive examinations in statistical theory, statistical methods, analysis, and either applied mathematics or functional analysis.

Additional degree requirements for the Ph.D. in mathematics:
3. advanced coursework in a major field (that of the student's intended dissertation work) and a minor field (usually within mathematics, but possibly in another area of the mathematical sciences) followed by qualifying examinations in each;
4. experience in teaching equivalent to at least half-time for one year;
5. a dissertation that includes original results in mathematics.

Additional degree requirements for the Ph.D. in mathematics education:
3. advanced coursework in the major field (mathematics education), including MATH 958, 968A, and 968B, and in a minor field (usually a related one, such as educational psychology or research methodology, but possibly in mathematics) followed by qualifying examinations in each;
4. experience in teaching equivalent to at least half-time for one year; and
5. a dissertation that includes original results in mathematics education.

Courses
Courses numbered MATH 901-929 may be applied to the master of science for teachers in mathematics and to no other degree in mathematics.

Courses MATH 931-958 are introductory courses for the M.S. degree in mathematics and the Ph.D. degrees in mathematics and mathematics education.

Courses numbered MATH 961-979 are more specialized topics courses offered periodically in response to faculty and student interests. Their content may vary from year to year. With the permission of the instructor, these courses may be taken more than once.

A majority of the courses required for the M.S. degree in mathematics with option in statistics are now offered in synchronous mode (live) over the Internet.

Interdisciplinary Opportunities
The College of Engineering and Physical Sciences is developing and Integrated Applied Mathematics Program (IAM). Students interested in applied and interdisciplinary
work are encouraged to inquire about IAM within the college.

**Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
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<tr>
<td>MATH 985</td>
<td>Statistical Methods for Research</td>
<td>3</td>
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<tr>
<td>MATH 986</td>
<td>Advanced Statistical Methods for Research</td>
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<tr>
<td>MATH 987</td>
<td>Statistical Methods For Quality Improvement</td>
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<td>MATH 988</td>
<td>Applied Regression Analysis</td>
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<td>MATH 989</td>
<td>Design of Experiments I</td>
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<td>MATH 990</td>
<td>Survival Analysis</td>
<td>3</td>
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<td>MATH 991</td>
<td>Time Series Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MATH 992</td>
<td>Design of Experiments II</td>
<td>3</td>
</tr>
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<td>MATH 993</td>
<td>Foundations of Applied Mathematics</td>
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<tr>
<td>MATH 994</td>
<td>Foundations of Applied Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 995</td>
<td>Introduction to Nonlinear Dynamics and Chaos</td>
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<td>MATH 996</td>
<td>Introduction to Numerical Methods</td>
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<tr>
<td>MATH 997</td>
<td>Introduction to Scientific Computing</td>
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<td>MATH 998</td>
<td>Probability and Stochastic Processes</td>
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<td>MATH 999</td>
<td>Principles of Statistical Inference</td>
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<td>MATH 991</td>
<td>Abstract Algebra</td>
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<td>Linear Algebra</td>
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<td>MATH 994</td>
<td>One-Dimensional Real Analysis</td>
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<td>MATH 995</td>
<td>Logic</td>
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<td>Topology</td>
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<td>MATH 997</td>
<td>Complex Analysis</td>
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<td>MATH 998</td>
<td>Topics in Mathematics and Statistics</td>
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<td>MATH 999</td>
<td>Master's Project</td>
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<td>MATH 1000</td>
<td>Master's Thesis</td>
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<td>MATH 1001</td>
<td>Higher Algebra for Teachers</td>
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<td>MATH 1002</td>
<td>Higher Algebra for Teachers</td>
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<td>MATH 1007</td>
<td>Probability and Statistics for Teachers</td>
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<td>MATH 1008</td>
<td>Mathematics Education</td>
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<td>MATH 1009</td>
<td>Topology for Teachers</td>
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<td>MATH 1010</td>
<td>Theory of Numbers for Teachers</td>
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<td>MATH 1011</td>
<td>Mathematical Proof and Problem Solving</td>
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<td>MATH 1012</td>
<td>Problem Solving Seminar</td>
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<td>MATH 1013</td>
<td>Selected Topics in Mathematics for Teachers</td>
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<td>MATH 1014</td>
<td>Directed Reading</td>
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<td>MATH 1015</td>
<td>Mathematical Physics</td>
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<td>MATH 1016</td>
<td>Mathematical Physics</td>
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<td>MATH 1017</td>
<td>Bayesian and Computational Statistics</td>
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<tr>
<td>MATH 1018</td>
<td>Beyond ANOVA: Generalized Linear and Semi-parametric Smoothing Methods</td>
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<td>MATH 1019</td>
<td>Spatial Statistics</td>
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<td>MATH 1020</td>
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<td>MATH 1021</td>
<td>Algebra II</td>
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<td>MATH 1023</td>
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<td>MATH 1024</td>
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<td>MATH 1025</td>
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<td>MATH 1026</td>
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<td>MATH 1027</td>
<td>Topics in Algebra I</td>
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<td>MATH 1028</td>
<td>Functional Analysis</td>
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<td>MATH 1029</td>
<td>Topics in Analysis I</td>
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<td>MATH 1030</td>
<td>Topics in General Topology I</td>
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<td>MATH 1031</td>
<td>Topics in Algebraic Topology I</td>
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<td>MATH 1032</td>
<td>Topics in Applied Mathematics I</td>
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<td>MATH 1033</td>
<td>Topics in Mathematics Education I</td>
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<td>MATH 1034</td>
<td>Topics in Probability and Statistics I</td>
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<td>MATH 1035</td>
<td>Topics in Algebra II</td>
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<td>MATH 1036</td>
<td>Topics in Operator Theory</td>
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<td>Topics in Applied Mathematics II</td>
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<td>MATH 1039</td>
<td>Research Topics in Statistics</td>
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<td>MATH 1040</td>
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</tbody>
</table>

**Mechanical Engineering (ME)**

[www.unh.edu/mechanical-engineering](http://www.unh.edu/mechanical-engineering)

**Degrees Offered: M.S., Ph.D.**

The Department of Mechanical Engineering offers a degree program at both the master’s and doctoral levels. The department offers studies leading to specialization in the following areas: fluid mechanics, thermal science, solid mechanics, material science, controls, system modeling, dynamics, and design. The department offers the Ph.D. degree in four distinct subdisciplines: fluid and thermal science, materials science, mechanics, and systems modeling.

**Admission Requirements**

A bachelor of science degree in mechanical engineering is normally required for admission to the graduate program in mechanical engineering. Students from other disciplines may also be admitted to the program. However, in order to be properly prepared for graduate-level coursework, these students must have taken the equivalent of the UNH Mechanical Engineering undergraduate core courses listed below. Students who are deficient in three or fewer courses may be admitted to the department on a provisional basis. Students who are deficient in more than three courses must apply and enroll as an undergraduate student until they meet the core course requirement. It is department policy that engineering courses taken as part of an Engineering Technology program are generally not considered equivalent to any of the courses listed below. The decision on equivalence will satisfy the requirements of either a master's degree or the project plan.

Two 900-level courses of at least 3 credits each must be earned in addition to ME 992, Master's Project; or the 900-level course substituted for the master's project course. No more than two graduate courses taken prior to admission to the Graduate School may be applied to the master's degree. An oral examination covering the candidate's graduate work will be given for both the thesis and project plans.

All full-time graduate students are required to attend a weekly M.E. Graduate Seminar and make one presentation per year.

**Core courses required for admission to the M.S. in Mechanical Engineering degree program:**

- Mathematics and Physics Courses:
  - MATH 425, Calculus I; MATH 426, Calculus II; MATH 527, Differential Equations; MATH 528, Multi-Dimensional Calculus; PHYS 407, General Physics; PHYS 408, General Physics II

**Mechanics Courses:**
- ME 525, Mechanics I; ME 526, Mechanics II; ME 627, Mechanics III; ME 643, Elements of Design

**Thermal Sciences:**
- ME 503, Thermodynamics; ME 608, Fluid Mechanics; ME 603, Heat Transfer

**Other Courses:**
- ME 561, Materials Science; ME 670, Systems Modeling and Controls; EE 537, Circuits and Signals

**Degree Requirements**

**M.S. Degree Requirements**

A candidate for the degree of master of science will satisfy the requirements of either a thesis plan or a project plan. The thesis plan requires 24 semester hours of coursework in addition to eight semester hours of ME 899, Master’s Thesis; the project plan requires 28 semester hours of coursework in addition to four semester hours of ME 992, Master's Project. Individuals who can demonstrate accomplishments from professional engineering experience comparable to that expected from a master's project may petition the department to substitute an additional 900-level course for the project requirement.

**Ph.D. Degree Requirements**

- MATH 967, Topics in Applied Mathematics I | 3
- MATH 968, Topics in Mathematics Education I | 3
- MATH 969, Topics in Probability and Statistics I | 3
- MATH 971, Topics in Algebra II | 3
- MATH 973, Topics in Operator Theory | 3
- MATH 977, Topics in Applied Mathematics II | 3
- MATH 978, Topics in Mathematics Education II | 3
- MATH 979, Research Topics in Statistics | 3
- MATH 998, Reading Courses | 1 TO 6
- MATH 999, Doctoral Research | 0
Ph.D. in Mechanical Engineering
Following admission into the program, a guidance committee is appointed for the student by the dean of the Graduate School upon recommendation of the graduate coordinator. This committee assists in outlining the student’s course of study and may specify individual coursework requirements.

A student entering with a B.S. degree must successfully complete at least twelve 3- or 4-credit courses with three at the 900 level. Students entering with a M.S. degree in engineering are required to take a minimum of five 3- or 4-credit courses with three at the 900 level, although the committee may determine that additional coursework is necessary. The guidance committee also administers the qualifying examination, which is two parts: written and oral. Upon successful completion of required coursework, the qualifiers and a dissertation proposal, the student may advance to candidacy. A doctoral committee may be appointed once candidacy has been attained. The committee will have at least five members.

Each Ph.D. candidate must conduct research of sufficient originality and significance to warrant the awarding of the Ph.D. degree. The final examination (oral defense) is the defense of the student’s dissertation. This will be scheduled in accordance with the Graduate School rules. The candidate will be informed, in writing, by the dissertation chair of the results of the defense.

All full-time graduate students are required to attend a weekly M.E. Graduate Seminar and make one presentation per year.

Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME 807</td>
<td>Analytical Fluid Dynamics</td>
<td>4</td>
</tr>
<tr>
<td>ME 809</td>
<td>Computational Fluid Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>ME 811</td>
<td>Coherent Optical Methods</td>
<td>3</td>
</tr>
<tr>
<td>ME 812</td>
<td>Waves in Fluids</td>
<td>3</td>
</tr>
<tr>
<td>ME 824</td>
<td>Vibrations Theory and Applications</td>
<td>4</td>
</tr>
<tr>
<td>ME 827</td>
<td>Advanced Mechanics of Solids</td>
<td>4</td>
</tr>
<tr>
<td>ME 835</td>
<td>Mechanics of Composite Materials</td>
<td>4</td>
</tr>
<tr>
<td>ME 843</td>
<td>Satellite Systems, Dynamics, and Control</td>
<td>3</td>
</tr>
<tr>
<td>ME 870</td>
<td>Design with Microporistors</td>
<td>4</td>
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<tr>
<td>ME 872</td>
<td>Control Systems</td>
<td>4</td>
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<tr>
<td>ME 873</td>
<td>Electromechanical Analysis and Design</td>
<td>4</td>
</tr>
<tr>
<td>ME 876</td>
<td>Product Design</td>
<td>4</td>
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<tr>
<td>ME 883</td>
<td>Geometric Modeling</td>
<td>4</td>
</tr>
<tr>
<td>ME 885</td>
<td>Solid Mechanics in Manufacturing</td>
<td>4</td>
</tr>
<tr>
<td>ME 886</td>
<td>Introduction to Finite Element Analysis</td>
<td>0 OR 4</td>
</tr>
<tr>
<td>ME 895</td>
<td>Special Topics</td>
<td>2 TO 4</td>
</tr>
<tr>
<td>ME 899</td>
<td>Master’s Thesis</td>
<td>1 TO 8</td>
</tr>
<tr>
<td>ME 904</td>
<td>Radiation Heat Transfer</td>
<td>4</td>
</tr>
<tr>
<td>ME 906</td>
<td>Convection Heat Transfer</td>
<td>4</td>
</tr>
<tr>
<td>ME 909</td>
<td>Viscous Flow</td>
<td>3</td>
</tr>
<tr>
<td>ME 924</td>
<td>Vibrations of Continuous Media</td>
<td>4</td>
</tr>
<tr>
<td>ME 927</td>
<td>Theory of Plasticity</td>
<td>4</td>
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<tr>
<td>ME 935</td>
<td>Micromechanics of Composite and Porous Materials</td>
<td>4</td>
</tr>
<tr>
<td>ME 944</td>
<td>Nonlinear Control Systems</td>
<td>4</td>
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<tr>
<td>ME 951</td>
<td>Advanced Control Systems I</td>
<td>3</td>
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<tr>
<td>ME 952</td>
<td>Advanced Control Systems II</td>
<td>3</td>
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<tr>
<td>ME 955</td>
<td>Estimation and Filtering</td>
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<tr>
<td>ME 986</td>
<td>Advanced Finite Element Analysis</td>
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<tr>
<td>ME 992</td>
<td>Master’s Project</td>
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<tr>
<td>ME 995</td>
<td>Graduate Special Topics</td>
<td>2 TO 4</td>
</tr>
<tr>
<td>ME 999</td>
<td>Doctoral Research</td>
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</tbody>
</table>

Microbiology (MICR)

microbiology.unh.edu

Degrees Offered: M.S., Ph.D.
The Department of Molecular, Cellular, and Biomedical Science (MCBS) offers the master of science and the doctor of philosophy degrees in microbiology. Research opportunities are available in a broad range of areas, including plant-microbe interactions, nitrogen fixation, signal transduction, microbial development, host-microbe interactions, microbial immunity, molecular mechanisms of pathogenesis, environmental and molecular virology, marine microbial ecology, physiology and biochemistry, biotechnology, and bioremediation.

Admission Requirements

Applicants are expected to have had adequate preparation in the biological and physical sciences. This typically includes general and organic chemistry, physics, one semester of calculus, a year of general biology, a semester or more of biochemistry, and general microbiology. Formal courses in quantitative analysis and statistics are recommended. Applicants with deficiencies in these background courses who are admitted to the program may be required to complete appropriate coursework without graduate credit. Applicants must submit current scores (within five years) from the general test of the GRE. Each applicant to the graduate program must be sponsored by a faculty member in the department. The sponsor’s decision is usually based on the Statement of Interest section of the Application to Graduate School form. Persons planning to apply to the program should contact the graduate program coordinator in microbiology to obtain information on the department.

Degree Requirements

M.S. Degree Requirements

Students admitted to the M.S. program are required to conduct an independent research project in conjunction with a faculty adviser and must submit a thesis based on this research to a graduate committee, which determines its acceptability. Specific coursework is determined in conjunction with the graduate committee. A minimum of 30 credits, including these credits, is required. In addition, the student must submit at least one manuscript for publication to a peer-reviewed journal.

Ph.D. Degree Requirements

Students with appropriate academic training at the baccalaureate or master’s level may be considered for admission to the doctoral program. Successful entrance to candidacy requires the successful completion of the following:

1. All courses required by the Graduate Committee including MICR 906;
2. A written qualifying exam administered by the Graduate Committee;
3. An independent research proposal developed in conjunction with a faculty adviser;
4. An oral defense of the research proposal.

Students enrolled in the doctoral program are required to complete one semester of teaching; and to complete and successfully defend a dissertation based on their research proposal.

The department’s acceptance of the dissertation is contingent on its approval by the doctoral committee and evidence that at least two manuscripts based on the thesis research have been submitted to a peer-reviewed journal appropriate to the topic.

All graduates are expected to enroll in MCBS 997, Microbiology Seminar, each semester.

Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MICR 802</td>
<td>Infectious Disease and Health</td>
<td>5</td>
</tr>
<tr>
<td>MICR 804</td>
<td>Genetics of Prokaryotic Microbes</td>
<td>5</td>
</tr>
<tr>
<td>MICR 805</td>
<td>Immunology</td>
<td>3</td>
</tr>
<tr>
<td>MICR 806</td>
<td>Virology</td>
<td>0 OR 3</td>
</tr>
<tr>
<td>MICR 807</td>
<td>Marine Microbiology</td>
<td>5</td>
</tr>
<tr>
<td>MICR 808</td>
<td>Virology Lab</td>
<td>2</td>
</tr>
<tr>
<td>MICR 811</td>
<td>Genomics and Bioinformatics</td>
<td>0 OR 4</td>
</tr>
<tr>
<td>MICR 813</td>
<td>Microbial Ecology and Evolution</td>
<td>4</td>
</tr>
<tr>
<td>MICR 814</td>
<td>Public Health and Waterborne Diseases</td>
<td>0 OR 4</td>
</tr>
<tr>
<td>MICR 815</td>
<td>Immunology Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>MICR 817</td>
<td>Microbial Physiology</td>
<td>5</td>
</tr>
<tr>
<td>MICR 818</td>
<td>Ethics and Issues in Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>MICR 851</td>
<td>Cell Culture</td>
<td>0 OR 5</td>
</tr>
<tr>
<td>MICR 895</td>
<td>Special Topics</td>
<td>1 TO 4</td>
</tr>
<tr>
<td>MICR 899</td>
<td>Master’s Thesis</td>
<td>1 TO 10</td>
</tr>
</tbody>
</table>
Molecular, Cellular, and Biological Sciences (MCBS)
microbiology.unh.edu

Important Notice: The College of Life Sciences and Agriculture has recently undergone a major reorganization. The Department of Animal and Nutritional Sciences (ANSC) has recently been divided between two departments.

The Department of Biological Sciences, www.biolsci.unh.edu/, now offers the master of science degree in animal science.

The Department of Molecular, Cellular, and Biomedical Sciences, www.mcbs.unh.edu/, now offers the master of science degree in nutritional sciences, the Ph.D. in animal and nutritional sciences, and a postgraduate internship in dietetics. Visit the nutritional sciences page for a link to NUTR courses.

Information on these programs is offered below and at the Web sites linked above.

Music (MUSI)
www.unh.edu/music

Degree Offered: M.A.
The Department of Music offers programs leading to the degree of master of arts with options in music studies and music education. The program is flexible, allowing the student to emphasize any of a variety of areas, and is built around a core curriculum stressing a broad knowledge of music. Graduates have established successful careers in performance, conducting, public school teaching, college teaching, and research. The program also serves as excellent preparation for doctoral study.

Admission Requirements
For the music studies option, a bachelor’s degree in music, or its equivalent, from an accredited institution is required for admission; for the option in music education, the requirement is a bachelor’s degree in music education, or a bachelor’s degree in music and teacher certification. Graduate Record Exams are not required. However, a placement examination covering music theory, aural skills, and music history will be administered to incoming students prior to registration. Any deficiencies must be remediated by the end of the second semester in order to remain in the program. In the music studies option, a reading knowledge of both German and French is strongly recommended for candidates who intend to continue on for a Ph.D. in musicology.

Applicants planning to enter the music studies option should contact the graduate coordinator concerning additional application requirements. Applicants for the music education option must arrange for an interview with the music education coordinator.

Graduate students interested in earning teacher certification in music should apply through the Department of Education.

Degree Requirements

Music Studies Option
This option offers the opportunity for in-depth study of music history and literature. The option has also proven valuable to students who wish to augment undergraduate degrees in performance and/or music education with more intensive studies in music theory, composition, music literature, instrumental and vocal performance, historical performance practices, and conducting. Required courses are MUSI 955, 956, 957, 958, 991, and 994. A written essay of a substantive nature on a topic of the candidate’s special interest is also required, as approved by the adviser.

Music Education Option
The goal of the option in music education is to develop a broad knowledge at the graduate level in the fields of music education, performance, history, and theory. Required courses are MUSI 953, 994, and two courses selected from MUSI 805, 807, 809, 811, 813, 815, 956, 957, and 958. Also required are MUED 996 and either MUED 983 or 984. In this option, each candidate will also complete an independent project (MUED 995) of a substantive nature in an area of the candidate’s special interest as approved by the adviser.

For both options, courses at the 800 and 900 levels in music, or at the 800 and 900 levels in other departments, may be elected with the approval of the student’s adviser to augment the required courses for a minimum total of 30 credits. For completion of the program in both options, a comprehensive oral examination is required.

Courses

Music 953 Music of the Renaissance 3
Music 955 Music of the Baroque 3
Music 957 Music of the Classical Period 3
Music 958 Music of the Romantic Period 3
Music 811 Music of the 20th and 21st Centuries 3
Music 815 Survey of Opera 3
Music 831 Advanced Instrumental Conducting 2
Music 832 Advanced Choral Conducting 2
Music 836 Graduate Early Wind Instruments 1T O 4
Music 841 Graduate Piano 1T O 4
Music 845 Graduate Voice 1T O 4
Music 846 Graduate Violin 1T O 4
Music 847 Graduate Viola 1T O 4
Music 848 Graduate Cello 1T O 4
Music 849 Graduate Bass 1T O 4
Music 851 Graduate Flute 1T O 4
Music 852 Graduate Clarinet 1T O 4
Music 853 Graduate Saxophone 1T O 4
Music 854 Graduate Oboe 1T O 4
Music 855 Graduate Bassoon 1T O 4
Music 856 Graduate French Horn 1T O 4
Music 857 Graduate Trumpet 1T O 4
Music 858 Graduate Trombone 1T O 4
Music 859 Graduate Euphonium 1T O 4
Music 860 Graduate Tuba 1T O 4
Music 861 Graduate Percussion 1T O 4
Music 862 Graduate Keyboards 1T O 4
Music 863 Graduate Jazz Guitar 1T O 4
Music 864 Graduate Drum Set 1T O 4
Music 871 Counterpoint 3
Music 875 Composition 3
Music 876 Composition 3
Music 877 Advanced Composition 3
Music 879 Orchestration 3
Music 881 Analysis: Form and Structure 3
Music 882 Analysis: Form and Structure 3
Music 885 Electronic Sound Synthesis 3
Music 895 Special Studies 1T O 4
Music 955 Introduction to Bibliography 3
Music 956 Readings in Music History: Antiquity to 1600 3
Music 957 Readings in Music History: 1600 to 1820 3
Music 958 Readings in Music History: 1820 to the Present 3
Music 991 Research Seminar 1T O 4
Music 994 Theory Seminar 3
Music 995 Independent Study in the History and Theory of Music 1T O 4
Music 841 Techniques and Methods in Choral Music 2
Music 843 Materials and Methods in Piano Music 2
Music 845 Techniques and Methods in String Instruments 2
Music 846 Techniques and Methods in String Instruments 2
Music 847 Techniques and Methods in Woodwind Instruments 3
Music 849 Techniques and Methods in Brass Instruments 2
Music 851 Techniques and Methods in Percussion Instruments 2
The Department of Natural Resources offers a master of science in natural resources along with options in four areas.

**Natural Resources: Environmental Conservation**
Areas of interest include natural resource policy, conservation biology, sustainability, ecological ethics and values, international environmental affairs, and spatial data analysis (remote sensing and GIS).

**Natural Resources: Forestry**
Areas of interest include forest resource economics and management, biometrics, genetics, forest ecosystem dynamics, spatial data analysis (remote sensing and GIS).

**Natural Resources: General**
This program is designed for students whose work crosses disciplinary boundaries within the natural resources and does not easily fit within one of the existing options. Students can later choose to specify one of the five options if their research interests change or if they become specific to one individual area.

**Natural Resources: Water Resources**
Areas of interest include wetlands, land-water interactions, groundwater chemistry, and biogeochemistry.

**Natural Resources: Wildlife**
Areas of interest include field and laboratory aspects of wildlife energetics, wildlife use of managed and unmanaged forest systems, habitat management and fragmentation, conservation biology, wetland wildlife ecology, population dynamics.

**Admission Requirements**
Applicants are expected to have completed either an undergraduate degree in the field in which they plan to specialize or show adequate preparation in the basic support courses of the field. Students with good undergraduate records who lack a background in a particular field may be admitted to a program, provided they are prepared to correct any deficiencies. All entering students must have taken at least one statistics course or do so at the graduate level. Applicants must submit current scores (within five years) from the general test of the GRE.

Students entering the forestry option may elect to develop concentrations within any of the above-listed areas. Applicants are expected to have backgrounds in forestry or related biological sciences. Students interested in water resources are required to have adequate preparation in chemistry and mathematics as well as biological or earth sciences. Students interested in wildlife are expected to have adequate preparation in biological sciences, chemistry, and mathematics. Students interested in environmental conservation should have a background appropriate for their area of interest. Since environmental conservation covers such a broad area, applicants are always reviewed carefully on an individual basis.

Prior to submitting an application, applicants should contact one or more graduate faculty advisors to discuss programs and funding, and secure a commitment of a faculty member to serve as graduate adviser.

**Degree Requirements**
An M.S. degree is conferred upon successful completion of a program of not less than 30 credits, including the following course requirements or equivalents: NR 993, Seminar or NR 947, Current Issues in Ecosystem Ecology; NR 903, Approach to Research, a quantitative methods course; and NR 996, Natural Resource Education; and NR 998, Directed Research, or NR 899, Thesis and a formal presentation of the thesis or directed research results.

**Cooperative Doctoral Program**
The Department of Natural Resources participates in the Natural Resources and Earth System Science Ph.D. Program (NRESS), an interdepartmental degree offered at UNH. For further details on this program, please visit the NRESS program page.
Natural Resources and Earth Systems Science (NRESS)
www.unh.edu/nressphd/index.html

Degree Offered: Ph.D.
The graduate program in Natural Resources and Earth Systems Science (NRESS) is an interdepartmental program offering only the Ph.D. degree for interdisciplinary work in areas related to the understanding and management of the environment in the broadest context. Areas of study include, but are not limited to, ecosystem science, biogeochemical cycling, geochemical systems, atmospheric science, environmental philosophy, forestry, geologic science, hydrology, marine science, oceanography, social science, environmental policy and ethics, environmental education, and multidisciplinary natural resources management.

The NRESS Ph.D. program offers two degree options:
Ph.D. in Natural Resources and Environmental Studies (NRES) Ph.D. in Earth and Environmental Science (EES)

Admission Requirements
Applicants to the NRESS Program come from a wide range of undergraduate majors and masters degree concentrations. Individuals are judged as to the quality of their work and its relevance to the particular area of study they propose to pursue.

Students are expected to have completed a master's degree before entering the program, although this is not a requirement. Many students will first complete a master's degree in a related department and then continue on in the NRESS Program.

All applicants must identify an adviser before being admitted, and this faculty member must agree to serve as the applicant's adviser. Certain applicants may be admitted with deficiencies identified by their adviser and/or by the executive committee. These deficiencies normally must be corrected in the first year of the program. All applicants must submit GRE scores. Please see the program Web site for details on applying to the program.

Degree Requirements
The requirements of the doctoral program are flexible to accommodate the diverse interests and needs of students. All students in the NRESS program must meet the requirements listed below.

Committees and Coursework
The Ph.D. guidance and dissertation committees must consist of at least five members. The chair must be a member of the NRESS faculty. Three of the five members must be UNH Graduate School faculty, and committee members must be from more than one department. Students are encouraged to include at least one off-campus member. Off-campus committee members must hold a doctoral degree and be approved by the student's adviser, the NRESS Program, and the Graduate School dean. Students should select their guidance committee in a timely manner, within one year for full-time students and two years for part-time students.

Core Area Course Requirements
All students will take one pre-approved course in each of four core areas while enrolled in the program: natural sciences, ethics/policy/law, methods, and seminar. Any course used to satisfy the natural sciences, ethics/policy/law, and methods core areas must be a classroom course of at least 3 credits. The seminar course must be interactive and must be at least 1 credit. Independent study courses may not be used to satisfy core requirements. Students must complete a coursework Approval Form, which summarizes all courses to be taken, and obtain signatures from their adviser, committee members, and the NRESS program chair once the coursework is completed.

Students Entering the Program without a Master's Degree
Students entering the program without a master's degree are expected to complete a minimum of 36 credit hours. There is not a specific credit requirement beyond the required four core courses for students who have completed a M.S. or M.A. degree in a related field. Students enter the NRESS program with diverse backgrounds and preparation in their particular area of study. Therefore, final credit requirements are determined by the guidance committee and may include additional coursework necessary to enhance the student's selected field of study and/or correct any deficiencies in the student's previous program. Students may apply a maximum of 12 credits of independent study and/or seminar courses to their total course requirement.

Transfer Credits
Graduate-level courses taken prior to admission may be transferred into the program and applied to the total only if they were not taken while matriculated in another degree program, as per Graduate School policy. These courses may not be used to meet the core course requirements. Transfer of credits must be approved by the adviser, the guidance committee, and the graduate school.

Language Proficiency
Language proficiency may be required at the discretion of the student's adviser/committee. If required, a student will need to show proficiency in one foreign language or one computer language.

Examinations
Each student is required to pass three examinations, each of which has both a written and oral component. Additional preliminary examinations may be administered before the three required exams as the committee deems necessary. Performance on such an exam will determine areas where the student needs additional coursework or could result in the student's removal from the program.

Comprehensive exam: The student must write a comprehensive written answer to one question from each committee member that covers the concepts and factual material deemed essential for the student's program. Three weeks are allowed for completion of the exam, after which the student gives an oral presentation to the committee. This exam is taken within three years of initiation of graduate study in the program. The committee may require a student to repeat part or all of the comprehensive exam if the student's performance is deemed unsatisfactory.

Proposal exam: The student must present to the committee a written proposal on the dissertation research topic. Once the proposal is written, the student will complete a public oral presentation of the proposed research, followed by an oral examination by the committee.

Final exam: The student must complete a written Ph.D. dissertation prior to the final exam. Once written, the student is required to complete an oral defense of the dissertation, which will include both a public presentation and oral examination by the committee.
A student may be required to take additional courses following either the comprehensive or proposal exam, or may be removed from the program following failure of any of the required exams. Students are advanced to candidacy after successfully completing the comprehensive exam, proposal exam, and all coursework required by the guidance committee as summarized on the Coursework Approval Form.

Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>NRES 995</td>
<td>Independent Study</td>
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<tr>
<td>NRES 999</td>
<td>Doctoral Research</td>
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</tr>
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Nursing (NURS)

www.chhs.unh.edu/nursing/index.html

Degrees Offered: M.S.

The Department of Nursing offers the master of science degree in nursing under two programs: Graduate Program in Nursing and Direct Entry Master’s in Nursing.

The Graduate Program in nursing currently offers three clinical practice tracks: clinical nurse leader (CNL), evidence-based nursing (EBN), and Family Nurse Practitioner (FNP). Within the evidence-based nursing track, students can complete a program of study in clinical nursing education. All tracks prepare nurses for evidence-based practice through critical inquiry using a variety of instructional modalities.

The Direct Entry Master’s in Nursing Program culminates in the CNL track for the master of science degree in nursing.

Certificate Program

The Department of Nursing offers the Post-Master’s Family Nurse Practitioner Certificate Program for students who completed a master’s of science degree in nursing.

Admission Requirements

Graduate Program in Nursing:

Registered nurses (RNs) who hold a baccalaureate degree in either nursing or another field are considered for admission. Applicants are required to have a good academic record and completion of coursework in statistics and research. RNs whose baccalaureate degree is in a discipline other than nursing are considered. The program of study is individualized based on evaluation of competency statements and résumé submitted with the application form. RNs without a B.S.N. should contact the Graduate Nursing Office for a copy of the competency statement form.

Direct Entry Master’s in Nursing:

Direct entry applicants are required to have a strong academic record and satisfactory completion of coursework in statistics, two semesters of anatomy and physiology, and microbiology with a grade of B or better. A course or equivalent background in research is suggested. This program is for applicants with a bachelor’s degree or higher in a field other than nursing.

Degree Requirements

M.S. Degree Requirements

The requirements for the Graduate Program in Nursing for the master of science degree includes a total of 34 credit hours for the clinical nurse leader (CNL), 32 credit hours for the evidence-based nursing (EBN), and 48 hours for the Family Nurse Practitioner (FNP) track. All tracks are designed to be completed in three to four semesters of full-time study including summer. Individual plans of study are available for those wishing to pursue part-time study. Although no guarantees are given, we do try to accommodate student requests to the extent possible.

The Direct Entry Master’s in Nursing Program is an accelerated full-time, two-year, 73-credit-course of study. However all courses are not offered every semester. Students are provisionally admitted to the M.S. program. Provision will be removed once the RN license is received. Students will be eligible to take the NCLEX-RN after completing four (two years) or seven (three years) semesters of accelerated study (including summer), a total of 64 credits. Students are eligible to take the CNL (Clinical Nurse Leader) Certification Examination upon completion of the degree. The curriculum in January includes two or three summer sessions.

Core Courses

All master’s degree students complete the following 9 credits of core courses: 900, The Discipline of Nursing; 901, Nursing and Change in Health Services; and 905, Research.

Specialty courses for the Graduate Program in Nursing (23-36 credits) required for each area of specialization:

For clinical nurse leader (CNL): 908, Clinical Application of Human Physiology; 925, Health Care Systems and Leadership; 951, Clinical Epidemiology and Decision Analysis; 952, Clinical Nursing Leadership I (300 clinical hours); 953, Promoting Quality Management; 954, Clinical Nursing Leadership II (112 clinical hours); and 956, Capstone Project Seminar.

For evidence-based nursing (EBN): 908, Clinical Application of Human Physiology; 925, Health Care Systems and Leadership; 951, Clinical Epidemiology and Decision Analysis; 953, Promoting Quality Management; 955, Practicum in Advanced Nursing Practice (300 clinical hours); 956, Capstone Project Seminar; and one, 3-credit elective related to program of study.

For family nurse practitioner (FNP) and post-master’s family nurse practitioner (PM-FNP): 810, Families in Health and Illness; 907*, Pharmacology; 908*, Clinical Application of Human Physiology; 909*, Health and Illness Appraisal; 925, Health Care Systems and Leadership; 935 Primary Care Families I; 936, Practicum in the Primary Care of Families I (168 clinical hours); 937, Primary Care of Families II; 938, Practicum in the Primary Care of Families II (168 clinical hours); 939, Seminar and Practicum in the Primary Care of Families III (336 clinical hours); and 942, Advancing Evidence in Complex Health Challenges. FNP courses will only be offered with sufficient enrollment.

* These courses may be waived by PM-FNP students if taken in master’s in nursing program.

Concluding Experience

For clinical nurse leader (CNL) and evidence-based nursing (EBN) tracks, the capstone course, NURS 956, requires students to complete a scholarly project which synthesizes advanced practice knowledge and skills to address substantive nursing practice issues. CNL and EBN students may elect to complete a thesis, NURS 899 (6 credits), as the capstone course in place of NURS 956. If a student opts to do a thesis, the student should discuss this option with a faculty advisor early in the program of study. For family nurse practitioner students, the capstone course, NURS 939, is the final integrated clinical practicum.
Direct Entry Courses (73 credits); all courses are required and sequenced:

Two-Year Accelerated Curriculum:

Spring I
- NURS 806 Clinical Inquiry 4 cr.
- NURS 807 Pathophysiology and Pharmacology 4 cr.
- NURS 813 Health Assessment and Clinical Nursing 5 cr.
- NURS 825 Collaborative Care I: Care of Older Adult 3 cr.
- NURS 900 Discipline of Nursing 3 cr.

Summer I
- NURS 826 Caring for People with Severe & Persistent Mental Illness 4 cr.
- NURS 827 Collaborative Care II: Managing Acute & Complex Care of Individuals 6 cr.
- NURS 953 Promoting Quality Management 2 cr.

Fall I
- NURS 828 Public Health Nursing 5 cr.
- NURS 829 Collaborative Care III: Childbearing & Childrearing Families 6 cr.
- NURS 905 Research 3 cr.
- NURS 908 Clinical Application of Human Physiology 3 cr.

Spring II
- NURS 925 Health Care Systems & Leadership 3 cr.
- NURS 951 Clinical Epidemiology and Decision Analysis 3 cr.
- NURS 952 Clinical Nursing Leadership I (immersion experience) 10 cr.

Eligible for NCLEX-RN

Summer II
- NURS 901 Nursing & Change in Health Services 3 cr.

Fall II
- NURS 954 Clinical Nursing Leadership II (practicum) 3 cr.
- NURS 956 Capstone Project Seminar 3 cr.

Three-Year Accelerated Curriculum:

Spring I
- NURS 806 Clinical Inquiry 4 cr.
- NURS 807 Pathophysiology and Pharmacology 4 cr.
- NURS 813 Health Assessment and Clinical Nursing 5 cr.

Summer I
- NURS 827 Collaborative Care II: Managing Acute & Complex Care of Individuals 6 cr.
- NURS 953 Promoting Quality Management 2 cr.

Fall I
- NURS 829A Collab Care III: Childbearing Families 2 cr
- NURS 829B Collab Care III: Childrearing Families 2 cr
- NURS 829C Collab Care III: Clinical 2 cr
- NURS 908 Clinical Application of Human Physiology 3 cr.

Spring II
- NURS 825 Collaborative Care I: Care of Older Adult 3 cr.
- NURS 900 Discipline of Nursing 3 cr.
- NURS 925 Health Care Systems & Leadership 3 cr.
- NURS 951 Clinical Epidemiology and Decision Analysis 3 cr.

Summer II
- NURS 826 Caring for People with Severe & Persistent Mental Illness 4 cr.

Fall II
- NURS 828 Public Health Nursing 5 cr.
- NURS 905 Research 3 cr.

Spring III
- NURS 952 Clinical Nursing Leadership I (immersion) 10 cr.
  (400 clinical hours)

Eligible for NCLEX-RN

Summer III
- NURS 901 Nursing & Change in Health Services 3 cr.

Fall II
- NURS 954 Clinical Nursing Leadership II (practicum) 3 cr.
  (112 clinical hours)
- NURS 956 Capstone Project Seminar 3 cr.

Research and Scholarly Activities

The graduate faculty of the University’s nursing program believe learning is a creative process wherein students are active participants in their education, growth, and development as advanced practice nurses. Faculty members are facilitators and mentors to students within a supportive scholarly environment. Students are prepared to be skilled, knowledgeable, and reflective leaders in health care who practice as nurse practitioners, clinical nurse leaders, or clinical educators.

The generation, dissemination, and application of evidenced-based nursing knowledge and practice are a central mission for the nursing department. Health care of vulnerable populations is the research focus among the faculty. Faculty engage in scholarly inquiry across diverse topics such as care-giving, acute symptom management, clinical decision-making, adolescent pregnancy, elder care giving, and cultural diversity. Faculty publications, research, public policy initiatives, and other consultative/professional activities can be viewed at the department’s Web site.

Cognate in College Teaching

By special provisions the Cognate in College Teaching, offered by the UNH Graduate School, is available to graduate students in nursing.

Requirements:
1. Must apply to Graduate School for admission into the Cognate Program. This application must be approved before enrollment in GRAD 990.

2. Complete a total of 15 credits:
   a. 6-7 credits in the following nursing courses:
      NURS 950 Reading and Research in Advanced Nursing (2-8 credits)
      NURS 955 Practicum in Advanced Nursing Practice (3-6 credits)
   b. 8-9 credits in the following College Teaching courses:
      GRAD 950 Issues in College Teaching 1 cr (REQUIRED)
      GRAD 990 College Teaching Praxis 4 cr (REQUIRED)

Earn 3-4 credits using any of the following courses:

- GRAD 951 Teaching with Writing 2 cr
- GRAD 952 College Teaching Mentorship 1 cr
- GRAD 959 Advanced Issues in College Teaching 1 cr
- GRAD 961 Cognition, Teaching and Learning 2 cr OR
- GRAD 965 Classroom Research and Assessment Methods 2 cr

- c. Present a qualifying teaching portfolio (GRAD 990)

Other Important Notes:

GRAD 950, Issues in College Teaching, is required for the Cognate

GRAD 990, College Teaching Praxis, is a requirement for the Cognate in College Teaching. You should enroll in this for the summer, in anticipation of graduation the following spring. You will receive an IA (continuing course) grade until your Teaching Portfolio is accepted by the review committee, which must be prior to your anticipated graduation date. Please contact Michael Lee before enrolling (862-4872).

GRAD 963, College Students and the Undergraduate Culture, and GRAD 942, The Role of the Professor, are not approved courses for nursing students matriculating for the Cognate in College Teaching. You may take these courses, but they will note contribute to the Cognate.

Courses

- NURS 806 Clinical Inquiry 4 cr.
- NURS 807 Pathophysiology and Pharmacology 4 cr.
- NURS 810 Families in Health and Illness 3 cr.
- NURS 813 Health Assessment and Clinical Nursing 0 OR 5 cr.
- NURS 825 Collaborative Care I: Care of Older Adult 3 cr.
- NURS 826 Caring for People with Severe & Persistent Mental Illness 0 OR 4 cr.
- NURS 827 Collaborative Care II: Managing Acute and Complex Care of Individuals 0 OR 6 cr.
- NURS 828 Public Health Nursing 5 cr.
- NURS 829A Collaborative Care III: Childbearing Families 2 cr.
- NURS 829B Collaborative Care III: Childrearing Families 2 cr.
- NURS 829C Collaborative Care III: Clinical 2 cr.
- NURS 853C Special Topics 1 TO 4 cr.
- NURS 899 Master's Thesis 1 TO 6 cr.
- NURS 900 Discipline of Nursing 3 cr.
- NURS 901 Nursing and Change in Health Services 3 cr.
- NURS 905 Research 3 cr.
- NURS 907 Pharmacology 3 cr.
Nutritional Sciences (NUTR)

Important Notice: The College of Life Sciences and Agriculture has recently undergone a major reorganization. The Department of Animal and Nutritional Sciences (ANSC) has recently been divided between two departments.

The Department of Molecular, Cellular, and Biomedical Sciences, www.mcbs.unh.edu/, now offers the master of science degree in nutritional sciences, the Ph.D. in animal and nutritional sciences, and a postgraduate internship in dietetics. Visit the animal and nutritional sciences page for a link to ANSC course descriptions.

The Department of Biological Sciences, www.biolsci.unh.edu/, now offers the master of science degree in animal science.

Information on these programs is offered below and at the Web sites linked above.

Degree Programs Offered: M.S., Ph.D.

The graduate program includes the M.S. degree in Nutritional Sciences, or a Ph.D. degree in animal and nutritional sciences. Areas of research specialization include human nutrition, mammalian physiology and pathology, nutritional biochemistry and metabolism, reproduction and endocrinology. Research activities utilize human, animal, and cell culture systems to investigate nutrient metabolism and a molecular-level understanding of life processes and diseases.

Dietetic Internship Program

In addition to degree-granting programs, the UNH Nutrition Program offers an American Dietetic Association (A.D.A.) approved dietetic internship program. The emphasis of the internship is on “Health Promotion and Disease Prevention.” In addition to the more than 1,200 hours of practicum work, students earn 12 graduate-level credits as part of the internship, which may be applied to their master’s degree work at UNH.

Admission Requirements

Students applying for the M.S. or Ph.D. program will be expected to present recent (within five years) general Graduate Record Examination (GRE) scores and possess a background in basic sciences appropriate for advanced study in the proposed area of specialization (for example, courses in biology, chemistry, organic chemistry, biochemistry, and physics). Although not required for candidacy in the Ph.D. program, an M.S. degree is suggested for most students. The student’s committee may require certain undergraduate courses as part of the graduate program if additional competencies would be beneficial to the student. Students interested in preparing themselves for admittance to a dietetic internship, in addition to obtaining a nonthesis M.S. degree in Nutritional Sciences, should contact Dr. Ruth Reilly in advance of applying (862-2164; ruth.reilly@unh.edu) in order to determine their best course of action.

Degree Requirements

M.S. in Nutritional Sciences-Thesis Option

With this option, students must become actively engaged in a research project related to the nutritional sciences and gain a comprehensive understanding of nutritional science through coursework. The option emphasizes active participation in original hypothesis-driven research of publishable quality. This option is for students who anticipate a professional career involving research or discovery, with a strong background in the basic biology and chemistry of nutrition. This path may be most appropriate for students who expect to pursue further advanced study, i.e., additional graduate studies or professional school, after graduation.

The program of study must include a minimum of 30 graduate credits and completion of a Master’s Thesis based on a research project. Six credits of thesis research (NUTR 899) are required. No more than 4 credits of investigations (NUTR 995) can apply. Each candidate must present at least two seminars (exclusive of the thesis defense) and must serve as a teaching assistant for at least one semester. A thesis committee will be appointed early in the program and consist of at least three members of the graduate faculty; one of these will be the primary mentor. Students will design a program of study in close consultation with their thesis committee, including their academic courses and scientific research project. Candidates will be required to pass an oral examination based on graduate courses and completed thesis.

Thesis and nonthesis master’s degree students are required to present to two formal seminars during their program or study.

M.S. in Nutritional Sciences—Nonthesis Option

This option emphasizes coursework in the nutritional sciences that will provide students with exposure to theoretical aspects of research. Students who anticipate a professional career that emphasizes applied aspects of nutrition, rather than basic biological aspects of nutritional sciences, are most appropriate for this option. This path is also preferred by working professionals who are seeking advanced training in nutrition leading to an accredited degree, but who don’t have the opportunity to devote a significant amount of time to a comprehensive research project that would be required to produce a thesis.

Students in this program will complete a minimum of 39 credits. Upon admittance, the student will be assigned a faculty adviser. Up to 8 credits of Dietetic Internship may apply.

Thesis and nonthesis master’s degree students are required to present to two formal seminars during their program or study.

Ph.D. in Animal and Nutritional Sciences

The Ph.D. in animal and nutritional sciences trains students to gain advanced knowledge and develop research expertise in such areas as the cellular and molecular biology of various nutrients, nutritional physiology and biochemistry, vascular biology and cardiovascular disease, immunology and genetics, obesity and diabetes, dairy nutrition, human nutrition, reproductive physiology and endocrinology. It prepares students for future careers in technical consulting, education,
and research in academic, industrial, and government institutions. Students with appropriate academic training at the baccalaureate or master's degree level will design a program of study in conjunction with a faculty guidance committee. The student will advance to candidacy after successful completion of all relevant graduate courses and passing a qualifying examination conducted by the guidance committee, which will contain oral and/or written components at the discretion of the committee members. The guidance committee for doctoral students will consist of a minimum of five members, three of whom must be from within the Department of Animal and Nutritional Sciences and at least one member must be from outside the department. After the student's advancement to candidacy for the Ph.D. degree, a doctoral committee will be appointed to supervise and approve the dissertation.

The dissertation must be based on original hypothesis-driven research of publishable quality. A public presentation of the dissertation research findings will be followed by a final examination, which will be primarily an oral defense of the dissertation. The candidate will be required to serve as a teaching assistant for a minimum of two semesters or to teach a course for one semester. Aptitude in scientific communication will be developed by presentation of one seminar during each year of enrollment, not including the dissertation defense.

### Dietetic Internship

The UNH Dietetic Internship is a postbaccalaureate 10.5 month program designed for students who have successfully completed A.D.A. undergraduate coursework, have an A.D.A. undergraduate verification statement, and have been accepted via the national dietetic internship application process. The program is currently granted accreditation by the Commission on Accreditation for Dietetics Education of the A.D.A., a specialized accrediting body recognized by the Commission on Recognition of Post-secondary Accreditation and the United States Department of Education. The purpose of the UNH Dietetic Internship is to recruit and educate students who meet the program's admission criteria, and who will be able to function as capable, competent entry-level dietitians in clinical nutrition, food service management, and community nutrition services.

The concentration of our full-time program is health promotion/disease prevention. Interns will gain this expertise through active participation and engagement in a variety of food service, community and clinical affiliations. Interns will gain entry-level skills to promote health and wellness, provide nutrition education, engage in clinical care, and participate in nutrition and dieticetics program research and assessment. This focus incorporates the UNH philosophy that sustainable, safe, and accessible food systems, health promotion and treatment, as well as nutrition assessment and intervention, are integral components of dieticetics training.

As the student progresses through the program, s/he acquires skills needed to assume the responsibilities of a dietitian. Additionally, the intern develops an awareness of the environment within which dietitians work, including the legal, economic, and political forces that affect the profession. The benefit of active participation in the America Dietetic Association is highlighted, and an appreciation for the strength of the dietetic profession is cultivated. The program demonstrates the importance of commitment to acquire current knowledge in the chosen area of specialization within the profession. Students complete 12 credits of graduate level course work integrated throughout the internship program. These credits may be applied to the UNH master’s degree, (and possibly to other graduate programs as well).

Although the concentration of our full-time program is health promotion/disease prevention, interns must demonstrate proficiency by meeting competencies in all areas of dietetics. Students who successfully complete the program are eligible to take the dietetic registration examination and, when successfully passed, practice as registered dietitians (RD).

### Courses

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<td>NUTR 811</td>
<td>Lipid Metabolism</td>
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<td>NUTR 825</td>
<td>Metabolic Adaptations to Exercise II</td>
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<td>NUTR 840</td>
<td>Nutrition for Children with Special Needs</td>
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<td>NUTR 850</td>
<td>Nutritional Biochemistry</td>
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<td>NUTR 856</td>
<td>Treatment of Adult Obesity</td>
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<td>NUTR 870</td>
<td>Nutrition and Gender Based Health Concerns</td>
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<td>NUTR 873</td>
<td>Clinical Nutrition</td>
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<td>NUTR 880</td>
<td>Critical Issues in Nutrition</td>
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<td>NUTR 895</td>
<td>Investigations</td>
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<td>NUTR 898</td>
<td>Nutrition Research Experience</td>
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<tr>
<td>NUTR 889</td>
<td>Master's Thesis</td>
<td>1 TO 6</td>
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<tr>
<td>NUTR 900</td>
<td>Contemporary Topics in Animal, Nutritional, and Biomedical Sciences</td>
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<tr>
<td>NUTR 910</td>
<td>Mineral Nutrition</td>
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<td>NUTR 912</td>
<td>Vitamin Nutrition</td>
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<td>NUTR 929</td>
<td>Dietetics: Principles and Practices</td>
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<tr>
<td>NUTR 930</td>
<td>Dietetics: Foodservice, Community and Research</td>
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<tr>
<td>NUTR 931</td>
<td>Dietetics: Clinical Theory and Practice</td>
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### Occupational Therapy (OT)

**Degree Offered: M.S.**

The Department of Occupational Therapy offers the master of science degree in occupational therapy.

**Admission Requirements**

The master's degree prepares students for entry-level occupational therapy practice. Students gain the knowledge and skills to work with people of all ages to enable their participation within their natural environments and daily life activities, including education, work, self-care, home management, and leisure.

The program is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE). ACOTE is located at the American Occupational Therapy Association, 4720 Montgomery Lane, P.O. Box
Entering students Fall 2009 (graduating May or September 2011)

The Professional Master’s Degree Track in occupational therapy consists of two years of study (five semesters) including coursework and fieldwork experiences. One level II fieldwork placement occurs during a summer semester (either between the first and second year of the program, or following the second year). The master’s degree requires the completion of 62 graduate-level credits, which includes 19 credits of fieldwork. Required OT courses include: 841, 846, 851, 852, 854, 855, 856, 857, 862, 863, 864, 865, 875, 892, 885, 860, 860L, 871.

Entering students Fall 2010 (graduating December 2012)

The program consists of two and a half years of study (five semesters) of coursework, including fieldwork experiences, with no summer semester coursework. However, the spring semester of the second year is an extended semester to accommodate the fieldwork schedule, requiring students to continue in their fieldwork until the third week of June. The Professional Master’s Degree Track requires the completion of 74 graduate-level credits, which includes 18 credits of fieldwork.

Required OT courses include: *810, 841, 851, 852, 852L, 892, 871, 871/L (may be taken in senior year as 771 and 771L) *830 and *830L (may be taken in senior year as 730 and *730L), 854, 855, 856, 862, 863, 864, 865, 875, 892, 885, 860, 860L, 885, *845, 862, 862L, 863, 863L, 846, 854, 855, 856, 875, 865, *886

*New courses pending final approval

Academic Standards and Policies

Students must earn a minimum of B- in all required OT courses and receive a passing criterion score on the American Occupational Therapy Association Fieldwork Evaluation for the Occupational Therapist. Curriculum review and revision is undertaken annually. Occupational therapy faculty members work closely with students during academic advising sessions and share information about policy and requirement changes during registration periods as well as throughout the academic year. Students are also expected to take an active role in verifying expectations and should check with their departmental advisers each September for updated policies and requirements. Program requirements and policies for retention in the major are posted annually in the OT Department Policy and Procedure Manual, which is available on the department’s organization site on Blackboard.

Fieldwork experiences are scheduled in centers that are approved by the occupational therapy department. Students are responsible for transportation to off-campus fieldwork sites and other community learning experiences and must have personal liability insurance coverage for the practical components of the curriculum. Students are responsible for meeting the health and criminal record clearances established by their fieldwork sites. Proof of immunization such as poliomyelitis, rubella and hepatitis B may also be required. For level II fieldwork, health insurance, and a physical examination, including a tuberculin test, are required. After successfully completing both level II fieldwork requirements and all academic work, students are a Master of Science Degree in Occupational Therapy. They are then eligible to sit for the National Board Certification Examination in Occupational Therapy (NBCOT). Consistent with NBCOT expectations, students must sit for the certification examination within two years of completion of coursework and fieldwork. A felony conviction may affect a graduate’s ability to sit for the NBCOT certification examination and/or obtain licensure.

Curriculum design and schedule: Most classes will be scheduled during weekdays throughout the school day and early evening. Some courses require experiential learning, which students need to include in their weekly schedules.

Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<td>OT 822</td>
<td>Introduction to Assistive Technology</td>
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<tr>
<td>OT 824</td>
<td>Assistive Technology and Physical Disabilities</td>
<td>4</td>
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<tr>
<td>OT 826</td>
<td>Assistive Technology and Sensory, Communicative, and Cognitive Disabilities</td>
<td>4</td>
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<tr>
<td>OT 841</td>
<td>Human Occupation</td>
<td>4</td>
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<tr>
<td>OT 846</td>
<td>Transitions: Student to Professional</td>
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<tr>
<td>OT 851</td>
<td>Mind Body Systems/Neurologically-based Function and Dysfunction</td>
<td>4</td>
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<tr>
<td>OT 852</td>
<td>Human Movement and Environmental Effects on Everyday Occupations</td>
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<tr>
<td>OT 852L</td>
<td>Human Movement and Environmental Effects on Everyday Occupations Lab</td>
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<td>OT 854</td>
<td>Level II Fieldwork, I</td>
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<td>OT 855</td>
<td>Level II Fieldwork, I Online Discussion</td>
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<td>OT 857</td>
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<td>OT 860</td>
<td>Psychosocial Evaluation and Intervention</td>
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<td>OT 862</td>
<td>OT Evaluation and Intervention for Children</td>
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</table>
Ocean Engineering (OE)
www.unh.edu/oe

Degrees Offered: M.S., Ph.D.
Ocean Engineering (OE) offers programs leading to the master of science and doctor of philosophy degree program in ocean engineering. Programs in OE are by definition interdisciplinary and require the students to interact with the ocean science community as well as the traditional engineering disciplines. Students are exposed to the broad-based issues of working engineering problems in the ocean environment, as well as discipline specifics. In these programs they will be trained to develop responsible solutions to problems that will lead to sustainable activity and life in the ocean.

A master of science in ocean engineering option in ocean mapping is also available. There is a more structured path through this program, which incorporates all aspects of hydrography as required by the International Hydrographic Organization (IHO) and is approved by the IHO. Focus is on the engineering aspects of hydrography. The general purpose of these programs is to prepare engineering students for professional careers in ocean-related fields.

Admission Requirements
Applicants should have completed a baccalaureate degree in either chemical, civil, electrical, or mechanical engineering or have an equivalent background.

Degree Requirements
Each student is required to take one oceanography course: ESCI 852, Chemical Oceanography; ESCI 858, Introductory Physical Oceanography; ESCI 859, Geological Oceanography; or ZOOL 850, Biological Oceanography; as well as OE 990, Ocean Engineering Seminar I, II. In addition, each student must select three of the following core courses: OE 871, Geodesy and Positioning for Ocean Mapping; OE 810, Ocean Measurements Laboratory; OE 854, Ocean Waves and Tides; OE 870, Fundamentals of Ocean Mapping; OE 845, Environmental Acoustics I; and OE 885, Environmental Acoustics II. Students are also required to take a minimum of 12 credits of additional coursework and complete a master's thesis for 6 credits.

Ocean Mapping Option (For more information visit their Web site.)
This option is offered in conjunction with the Joint Hydrographic Center/Center for Coastal and Ocean Mapping. Each student is required to take these core courses: ESCI 858, Physical Oceanography; OE 990, Ocean Engineering Seminar I and II; OE 810, Ocean Measurements Lab; OE 845, Environmental Acoustics I; OE 854, Environmental Acoustics II; OE 870, Fundamentals of Ocean Mapping; OE/ESCI 871, Geodesy and Positioning for Ocean Mapping; and OE/ESCI 972, Hydrographic Field Course. In addition, each student must select at least 6 additional credits from these electives: OE 854, Ocean Waves and Tides; ESCI 859, Geological Oceanography; OE 954, Ocean Waves and Tides II; ESCI 907, Geostatistics; OE/ESCI 973, Seafloor Characterization; OE/CS 867, Interactive Data Visualization; EOS 824, Introduction to Ocean Remote Sensing; NR 857, Photo Interpretation and Photogrammetry; NR 860, Geographic Information Systems in Natural Resources; OE 995, Graduate Special Topics; or OE 998, Independent Study. Students are also required to complete a master’s thesis for 6 credits. Other related courses may be taken with approval.

Ph.D. Requirements
Students admitted to this Ph.D. program come from traditional engineering degree programs, physics, mathematics, computer science, and in some cases marine science programs. Those entering the Ph.D. program with a B.S. degree from an engineering program should be prepared to enter the Ph.D. program directly. Those coming from a B.S. in physics, mathematics, or computer science will have their transcripts more carefully reviewed on an individual basis, as additional courses may be required. A student in the ocean engineering Ph.D. program will be expected to take a minimum of 12 courses (exclusive of dissertation research) beyond those required for a B.S. degree.

Required Courses
One course in oceanography or ocean science: ESCI/ZOOL 850, Biological Oceanography; ESCI 852, Chemical Oceanography; ESCI 858, Introductory Physical Oceanography; or ESCI 859, Geological Oceanography

Three core courses in ocean engineering: OE 810, Ocean Measurements Lab; OE 844, Corrosion; OE 854, Ocean Waves and Tides; OE 856, Principles of Naval Architecture and Model Testing; OE 875, Coastal Engineering and Processes; OE 845, Environmental Acoustics I; OE 885, Environmental Acoustics II; OE 873, Seafloor Characterization; OE 870, Introduction to Ocean Mapping; OE 871, Geodesy and Positioning for Ocean Mapping; or OE 872, Hydrographic Field Course

Two courses in advanced OE topics (two at 900 level): OE 937, Advanced Hydrodynamics; OE 954, Ocean Waves and Tides II; OE 956, Dynamics of Moored Systems; or ESCI 959, Data Analysis Methods in Ocean and Earth Sciences

Two courses (one at the 800 level; one at the 900 level): MATH 845, MATH 846, Foundations of Applied Mathematics; MATH 853, Introduction to Numerical Methods; MATH 854, Introduction to Scientific Computing; MATH 856, Principles of Statistical Inference; MATH 888, Complex Analysis; MATH 931, MATH 932, Mathematical Physics; ME 881, Mathematical Methods in Engineering Science I; ME 982, Mathematical Methods in Engineering Science II; ME 876, Introduction to Finite Element Analysis; or ME 986 Advanced Finite Element Analysis

Four electives (two at 800 level; two at 900 level): CS 867, Interactive Data Visualization; ME 807, Analytical Fluid Dynamics; ME 809, Computational Fluid Dynamics; ME 886, Introduction to Finite Element Analysis; ME 909, Viscous Flow; ME 910, Turbulent Flow Analysis; ME 911, Theory of Hydrodynamic Stability; ME 827, Advanced Mechanics of Solids; ME 824, Introduction to Ocean Remote Sensing; NR 857, Photo Interpretation and Photogrammetry; NR 860, Geographic Information Systems in Natural Resources; OE 995, Graduate Special Topics; or OE 998, Independent Study. Students are also required to complete a master’s thesis for 6 credits. Other related courses may be taken with approval.
to Vibration; ME 823, Advanced Dynamics; ME 922, Continuum Mechanics; ME 924, Elasticity; ME 926, Plasticity; CIE 861, Foundation Engineering; CIE 862, Introduction to Geotechnical Earthquake Engineering; CIE 863, Geological Engineering; CIE 883, Matrix Structural Analysis and Modeling; CIE 942, River Mechanics; CIE 961, In situ Geotechnical Testing; ESCI 907, Geostatistics; ESCI 958, Dynamical Oceanography; ECE 814, Introduction to Digital Signal Processing; ECE 817, Introduction to Digital Image Processing; ECE 845, Acoustics; ECE 857, Fundamentals of Communication; ECE 860, Introduction to Fiber Optics; ECE 939, Statistical Communication Theory; ECE 940, Information Theory; ECE 941, Digital Signal Processing; ECE 955, Estimation and Filtering; ECE 965, Introduction to Pattern Recognition; or ECE 970, Introduction to Optical Signal Processing.

The general progress of a student through this program is expected to follow the time frame listed:

Year 1: Coursework, qualifier at the end of the year
Year 2: More coursework, thesis proposal presentation at the end of the year
Year 3: Research
Year 4: Research/thesis defense

Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE 810</td>
<td>Ocean Measurements Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>OE 844</td>
<td>Corrosion</td>
<td>4</td>
</tr>
<tr>
<td>OE 845</td>
<td>Environmental Acoustics II: Air and Water</td>
<td>4</td>
</tr>
<tr>
<td>OE 853</td>
<td>Ocean Hydrodynamics</td>
<td>3</td>
</tr>
<tr>
<td>OE 854</td>
<td>Ocean Waves and Tides</td>
<td>4</td>
</tr>
<tr>
<td>OE 856</td>
<td>Principles of Naval Architecture and Model Testing</td>
<td>4</td>
</tr>
<tr>
<td>OE 857</td>
<td>Coastal Engineering and Processes</td>
<td>3</td>
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<td>OE 867</td>
<td>Interactive Data Visualization</td>
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<tr>
<td>OE 870</td>
<td>Fundamentals of Ocean Mapping</td>
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<td>OE 871</td>
<td>Geodesy and Positioning for Ocean Mapping</td>
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</tr>
<tr>
<td>OE 885</td>
<td>Environmental Acoustics II: Air and Water</td>
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<tr>
<td>OE 895</td>
<td>Special Topics</td>
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<tr>
<td>OE 899</td>
<td>Master's Thesis</td>
<td>1-6</td>
</tr>
<tr>
<td>OE 954</td>
<td>Ocean Waves and Tides II</td>
<td>4</td>
</tr>
<tr>
<td>OE 972</td>
<td>Hydrographic Field Course</td>
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<td>OE 973</td>
<td>Seafloor Characterization</td>
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<td>OE 990</td>
<td>Ocean Seminars I</td>
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<td>OE 991</td>
<td>Ocean Seminars II</td>
<td>1</td>
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<td>OE 995</td>
<td>Graduate Special Topics 2</td>
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<tr>
<td>OE 998</td>
<td>Independent Study</td>
<td>1-4</td>
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</table>

Ph.D. Degree Requirements

The courses required for a Ph.D. degree in physics include PHYS 805, 931, 939, 941, and 943. Students in the M.S. program are not required to take the Ph.D. comprehensive examination. Students may select one of the following plans: complete 30 semester hours of courses chosen in consultation with the graduate adviser, or complete 24 semester hours of courses chosen in consultation with the graduate adviser, complete a thesis representing the equivalent of six semester hours' work, and pass an oral examination on the thesis.

Ph.D. Degree Requirements

The courses required for a doctor of philosophy degree in physics include PHYS 805, 931, 935, 939, 941-942, and 943-944, and any additional four courses at the 900 level, excluding 999. With appropriate additional work, a student may petition to receive credit for two of the following courses: PHYS 808, 810, 812, 818, 820, 864, and courses from other departments.
For students doing Ph.D. research in astrophysics or space physics, two of their four elective courses must be PHYS 951 and PHYS 940. These students must also take either 810 or 812. These special requirements are currently under revision and students who are interested in astrophysics or space physics research should consult the physics department Web site for the actual required course sequences.

Admission to candidacy for the degree is based primarily on demonstrated ability in formal coursework; experience in teaching, equivalent to at least half time for one year; passing a written comprehensive examination; and passing an oral defense of a proposed thesis topic. The comprehensive examination is normally taken during the first year and must be passed by the middle of the second year. Upon completion of a dissertation, doctoral candidates will take an oral examination based on the area of their research.

Interdisciplinary Research

The department encourages research in areas related to physics or applied physics. If students desire to do research in a field related to physics, special provisions may be made. Contact the department chairperson or graduate adviser for details.

Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>PHYS 805</td>
<td>Experimental Physics</td>
<td>4</td>
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<tr>
<td>PHYS 806</td>
<td>Introduction to Physics Research</td>
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<tr>
<td>PHYS 808</td>
<td>Optics</td>
<td>4</td>
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<tr>
<td>PHYS 810</td>
<td>Introduction to Astrophysics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 811</td>
<td>Topics in Modern Physics</td>
<td>1 T O 4</td>
</tr>
<tr>
<td>PHYS 812</td>
<td>Introduction to Space Plasma Physics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 818</td>
<td>Introduction to Solid-State Physics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 820</td>
<td>Nuclear Physics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 864</td>
<td>General Relativity and Cosmology</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 895</td>
<td>Independent Study</td>
<td>1 T O 8</td>
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<td>PHYS 899</td>
<td>Master's Thesis</td>
<td>1 T O 6</td>
</tr>
<tr>
<td>PHYS 900</td>
<td>Introduction to Physics Research and Teaching I</td>
<td>1</td>
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<tr>
<td>PHYS 901</td>
<td>Introduction to Physics Research and Teaching II</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 902</td>
<td>Issues in Teaching and Learning Physics</td>
<td>1 T O 3</td>
</tr>
<tr>
<td>PHYS 931</td>
<td>Mathematical Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 935</td>
<td>Statistical Physics</td>
<td>3</td>
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<tr>
<td>PHYS 939</td>
<td>Classical Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 941</td>
<td>Electromagnetic Theory I</td>
<td>3</td>
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<tr>
<td>PHYS 942</td>
<td>Electromagnetic Theory II</td>
<td>3</td>
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<tr>
<td>PHYS 943</td>
<td>Quantum Mechanics I</td>
<td>3</td>
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<tr>
<td>PHYS 944</td>
<td>Quantum Mechanics II</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 951</td>
<td>Plasma Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 954</td>
<td>Heliospheric Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 961</td>
<td>Advanced Quantum Mechanics I</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 962</td>
<td>Advanced Quantum Mechanics II</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 965</td>
<td>Advanced Solid-State Physics</td>
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<table>
<thead>
<tr>
<th>Course</th>
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<tr>
<td>PHYS 987</td>
<td>Magnetoospheres</td>
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</tr>
<tr>
<td>PHYS 995</td>
<td>Special Topics</td>
<td>1 T O 3</td>
</tr>
<tr>
<td>PHYS 999</td>
<td>Doctoral Research</td>
<td>0</td>
</tr>
</tbody>
</table>

Plant Biology (PBIO)

www.pbio.unh.edu

Degrees Offered: M.S., Ph.D.

The Department of Biological Science offers the master of science and doctor of philosophy degrees in plant biology. Research opportunities are available in basic and applied areas of plant biology, including breeding and genetics, cell biology, cell and tissue culture, ecology, molecular biology, genetic engineering, marine and freshwater biology, morphology and anatomy, pathology, physiology, physiology, systematic botany, crop production, and environmental horticulture.

Admission Requirements

Applicants are expected to have adequate preparation in plant biology and in the physical sciences. They must submit current scores (within five years) from the general test of the GRE.

M.S. Degree Requirements

Students will meet the Graduate School’s requirements for the degree (minimum of 30 credits). Students will be required to write and defend a thesis (6 & #8211; 10 credits) based on field or laboratory research.

Ph.D. Degree Requirements

Students will complete a program of study as determined by their guidance committee. Students will be advanced to candidacy after successfully completing comprehensive written and oral qualifying examinations. Candidates must successfully defend a dissertation based on original research in plant biology. For some program areas, a foreign language may be required at the discretion of the student’s guidance committee.

Teaching Requirements

Teaching experience is required of all M.S. and Ph.D. degree students. The requirement may be fulfilled by enrolling in a supervised teaching course, by serving as a teaching assistant, or by having previous professional teaching experience.

Political Science (POLT)

www.unh.edu/political-science/

Degrees Offered: M.A., M.P.A.

The Department of Political Science at UNH offers two graduate degrees: the Master of Arts in Political Science and the Master of Public Administration. Both provide advanced study in political science, public policy, and public administration for students interested in professions in the fields of government, public service, nonprofit management, electoral politics, education and research, or as preparation for Ph.D. programs. Our degree programs give students the flexibility to tailor their coursework to individual interests within a curriculum that ensures a strong foundation in research methodology, management, and other needed skills in the professions. Our faculty engage in teaching and research activities encompassing the fields of American politics, political thought, comparative/international politics, and public administration.

Both programs are offered to full- and part-time students. The M.A. program is offered in Durham. The M.P.A. program offers
evening courses for working professionals at Durham and Manchester.

Admission Requirements
Applicants are expected to have majored in political science or a related field, or have worked in government or the nonprofit sector and must possess a bachelor's degree from an accredited institution. Where undergraduate preparation has been insufficient, applicants may be admitted provided that they follow a program of study approved by the chairperson. The GRE general test is required for the M.A. M.P.A. applicants are strongly encouraged to include GRE test results with their application, but it is required only for those M.P.A. applicants requesting consideration for graduate assistant or tuition assistance awards.

Degree Requirements

M.A. with Thesis Option Degree
Master's degree students must complete a minimum of 33 credits for the degree: ten courses and a comprehensive exam. Of the ten courses, two are required (POL 801: Courts and Public Policy and POLT 900: Introduction to Statistical Analysis). The remaining eight courses are electives totaling 9 credits. They must include two courses in the student's major subfield (Comparative Politics, International Politics, Political Thought/Theory, and American Politics/Public Administration). One course in a minor subfield is also required for this degree option. Fifteen credits must be completed at the 800 or 900 level from political science courses or a related discipline. The M.A. program director or the student's adviser must provide approval if the course selected is a not a political science course.

The comprehensive examination must be successfully completed in the student's final semester.

M.P.A. Degree Requirements
Master of public administration students must complete a minimum of 36 or 39 credits for the degree. Required courses include:

* Four basic core curriculum courses in foundations and theory, organization and management, statistical analysis, and the Capstone internship or project (POL 801: Courts and Public Policy, 905, 906, 907/908F, 909, and the 908 Capstone). 12-15 credits
* Three advanced core curriculum courses in finance and budgeting, human resources, labor relations, public or nonprofit management, administrative law, policy and program evaluation, leadership, or legal and policy-making environments (POLT 804, 808, 812, 897/898F, 907, 911, 912, 914, 915). 9 credits
* Electives in public administration, political science, or related discipline with adviser's approval. 15 credits
* Two of the five required electives will be waived for students who have successfully completed Level II of the New Hampshire Certified Public Manager Program.

The Capstone internship or project is the culmination of the student's graduate work, applying academic knowledge with practical experience. Students without prior public or nonprofit sector professional experience are required to complete the internship component of the Capstone.

Courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLT 801: Courts and Public Policy</td>
<td>3</td>
</tr>
<tr>
<td>POLT 804: Policy and Program Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>POLT 806: State and Local Government</td>
<td>3</td>
</tr>
<tr>
<td>POLT 807: Criminal Justice Administration</td>
<td>3</td>
</tr>
<tr>
<td>POLT 808: Administrative Law</td>
<td>3</td>
</tr>
<tr>
<td>POLT 811: Public Opinion and Survey Research</td>
<td>3</td>
</tr>
<tr>
<td>POLT 812: Leadership Theory and Practice</td>
<td>3</td>
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<tr>
<td>POLT 815: Art of Negotiation</td>
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<tr>
<td>POLT 818: Special Topics - Public Administration</td>
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<tr>
<td>POLT 821: Feminist Political Theory</td>
<td>3</td>
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<tr>
<td>POLT 825: Politics and Literature</td>
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<tr>
<td>POLT 843: Comparative Political Economy</td>
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<tr>
<td>POLT 850: Politics of Poverty</td>
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</tr>
<tr>
<td>POLT 851: Comparative Environmental Politics and Policy</td>
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<tr>
<td>POLT 860: Theories of International Relations</td>
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<td>POLT 862: International Political Economy</td>
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<td>POLT 878: International Organization</td>
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<td>POLT 880: International Environmental Politics, Policy and Law</td>
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<td>POLT 897B: Seminar in American Politics</td>
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<td>POLT 897C: Seminar in Comparative Politics</td>
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<td>POLT 897E: Seminar in International Politics</td>
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<tr>
<td>POLT 897F: Seminar in Public Administration</td>
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<tr>
<td>POLT 897I: Seminar in Political Thought</td>
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<td>POLT 899I: Seminar in Political Thought</td>
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<td>POLT 899: Master's Thesis</td>
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<tr>
<td>POLT 900: Political Science Pro-Seminar</td>
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</tr>
</tbody>
</table>

Areas in which the student may specialize are brain, behavior, and cognition; developmental psychology; or social psychological personality. The department does not offer training in clinical or counseling psychology.

Distinctive Features of the Program
All psychology graduate students in the Ph.D. program receive a stipend and a full tuition waiver for up to five years. A low graduate student/faculty ratio provides opportunities to work closely with one or more faculty mentors. Graduates typically acquire tenure-track academic or postdoctoral positions at colleges and universities across the U.S.

The Department of Psychology is a national model for preparing future faculty. All graduate students teach Introduction to Psychology while taking a yearlong seminar in the teaching of psychology, as well as one or two undergraduate survey courses in statistics and/or in the student’s area of specialization. In addition, through a partnership with the University’s Preparing Future Faculty program, students may simultaneously earn a master of science for teachers or a Cognate degree in an area of specialization. Although some students seek employment outside academia, the program is oriented toward developing the skills required by the research psychologist who intends to become a college or university teacher.

There are active research laboratories in all areas represented in the graduate program. The department has strong partnerships with such nationally recognized programs as UNH’s Child Study and Development Center and the Family Research Laboratory. UNH also has a Center for Teaching Excellence to help graduate students and faculty improve the quality of their teaching.

Psychology (PSYC)

www.unh.edu/psychology/

Degree Offered: Ph.D.
Department of Psychology offers a four- or five-year program of study leading to the doctor of philosophy degree. The basic goal of the program is the development of behavioral scientists who have a broad knowledge of psychology, can teach and communicate effectively, and can carry out sound research in an area of specialization. Although some students seek employment outside academia, the program is oriented toward developing the skills required by the research psychologist who intends to become a college or university teacher.

www.unh.edu/psychology/
Admission Requirements

In addition to meeting the requirements for admission to the Graduate School, applicants must intend to be full-time students working toward the doctoral degree (not just the master’s degree), and they must submit Graduate Record Examination general test scores, along with other standard application forms. The subject test in psychology is recommended. Scores must be current, within five years.

Degree Requirements

Ph.D. Degree Requirements

Required courses include first-year seminar (PSYC 904), three semesters of research methods and statistics (PSYC 905, 906, & 907 or 908), six advanced graduate seminars, and two semesters of the practicum and seminar in the teaching of psychology (PSYC 991-992). First-year students also participate in a noncredit graduate proseminar (PSYC 901-902), which introduces students to the research programs of the faculty. Depth in a particular area is obtained through participation in advanced seminars and by independent reading and research conducted under the supervision of a faculty member.

Prior to the doctoral dissertation, the student carries out original research that culminates in either a master’s thesis or a paper of publishable quality. A master’s degree is awarded upon the successful completion of a program approved by the department and dean of the Graduate School. This typically takes place by the end of the second year.

The third year of the program is dedicated to the practicum and seminar in the teaching of psychology in conjunction with the teaching of introductory psychology.

Advancement to candidacy for the Ph.D. degree depends on receiving the master’s degree, passing a specialist examination in one of the department’s areas of specialization, and identifying a topic for doctoral research. Advancement to candidacy is usually accomplished by the end of a student’s fourth year in the program. During the fourth year, students typically begin dissertation research and teach an introductory course in their specialty area. Most students complete the Ph.D. degree in the fifth year.

Courses

<table>
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<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>PSYC 894</td>
<td>Advanced Research</td>
<td>4 OR 8</td>
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<tr>
<td>PSYC 899</td>
<td>Master’s Thesis</td>
<td>4 OR 8</td>
</tr>
<tr>
<td>PSYC 901</td>
<td>Graduate Pro-seminar</td>
<td>0</td>
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</table>

Admission Requirements

Applicants are expected to have majored in political science or a related field, or have worked in government or the nonprofit sector and must possess a bachelor's degree from an accredited institution. Where undergraduate preparation has been insufficient, applicants may be admitted provided that they follow a program of study approved by the chairperson. The GRE general test is required for the M.A. M.P.A. applicants are strongly encouraged to include GRE test results with their application, but it is required only for those M.P.A. applicants requesting consideration for graduate assistant or tuition assistance awards.

Degree Requirements

M.A. with Thesis Option Degree

Masters students must complete a minimum of 30 credits for the degree: eight courses and a 6 credit master’s thesis. Of the eight courses, two are required seminars and an Introduction to Statistical Analysis (POLT 905) to be taken during the student’s first semester. There are required electives totaling 9 credits. They must include two courses in the student’s major subfield (Comparative Politics, International Politics, Political Thought/Theory, and American Politics/Public Administration).

Nine credits must be completed at the 800 or 900 level from political science courses or related discipline courses. The M.A. program director or the student’s adviser must provide approval if the course selected is a not a political science course.

Successful completion of a 6 credit master’s thesis is required.

M.A. without Thesis Option Degree

Master’s degree students must complete a minimum of 33 credits for the degree: ten courses and a dissertation. Of the ten courses, two are required seminars and an Introduction to Statistical Analysis (POLT 905) to be taken during the student’s first semester. There are required electives totaling 9 credits. They must include two courses in the student’s major subfield (Comparative Politics, International Politics, Political Thought/Theory, and American Politics/Public Administration). One course in a minor subfield is also required for this degree option.

Public Administration (POLT)

www.unh.edu/political-science/

Degrees Offered: M.A., M.P.A.

The Department of Political Science at UNH offers two graduate degrees: the Master of Arts in Political Science and the Master of Public Administration. Both provide advanced study in political science, public policy, and public administration for students interested in professions in the fields of government, public service, nonprofit management, electoral politics, education and research, or as preparation for Ph.D. programs. Our degree programs give students the flexibility to tailor their coursework to individual interests within a curriculum that ensures a strong foundation in research methodology, management, and other needed skills in the professions. Our faculty engage in teaching and research activities encompassing the fields of American politics, political thought, comparative/international politics, and public administration.

Both programs are offered to full- and part-time students. The M.A. program is offered in Durham. The M.P.A. program offers evening courses for working professionals at Durham and Manchester.
Fifteen credits must be completed at the 800 or 900 level from political science courses or a related discipline. The M.A. program director or the student’s adviser must provide approval if the course selected is not a political science course.

The comprehensive examination must be successfully completed in the student’s final semester.

M.P.A. Degree Requirements

Master of public administration students must complete a minimum of 36 or 39 credits for the degree. Required courses include:

- Four basic core curriculum courses in foundations and theory, organization and management, statistical analysis, and the Capstone internship or project (POLT 905, 906, 909, and the 908 Capstone). 12-15 credits
- Three advanced core curriculum courses in finance and budgeting, human resources, labor relations, public or nonprofit management, administrative law, policy and program evaluation, leadership, or legal and policy-making environments (POLT 804, 808, 812, 897/898F, 907, 911, 912 914, 915). 9 credits

Electives in public administration, political science, or related discipline with adviser’s approval. 15 credits Two of the five required electives will be waived for students who have successfully completed Level II of the New Hampshire Certified Public Manager Program.

The Capstone internship or project is the culmination of the student’s graduate work, applying academic knowledge with practical experience. Students without prior public or nonprofit sector professional experience are required to complete the internship component of the Capstone.

Public Health (PHP)

www.unh.edu/hmp/

Degree Offered: M.P.H., Public Health Certificate

The College of Health and Human Services offers an interdisciplinary curriculum leading to the Master of Public Health (M.P.H.) or a Public Health Certificate. The program is designed to provide students with an integrated, generalist M.P.H. degree. The M.P.H. program is accredited by the Council on Education for Public Health (CEPH).

The Master of Public Health and Public Health Certificate seek to enhance the capacity of working public health professionals to perform the 10 essential services of public health. The program is only offered at the University of New Hampshire Manchester campus through the Center for Graduate and Professional Studies. Academic classes are offered in semester units and each course is eight weeks in length and offered one evening per week for four hours. Working professionals can complete the M.P.H. program on a part-time basis over two years but have up to six years to complete the degree requirements.

Admission Requirements

(No note that since these are part-time programs, international applicants are not eligible to apply)

Admissions are done through the UNH Graduate School for both fall and spring semesters. The program encourages applications from persons who hold a baccalaureate degree from an accredited college or university. The Admission Committee uses previous academic records, current public health experience, responses to five essay questions regarding your interest in pursuing graduate education in public health, and recommendations from three individuals as indicators of success. While we do not require GRE scores, we do encourage those who have taken the GRE to submit their scores. Interviews with the Program Director are encouraged.

To apply for the M.P.H. degree, applicants must submit:

1. A completed UNH Graduate School Application Form
2. Responses to five essay questions regarding your public health interests, goals, and beliefs
3. Official transcripts from previous undergraduate and graduate education
4. Current résumé;
5. Three letters of recommendation

Degree Requirements

M.P.H. Degree Requirements

The M.P.H. program is a 48-credit curriculum. In addition to the five core courses found in every public health program (public health care systems (PHP 900), epidemiology (PHP 901), environmental health (PHP 902), biostatistics (PHP 903), and social and behavioral health (PHP 904)) the program requires that all students complete four additional courses: administration (PHP 905), finance and budgeting (PHP 906), policy (PHP 907), and ethics (PHP 908). Students must also complete five elective courses. Elective courses in public health policy and management and public health ecology are offered. The M.P.H. curriculum includes a
field experience in which the student is expected to apply theory and practice of public health to a particular area of student interest in a professional setting. The final course in the curriculum is an integrating seminar in which the students work in teams, bringing both their individual and joint perspectives and expertise, to address a particular public health problem for a New Hampshire-based public health entity.

Grades below the “B-” level in a graded course are considered failing grades for the purposes of determining academic standing. Repeating a course does not remove the original failing grade from the record. Students receiving failing grades in six or more credits either in two courses or in one course taken twice will be recommended by the M.P.H. Program Director to the Graduate School for dismissal from the M.P.H. or the Public Health Certificate program. Students must have a cumulative grade-point average of 3.0 (B-), or higher, in order to graduate. Students admitted on a conditional or provisional basis must meet the conditions or provisions as stated in the letter of admission in order to remain in the Graduate School.

Public Health Certificate
The Master of Public Health Program has recently started a continuing education program. Continuing education program offerings include an annual series of public health grand round lectures (launched in fall 2005) and a Public Health Certificate (launched in fall 2006).

The Public Health Certificate Program provides a vehicle for individuals working in public or community health positions, with no formal academic background in public health, the opportunity to earn a graduate degree in public health. To enter the Certificate Program, an applicant must have a baccalaureate degree.

Similar to the M.P.H. program, the Certificate Program is only offered at UNH Manchester campus through the Center for Graduate and Professional Studies. Classes are offered on weekday evenings.

Public Health Certificate Admissions Requirements
Admissions are done through the UNH Graduate School for both fall and spring semesters. Certificate program applicants must possess a baccalaureate degree from an accredited college or university. Students are expected to have experience in public health.

To apply for the certificate of public health, applicants must submit:

1. A completed UNH Graduate Certificate Program Application
2. Responses to five essay questions regarding your public health interests, goals, and beliefs
3. Official transcripts from previous undergraduate and graduate education
4. Current résumé;
5. Three letters of recommendation

Public Health Certificate Requirements
The Public Health Certificate is a 12-credit program that can be completed on a part-time basis over one calendar year. All courses (with the exception of workshops taken as part of PHP 996) must be taken at UNH. Students completing the Public Health Certificate program can apply to enter the M.P.H. program. If accepted, certificate credits can be applied to the M.P.H. program.

Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PHP 900</td>
<td>Public Health Care Systems</td>
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<tr>
<td>PHP 901</td>
<td>Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>PHP 902</td>
<td>Environmental Health</td>
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<tr>
<td>PHP 903</td>
<td>Biostatistics</td>
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<tr>
<td>PHP 904</td>
<td>Social and Behavioral Health</td>
<td>3</td>
</tr>
<tr>
<td>PHP 905</td>
<td>Public Health Administration</td>
<td>3</td>
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<tr>
<td>PHP 906</td>
<td>Public Health Finance and Budgeting</td>
<td>3</td>
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<tr>
<td>PHP 907</td>
<td>Public Health Policy</td>
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</tr>
<tr>
<td>PHP 908</td>
<td>Public Health Ethics</td>
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<tr>
<td>PHP 912</td>
<td>Public Health Law</td>
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<tr>
<td>PHP 914</td>
<td>Public Health Policy Analysis</td>
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</tr>
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<td>PHP 920</td>
<td>Social Marketing</td>
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<td>PHP 922</td>
<td>Public Health Economics</td>
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<td>PHP 924</td>
<td>Policy and Practice of Community Health Assessment</td>
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<tr>
<td>PHP 926</td>
<td>Evaluation in Public Health</td>
<td>3</td>
</tr>
<tr>
<td>PHP 928</td>
<td>Principles of Toxicology</td>
<td>3</td>
</tr>
<tr>
<td>PHP 930</td>
<td>Climate Change and Health</td>
<td>3</td>
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<td>PHP 932</td>
<td>Disease Ecology</td>
<td>3</td>
</tr>
<tr>
<td>PHP 934</td>
<td>Work Environment Policy and the Health of Workers</td>
<td>3</td>
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<td>PHP 950</td>
<td>Seminar in Epidemiologic Study Design</td>
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<td>PHP 960</td>
<td>Nutritional Epidemiology</td>
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<td>PHP 964</td>
<td>Applied Epidemiology</td>
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<tr>
<td>PHP 966</td>
<td>Health Information Systems and Technology</td>
<td>3</td>
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<tr>
<td>PHP 985A</td>
<td>Special Topics in Policy and Management 1 T O 3</td>
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</tr>
<tr>
<td>PHP 985B</td>
<td>Special Topics in Public Health Ecology 1 T O 3</td>
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<td>PHP 985C</td>
<td>Special Topics in Public Health Nursing 1 T O 3</td>
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<tr>
<td>PHP 990</td>
<td>Field Study</td>
<td>3</td>
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<tr>
<td>PHP 992</td>
<td>Applied Topics in the Essentials of Public Health</td>
<td>3</td>
</tr>
<tr>
<td>PHP 995</td>
<td>Independent Study</td>
<td>1 T O 3</td>
</tr>
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</table>

Recreation Management and Policy (RMP)

www.unh.edu/rmp/index.shtml

Degree Offered: M.S.
The Department of Recreation Management and Policy offers the master of science degree in recreation administration or therapeutic recreation administration. The Department of Recreation Management and Policy is accredited by the American Alliance of Leisure and Recreation/National Recreation and Park Association (AALR/NRPA) Council on Accreditation. An atmosphere of collegiality and collaboration fosters interactions between faculty and students. Faculty and students are actively engaged in applied research.

Admission Requirements
Admission is based on a personal history that demonstrates academic achievement and/or exemplary work experience, as well as the applicant’s ability to articulate in the personal statement his or her potential and desire for graduate study in recreation administration or therapeutic recreation administration. Generally, students must have earned a minimum grade-point average of 3.00 to be considered for admission. Applicants are required to submit copies of prior academic records, current scores (within five years) from the general test of the GRE, three references, a written personal statement, and a complete Graduate School application. A baccalaureate degree must be conferred prior to beginning the program. Interviews are encouraged but not required for all applicants. Students who wish to apply for a graduate assistantship should contact the department’s graduate coordinator for an application. Admission to the program is selective and limited, so it is in the applicant’s best interest to apply early.

Degree Requirements

Recreation Administration Option
The recreation administration option prepares professionals with advanced knowledge and skills to plan and administer recreation services. Positions in the field of recreation administration are diverse and numerous.
Examples of postgraduate opportunities include directors of town and municipal recreation departments, YMCA’s, resort programs, camps, campus/intramural sports, fitness centers, youth services agencies, and sports and recreation facilities as well as outdoor recreation planners for the U.S. Forest Service, National Park Service, and state park systems.

**Therapeutic Recreation Administration Option**

The therapeutic recreation administration option prepares advanced personnel for administrative responsibilities in community-based practice and administrative leadership in community-based recreation services that meet the needs of individuals with disabilities. Graduate education serves therapeutic recreation specialists who wish to move into administrative positions such as recreation therapy supervisor/manager/director, senior therapist, treatment coordinator, assisted-living manager, and senior center supervisor.

Students without an academic or clinical background in therapeutic recreation may use the M.S. program to satisfy the academic requirements for the national credentialing examination used by the National Council on Therapeutic Recreation Certification (NCTRC). While the graduate program does not require prerequisite courses to qualify for admission, the credentialing examination does require coursework outside the M.S. curriculum requirements and the department may require leveling coursework upon acceptance to the M.S. program.

**Both Options**

In both options, students are required to complete 30 credits detailed in the following program outline. Individuals seeking a career change to recreation or therapeutic recreation administration with an undergraduate degree in a related field may be admitted to the Graduate School as a provisional student, with the expectation that they complete any required prerequisites prior to, or concurrent with, graduate courses. A specially designed curriculum is available to provisionally admitted students.

**Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>RMP 860</td>
<td>Community Sport Organizations:</td>
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</tr>
<tr>
<td></td>
<td>Administration and Development</td>
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<tr>
<td>RMP 870</td>
<td>Management and Design of Recreation and Park Facilities</td>
<td>3</td>
</tr>
<tr>
<td>RMP 872</td>
<td>Law and Public Policy in Leisure Services</td>
<td>3</td>
</tr>
<tr>
<td>RMP 875</td>
<td>Entrepreneurial and Commercial Recreation</td>
<td>3</td>
</tr>
<tr>
<td>RMP 897</td>
<td>Master’s Project</td>
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<td>RMP 899</td>
<td>Master’s Thesis</td>
<td>3</td>
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<tr>
<td>RMP 910</td>
<td>Conceptual Issues and Trends in Therapeutic Recreation</td>
<td>3</td>
</tr>
<tr>
<td>RMP 912</td>
<td>Non-Profit Administration and Leadership</td>
<td>3</td>
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<td>RMP 964</td>
<td>Graduate Internship</td>
<td>3</td>
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<tr>
<td>RMP 970</td>
<td>Teaching Practicum</td>
<td>3</td>
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<tr>
<td>RMP 980</td>
<td>Independent Study</td>
<td>1-10</td>
</tr>
<tr>
<td>RMP 995</td>
<td>Colloquium Seminar</td>
<td>3</td>
</tr>
<tr>
<td>RMP 998</td>
<td>Special Topics</td>
<td>2-10</td>
</tr>
</tbody>
</table>

**Resource Administration and Management (RAM)**

www.dred.unh.edu

**Degree Offered: M.S.**

The Department of Natural Resources and the Environment coordinates the interdisciplinary master of science degree program in resource administration and management. Students may specialize in management of publicly and privately owned natural resources or in administration of natural resource laws and policies.

**Admission Requirements**

Applicants are expected to have completed either an undergraduate degree in the field in which they plan to specialize or show adequate preparation in the basic support courses of the field. A minimum of one course in each of the areas of ecology or natural resources, intermediate microeconomics, and introductory statistics is required. Persons having professional experience in resource administration, management, or related areas receive priority for admittance to the program. An applicant is required to submit an essay of up to 2,000 words describing his or her background and goals.

Applicants with good undergraduate records who lack a background in a particular field may be admitted to a program, provided they are prepared to correct the deficiencies. Applicants must submit current scores (within five years) from the general test of the GRE.

**Degree Requirements**

**M.S. Degree Requirements**

The master of science degree in resource administration and management is conferred upon successful completion of a program amounting to not less than 34 credits including the following course requirements or equivalent: NR 903, Approach to Research, 3 cr.; quantitative methods or analytical techniques, 3-4 cr.; RAM 911, Natural and Environmental Resource Management, 4 cr.; advanced course in environmental policy, 3-4 cr.; and RAM 898, Directed Research, 4-6 cr., or RAM 899, Thesis, 6-10 cr.; and a final oral and/or written examination.

**Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAM 805</td>
<td>Ecotourism: Managing for the Environment</td>
<td>4</td>
</tr>
<tr>
<td>RAM 820</td>
<td>Community-Based Natural Resource Management: Lessons from the Field</td>
<td>3</td>
</tr>
<tr>
<td>RAM 867</td>
<td>Social Impact Assessment</td>
<td>4</td>
</tr>
<tr>
<td>RAM 877</td>
<td>Topics in Community Planning</td>
<td>4</td>
</tr>
<tr>
<td>RAM 896</td>
<td>Investigations</td>
<td>2-10</td>
</tr>
<tr>
<td>RAM 898</td>
<td>Directed Research</td>
<td>4-10</td>
</tr>
<tr>
<td>RAM 899</td>
<td>Master’s Thesis</td>
<td>1-10</td>
</tr>
<tr>
<td>RAM 900</td>
<td>Resource Administration and Management Internship</td>
<td>4</td>
</tr>
<tr>
<td>RAM 911</td>
<td>Natural and Environmental Resource Management</td>
<td>4</td>
</tr>
<tr>
<td>RAM 993</td>
<td>Natural and Environmental Resource Seminars</td>
<td>2</td>
</tr>
</tbody>
</table>

**Resource Economics (RECO)**

www.dred.unh.edu

**Degree Offered: M.S.**

The Department of Natural Resources and the Environment offers the master of science degree in resource economics with specializations in agricultural economics, community and regional economics, land economics, water economics, and environmental economics.

**Admission Requirements**

Applicants are expected to have completed either an undergraduate degree in the field in which they plan to specialize or show adequate preparation in the basic support courses of the field. Four or more undergraduate courses in economics or resource economics, including intermediate microeconomics and intermediate macroeconomics, are required, as well as calculus and statistics. Applicants with good undergraduate records who lack background in a particular field may be admitted to a program, provided they are pre-
pared to correct the deficiencies. Applicants must submit current scores (within five years) from the general test of the GRE.

**Degree Requirements**

**M.S. Degree Requirements**

The master of science degree in resource economics is conferred upon successful completion of a program amounting to not less than 30 credits including the following course requirements or equivalent: RECO 993, Seminar, 1 cr.; NR 903 or equivalent, Approach to Research; ECON 926, Econometrics I, or ECON 927, Econometrics II; RECO 808, Environmental Economics, or RECO 856, Rural and Regional Economic Development; RECO 815, Linear Programming and Quantitative Models; ECON 976, Microeconomics I, or equivalent; and RECO 898, Directed Research, 2-4 cr., or RECO 899, Thesis, 6-10 cr.; and a final oral and/or written examination.

**Courses**

RECO 800 Marketing Communications Research: Methodological Foundations 4
RECO 808 Environmental Economics 4
RECO 815 Linear Programming and Quantitative Models 4
RECO 856 Rural and Regional Economic Development 4
RECO 895 Investigations 2 to 4
RECO 898 Directed Research 4 to 6
RECO 899 Master’s Thesis 1 to 10
RECO 911 Natural and Environmental Resource Management 4
RECO 993 Natural and Environmental Resources Seminar 1

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**Social Work (SW)**

[www.unh.edu/social-work/](www.unh.edu/social-work/)

**Degree Offered: M.S.W.**

The Department of Social Work offers a master of social work (M.S.W.) degree. This program develops advanced professional knowledge and skill for persons interested in pursuing careers in the field of social work. The M.S.W. program is accredited by the Council on Social Work Education (CSWE). It requires two years of full-time study or three-to-four years of part-time study. The full-time program is available in Durham only; the part-time program is available in Durham or Manchester. The Manchester academic classes are delivered in a weekend model. All students complete a foundation-year course of study, and then elect a second-year concentration either in direct/clinical practice or community/administrative practice. Both concentrations require classroom work and two yearlong field internships. Field internship hours are typically completed during normal business hours. In addition, the Departments of Social Work and Kinesiology offer a dual degree program, which consists of a master in social work (M.S.W.), as well as a master of science (M.S.) in kinesiology with a concentration in outdoor education.

**Admission Requirements**

The department encourages applications from persons who hold a baccalaureate degree from an accredited college or university; have attained an overall grade-point average of “B” or better in undergraduate coursework; have completed courses in a broad range of liberal arts and science disciplines; have acceptable recommendations from three individuals, one of whom must be a member of an academic faculty; and have completed a personal statement of interest in pursuing graduate education in the field. Although not required, significant volunteer and/or work experience in the field is strongly recommended. Students who do not meet the liberal arts and science expectations may be asked to complete additional coursework prior to or during the first year of their enrollment in the program. Standardized graduate examinations are not required, but results of such tests may be submitted to supplement other admission materials.

Students applying for advanced standing must hold a B.A. from an accredited S.W./B.S.W. program with a minimum overall grade-point average of 3.2 (4.00 point scale). This coursework must have been completed within five years of the date of M.S.W. matriculation. Advanced-standing applicants must also submit a reference from a B.S.W. faculty member and the undergraduate field supervisor or field coordinator.

Students applying to the dual degree program must meet the application requirements for both the Departments of Social Work and Kinesiology. See kinesiology for their admission requirements.

The M.S.W. program concentrates on strengths and empowerment models that encourage individuals and families and communities and organizations to realize their full potential. The department supplies the students with a social and community systems context and promotes practice skills that are responsive to diversity issues. The program is housed in the newly renovated Pettee Hall with access to interview observation rooms and state-of-the-art classrooms and computer labs.

Financial aid opportunities in the department include grants for students interested in the child welfare field or in work with developmentally disabled children and their families. The department also offers graduate research assistantships to a few second year students. Graduates of the program are employed in a wide variety of social and human service agencies as direct practitioners and in managerial roles.

**Degree Requirements**

**M.S.W. Degree Requirements**

An M.S.W. candidate must complete 62 credit hours of 800- or 900-level courses including two, two-semester field internships, comprising a total of 1,100 hours in the field. Grades below the B- level in a graded course or a “fail” in a credit/fail course are considered failing grades for the purposes of determining academic standing. Repeating a course does not remove the original failing grade from the record. Graduate students receiving failing grades in 6 or more credits, received either in two courses or in one course taken twice, will be dismissed from the M.S.W. program.

Although a significant portion of the curriculum is required, students will be able to complete three elective courses. At least one of these must be taken from among Department of Social Work course offerings. Students select a second-year concentration in direct/clinical practice or community/administrative practice. Each concentration requires that three courses and the second-year field internship be completed in the student’s area of concentration.

Advance-standing students complete a minimum of 35 credits for graduation. This includes a 10-week summer practicum and seminar, which students must take prior to their advanced practice and field placement. Additional information may be obtained by contacting the coordinator of graduate admissions in the department office.

Dual degree students take classes simultaneously over the course of three years in both social work and kinesiology: outdoor education and complete a minimum of 77 credits for graduation. This includes two internships, one during their first year of study, and a second specialized internship during the
third year, which concentrates on the utilization and application of adventure therapy in an agency setting. Students are required to also complete either a master thesis or an advanced studies project during their third year of study which is supervised by faculty in kinesiology: outdoor education.

Sociology (SOC)

www.unh.edu/sociology/

Degrees Offered: M.A., Ph.D.

The Department of Sociology offers M.A. and Ph.D. degrees in sociology. The master’s degree program emphasizes theory and methodology. Students in the doctoral program are expected to select one major area for intensive study and examination. There are five major substantive areas for possible specialization: crime and conflict, family, social stratification, health and illness, and community and environment. Students may pursue specializations within or across the major areas of specialization or propose to the Graduate Committee other major areas of specialization that fall within the faculty’s competence.

Admission Requirements

In addition to meeting the general Graduate School requirements, applicants must submit current scores (within five years) from the general test of the GRE.

Undergraduate majors in other fields may be admitted. However, if the student’s undergraduate work has not included an introductory course in sociological theory, research methods and statistics, these courses must be taken, or equivalent knowledge demonstrated, in addition to the requirements outlined above.

All students entering the program must complete the M.A. before admission to the Ph.D. program. The department welcomes applicants who plan to continue for the Ph.D. as well as students planning for the M.A. only.

Degree Requirements

M.A. Degree Requirements

Students must complete at least 26 credit hours (seven courses) of graduate-level coursework in sociology, including the Proseminar in Sociology (900, 2 cr.), Sociological Theory I and II (911 and 912), Sociological Methods I, II, III, and IV (901, 902, 903, 904), four courses in a major area, and five elective courses. Students must pass written examinations in the major area of sociological specialization and in advanced theory and methodology, and write and defend the doctoral dissertation.

Ph.D. Degree Requirements

Students must complete a minimum of three years in residence, and take a minimum of sixteen courses in sociology (at least eight as seminars) other than thesis or dissertation research, including the Proseminar in Sociology (900, 2 cr.), Sociological Theory I and II (911 and 912), Sociological Methods I, II, III, and IV (901, 902, 903, 904), four courses in a major area, and five elective courses. Students must pass written examinations in the major area of sociological specialization and in advanced theory and methodology, and write and defend the doctoral dissertation.

Spanish (SPAN)

www.unh.edu/spanish/graduate.html

Degree Offered: M.A.

The program in Spanish in the Department of Languages, Literatures, and Cultures offers a master of arts degree in Spanish with courses in the following four areas: Medieval and Golden Age literature and culture, Mod-
ern Peninsular literature and culture, Latin American literature and culture, and Hispanic linguistics and foreign language pedagogy. The program also supports work in interdisciplinary Hispanic Cultural Studies.

Admission Requirements
Applicants shall have received a bachelor’s degree from an accredited institution with an undergraduate major in Spanish or its equivalent. GREs are not required.

Degree Requirements
To obtain the degree, the candidate must complete a minimum of 30 credits. To satisfy the course requirements, the candidate must successfully complete ten graduate courses, eight of which should be from the offerings of the Spanish program. Two of the ten courses can be taken in allied fields approved by the department. All candidates must take Spanish 901, a 3-credit course dealing with bibliography and methods of research. Preparation of a bibliographical essay in this course is the final requirement for graduation. Graduate assistants teaching in the department must take Spanish 903, a 3-credit course in applied linguistics. Both 901 and 903 count toward the 10 courses required to complete the degree.

Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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<tbody>
<tr>
<td>SPAN 833</td>
<td>History of the Spanish Language</td>
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<tr>
<td>SPAN 856</td>
<td>Modern Spanish Poetry</td>
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<td>SPAN 871</td>
<td>Latin American Drama</td>
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<tr>
<td>SPAN 872</td>
<td>Latin American Novel</td>
<td>3</td>
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<td>SPAN 874</td>
<td>Major Latin American Authors</td>
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</tr>
<tr>
<td>SPAN 881</td>
<td>Summer Study Abroad in Mexico</td>
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<td>SPAN 882</td>
<td>Summer Seminar for Spanish Teachers</td>
<td>3</td>
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<tr>
<td>SPAN 890</td>
<td>Grammatical Structure of Spanish</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 897</td>
<td>Special Studies in Spanish Language and Literature</td>
<td>3</td>
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<tr>
<td>SPAN 898</td>
<td>Special Studies in Spanish Language and Literature</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 901</td>
<td>Bibliography and Methods of Research</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 903</td>
<td>Applied Linguistics</td>
<td>3</td>
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<td>SPAN 995</td>
<td>Independent Study</td>
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<td>SPAN 997</td>
<td>Graduate Seminar</td>
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Systems Design (ENGR)

www.unh.edu/mechanical-engineering/

Degree Offered: Ph.D

Ph.D. Systems Design
The systems design doctoral degree is an interdepartmental program that addresses contemporary engineering and scientific problems that can be solved only through the cooperation of a variety of disciplines. Students in systems design can elect either one of two professional directions. The first develops professionals with the technical expertise of a Ph.D. and with the ability to work with and direct groups of people working on large-scale technical projects. The second direction develops engineers with capabilities in the theory and analysis of large-scale complex systems. Concentration in an area of specific individual interest is combined with participation in a larger interdisciplinary project.

The area coordinator is Professor Barry K. Fussell.

Admission Requirements
Qualified students with bachelor’s or master’s degrees in engineering, mathematics, or the physical sciences are eligible for admission to the program. Applicants must submit current scores (within five years) from the general test of the GRE. To be admitted, students must present evidence that they have sufficient background in the area in which they propose to specialize. They must also find a College of Engineering and Physical Sciences (CEPS) faculty member to serve as their adviser.

Degree Requirements
Following entrance into the program, a guidance committee is appointed for the student by the dean of the Graduate School upon recommendation of the student’s area coordinator. This committee assists students in outlining their program and may specify individual coursework requirements in addition to those required by the area of specialization. The committee also conducts an annual in-depth review of each student’s progress and, following substantial completion of a student’s coursework, administers the qualifying examination. This committee is also responsible for administering the language examination and/or research-tool proficiency requirements. Coursework and language requirements should normally be completed by the end of the second year of full-time graduate study and must be completed before the student can be advanced to candidacy.

Upon the successful completion of the qualifying examination and other proficiency requirements, the student is advanced to candidacy and, upon the recommendation of the student’s area coordinator, a doctoral committee is appointed by the dean of the Graduate School. The doctoral committee conducts an annual review of the student’s progress, supervises, and approves the doctoral dissertation, and administers the final dissertation defense.

To obtain a Ph.D. degree in engineering, a student must meet all of the general requirements as stated under academic regulations and degree requirements of the Graduate School. Students are normally expected to take coursework equivalent to two full-time academic years beyond the baccalaureate and to complete a dissertation on original research that will require at least one additional year of full-time study.

Courses

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Zoology (ZOOL)

zoology.unh.edu/

Degrees Offered: M.S., Ph.D.
The Department of Biological Sciences offers M.S. and Ph.D. degrees in zoology.

Admission Requirements
Applicants ordinarily must have completed an undergraduate major in biology or zoology. A basic array of courses including general biology, development, general ecology, genetics, morphology, and physiology is normally required. Additionally, organic chemistry and a semester each of calculus and physics are necessary. Applicants who are deficient in any of these requirements may be admitted to graduate status but may be required to remedy their deficiencies by taking courses that do not give graduate credit. Applicants must submit current scores (within five years) from the general test and subject biology scores from the Graduate Record Examination.
Degree Requirements

M.S. Degree Requirements
Students plan a program of study (minimum of 30 credits) in conjunction with a faculty advisory committee. Students complete a thesis of 6 to 10 credits that is acceptable to the thesis-examining committee. Prior to the receipt of the master's degree, all candidates must pass a thesis defense, which will include questions covering general knowledge in zoology in addition to specific questions relevant to the student’s research at UNH.

Ph.D. Degree Requirements
Students plan a program of study in conjunction with a faculty guidance committee. All doctoral students must demonstrate proficiency in one foreign language. The student will present to the committee a research proposal in which the soundness, originality, and feasibility of the investigative ideas are clearly revealed, and which, when approved, will serve as the basis of the doctoral dissertation. After the approval of the proposal, students who wish to be admitted to doctoral candidacy must demonstrate, in a qualifying examination, a broad basic knowledge of their major and minor fields and their ability to carry out basic research in zoology. All students must complete an original dissertation project, present the results at a public seminar, and pass an oral defense consisting of questions put forth by members of the dissertation committee.

Teaching Requirement
All graduate students are encouraged to obtain appropriate teaching experience, preferably as a teaching assistant.

Research and Facilities
The zoology graduate program is enhanced by courses and research in other biological science departments and institutes at the University. These include the Marine Program and its associated centers and programs, the Center for Marine Biology, the Center for Ocean Sciences, the Center for Ocean Engineering, N.H. Sea Grant Program, the Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET), the Center of Excellence in Coastal Ocean Observation and Analysis (COOA), the Institute for the Study of Earth, Oceans, and Space (EOS), UNH Center for Coastal and Ocean Mapping (CCOM), and the Joint Hydrographic Center, Ocean Processes Analysis Laboratory (OPAL), and the Atlantic Marine Aquaculture Center (AMAC). There are five marine laboratories: Jackson Estuarine Lab, Coastal Marine Lab, Anadromous Fish and Aquatic Invertebrate Research Lab (AFAIR), the Aquaculture Research Center (ARC) and Shoals Marine Lab.

In addition, the Center for Freshwater Biology (CFB) jointly administers (with the UNH Cooperative Extension) the Lakes Lay Monitoring Program, which is dedicated to the preservation and sound management of lakes through citizen-based monitoring and research. The Hubbard Center for Genomic Studies provides training and research in comparative and environmental genomics, with a special emphasis on novel model species. It provides expertise in constructing DNA libraries, DNA sequencing, fragment analysis, and the analysis of gene expression.

Courses

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</table>
Professor of Environmental Sciences, Affiliate Professor of Earth, Oceans, and Space; B.S., Yale University, 1971; M.F.S., Yale School of Forestry, 1973; Ph.D., Yale University, 1976

Abrams, Eleanor D. (1994)
Associate Professor of Education; B.S., University of Massachusetts at Amherst, 1983; Ph.D., Louisiana State University, 1993

Afolayan, Funso (1996)
Associate Professor of History; B.A., University of Ife, Nigeria, 1980; M.A., Obafemi Awolowo University, Nigeria, 1984; Ph.D., ibid., 1991

Aldeniz, Bilur (2009)
Assistant Professor of Marketing; B.A., Bosphorus University, 2002; M.B.A., ibid., 2004; Ph.D., Michigan State University, 2009

Alexander, Lee (2000)
Research Associate Professor of Marine Sciences; B.S., Marietta College, 1968; M.S., University of New Hampshire, 1980; Ph.D., Yale University, 1986

Aliouche, E. Hachemi (2007)
Associate Professor of Hospitality Management; B.S., University of New Hampshire, 1980; M.A., ibid., 1982; Ph.D., ibid., 1992

Associate Professor of Materials Science; B.A., Harvard University, 1988; Ph.D., Rensselaer Polytechnic Institute, 1993

Annicchiarico, Michael J. (1991)
Associate Professor of Music; B.M., University of New Hampshire, 1976; M.F.A., Brandeis University, 1981; Ph.D., ibid., 1993

Arriazi, Pablo (2009)
Assistant Professor of Social Work; B.A., B.S., Florida State University, 1990; M.S.W., ibid., 1992; Ph.D., University of Alabama, 2009

Arrington, Barbara (2007)
Professor of Health Management and Policy; B.S., Columbia University, 1970; M.P.H., University of Missouri at Columbia, 1976; Ph.D., St. Louis University, 1985

Arthanat, Sajay (2007)
Assistant Professor of Occupational Therapy; B.Sc., India Medical University, 1997; Advanced Certificate in Assistive Technology, State University of New York at Buffalo, 2004; Ph.D., ibid., 2007

Babbitt, Kimberly J. (1996)
Professor of Wildlife Ecology and Natural Resources; B.S., University of New Hampshire, 1984; M.S., Texas A & M University, 1988; Ph.D., University of Florida, 1996

Bachrach, David (2003)
Associate Professor of History; B.A., Carleton College, 1994; M.A., University of Notre Dame, 1997; Ph.D., ibid., 2001

Bailey, Brigitte Gabcke (1987)
Associate Professor of English; B.A., University of Virginia, 1977; A.M., Harvard University, 1980; Ph.D., ibid., 1985

Baker, Alan L. (1972)
Associate Professor of Biology and Plant Biology; B.A., State University of New York at Binghamton, 1965; Ph.D., University of Minnesota, 1973

Baldwin, Kenneth C. (1982)
Professor of Mechanical Engineering and Ocean Engineering and Marine Sciences; B.S.M.E., Northeastern University, 1973; M.S.M.E., University of New Hampshire, 1977; Ph.D., University of Rhode Island, 1982

Ballestero, Thomas P. (1983)
Associate Professor of Civil Engineering; B.S.C.E., Pennsylvania State University, 1975; M.S.C.E., ibid., 1977; Ph.D., Colorado State University, 1981

Balling, L. Christian (1967)
Professor of Physics; B.A., Oberlin College, 1960; M.A., Harvard University, 1961; Ph.D., ibid., 1965

Banach, Mary (1995)
Associate Professor of Social Work; B.A., University of Wisconsin at Milwaukee, 1975; M.S.W., New York University, 1978; D.S.W., Columbia University, 1995

Professor of Psychology; B.A., Brown University, 1988; M.A., University of Michigan at Ann Arbor, 1990; Ph.D., ibid., 1994

Barber, Heather (1993)
Associate Professor of Kinesiology; B.S., St. Lawrence University, 1978; M.S., Pennsylvania State University, 1982; Ph.D., University of Oregon, 1992

Barber, Nelson A. (2009)
Associate Professor of Hospitality Management; B.S., San Jose State University, 1978; M.S., Purdue University, 2005; Ph.D., Texas Tech University, 2008

Professor of Chemical Engineering and Environmental Engineering; B.A., Clark University, 1979; M.S., University of Cincinnati, 1982; Ph.D., University of California at Berkeley, 1987

Associate Professor of Management and Business Administration; B.A., University of Michigan at Ann Arbor, 1989; M.A., ibid., 1992; Ph.D., ibid., 1994

Professor of Hospitality Management; B.S., University of Massachusetts at Amherst, 1982; M.S., ibid., 1987; Ed.D., ibid., 1990

Bartos, Radim (1997)
Associate Professor of Computer Science; M.S., Czech Technical University, 1987; M.S., University of Denver, 1996; Ph.D., ibid., 1997

Basterra, Maria (2001)
Associate Professor of Mathematics and Statistics; B.S., University of Texas at Austin, 1992; M.S., University of Chicago, 1993; Ph.D., ibid., 1998

Bauer, Christopher F. (1981)
Professor of Chemistry; B.S., University of Notre Dame, 1974; M.S., University of Illinois at Urbana-Champaign, 1976; Ph.D., Colorado State University, 1979

Associate Professor of Economics; B.A., Drew University, 1996; M.A., Syracuse University, 1999; Ph.D., ibid., 2001

Associate Professor of Physics; B.A., Lafayette College, 1988; Ph.D., University of Texas at Austin, 1994

Becker, Mimi Larsen (1993)
Associate Professor of Community and Environmental Planning and Environmental Conservation Studies and Environmental Sciences and Marine Sciences; B.A., Carleton College, 1957; M.A., Duke University, 1989; Ph.D., ibid., 1996

Bedker, Patricia D. (1985)
Associate Professor of Animal Sciences; B.S., University of Massachusetts at Amherst, 1974; M.S., University of New Hampshire, 1980; Ph.D., Cornell University, 1985

Beemer, Cristy (2008)
Associate Professor of English; B.A., Hofstra University, 1993; B.A., State University of New York at New Paltz, 2000; M.A., ibid., 2002; Ph.D., Miami University, 2008

Bell, Brent J. (2005)
Assistant Professor of Kinesiology; B.A., University of New Hampshire, 1989; M.S., New England College, 1996; Ph.D., University of New Hampshire, 2005

Assistant Professor of Civil Engineering; B.S.C.E., Georgia Institute of Technology, 1996; M.S., Tufts University, 1998; Ph.D., ibid., 2003

Beller-McKenna, Daniel (1998)
Associate Professor of Music; B.A., Temple University, 1985; M.M., ibid., 1988; M.A., Harvard University, 1991; Ph.D., ibid., 1994

Professor of Psychology; B.S., California State College, 1969; M.A., Queens College, City University of New York, 1973; Ph.D., City College of New York, 1974
Berglund, Per (1983)
Professor of Civil Engineering; B.S., Ecole Polytechnique, University of Montreal, 1977; M.S., Stanford University, 1980; Ph.D., ibid., 1983

Bergeron, Linda Rene (1997)
Associate Professor of Social Work; B.A., University of New Hampshire, 1973; M.S.W., University of Connecticut, 1981; Ph.D., Boston College, 1997

Professor of Computer Science; Sc.B., Brown University, 1966; Ph.D., ibid., 1973

Bergeron, Linda Rene (1997)
M.S., Stanford University, 1980; Ph.D., ibid., 1996

Bereznysky, David L. (2001)
Associate Professor of Biology and Zoology and Marine Sciences; B.S., Michigan State University, 1977; M.S., University of New Hampshire, 1981; Ph.D., University of Rhode Island, 1989

Berndtson, William E. (1979)
Professor of Biology and Animal Sciences; B.S., University of Texas at Austin, 1993

Bhattacharjee, Amitava (2003)
Professor of Earth, Oceans, and Space and Physics; B.Sc., Indian Institute of Technology, India, 1975; M.S., University of Michigan at Ann Arbor, 1976; M.S.E., ibid., 1978; M.A., Princeton University, 1979; Ph.D., ibid., 1981

Bishop, Melissa M. (2008)
Assistant Professor of Marketing and Business Administration; B.A., University of Virginia, 1994; M.B.A., University of Texas at Arlington, 2000; Ph.D., ibid., 2006

Bobilya, Dennis J. (1982)
Associate Professor of Biology and Nutritional Sciences; B.S., Purdue University, 1982; M.S., Michigan State University, 1985; Ph.D., University of Missouri, 1989

Boettcher, Margaret S. (2009)
Assistant Professor of Earth Sciences; Sc.B., Brown University, 1998; Ph.D., Massachusetts Institute of Technology, 2005

Bolker, Jessica A. (1997)
Associate Professor of Marine Sciences and Biology and Zoology; B.S., Yale University, 1986; Ph.D., University of California at Berkeley, 1993

Bolster, W. Jeffrey (1991)
Associate Professor of History; B.A., Trinity College, 1976; M.A., Brown University, 1984; Ph.D., Johns Hopkins University, 1991

Bolton, Brian J. (2006)
Assistant Professor of Accounting and Finance and Business Administration; B.A., Southern Methodist University, 1991; M.B.A., University of Texas at Austin, 1997; Ph.D., University of Colorado at Boulder, 2006

Bornstein, Steven P. (1989)
Associate Professor of Communication Sciences and Disorders; B.S., Northeastern University, 1975; M.Ed., ibid., 1977; Ph.D., University of Connecticut, 1981

Boulton, Elizabeth P. (1988)
Associate Professor of Biology; D.V.M., University of Georgia, 1980

Professor of Music; B.M., University of Iowa, 1991; M.M., Northwestern University, 1993; D.M.A., Eastman School of Music, University of Rochester, 1998

Brady, Thomas E. (2007)
Professor of Biochemistry and Molecular Biology; B.A., Beloit College, Wisconsin, 1967; M.S., Yale University, 1969; Ph.D., ibid., 1972

Braswell, Bobby H. (2001)
Research Associate Professor of Earth, Oceans, and Space; B.S., University of Alabama, 1987; M.S., University of New Hampshire, 1990; Ph.D., ibid., 1996

Breitman, Marla A. (1996)
Professor of Political Science and Women's Studies; B.A., State University of New York at Binghamton, 1986; M.A., New York University, 1988; Ph.D., ibid., 1993

Brito, Andre F. (2009)
Assistant Professor of Dairy Management; D.V.M., Federal University of Minas Gerais, 1996; M.S., ibid., 1999; Ph.D., University of Wisconsin at Madison, 2004

Britton, Dennis (2007)
Assistant Professor of English; B.A., University of Southern California, 1998; M.A., University of Wisconsin at Madison, 2000; Ph.D., ibid., 2007

Broussard, Cynthia Anne (2000)
Associate Professor of Social Work; B.A., University of Texas at Austin, 1974; M.S.W., Louisiana State University, 1977; Ph.D., Washington State University, 1986

Brown, Benjamin C. (1996)
Associate Professor of Sociology; B.A., Earlham College, 1987; M.A., Emory University, 1992; Ph.D., ibid., 1996

Brown, David (2004)
Assistant Professor of Geography; B.S., Pennsylvania State University, 1999; M.A., University of Arizona, 2001; Ph.D., ibid., 2004

Brown, Warren R. (1972)
Associate Professor of Political Science and Humanities; B.A., Willamette University, 1966; M.A., Claremont Graduate School and University Center, 1972; Ph.D., ibid., 1976

Associate Professor of Earth Sciences; B.A., University of Virginia, 1993; Ph.D., University of California at Santa Barbara, 1998

Brieler, Ludwig A. (2001)
Associate Professor of Marketing and Business Administration; M.B.A., University of Innsbruck, Austria, 1989; Ph.D., ibid., 1997

Burdick, David M. (1992)
Research Associate Professor of Natural Resources and Marine Sciences; B.S., Hobart College, 1977; Ph.D., Louisiana State University, 1988

Burger, John F. (1977)
Professor of Biology and Zoology; B.A., Grinnell College, 1962; M.S., University of Arizona, 1965; Ph.D., ibid., 1971

Clinical Assistant Professor of Nutritional Sciences; B.S., University of Rhode Island, 1975; M.Ed., Tufts University, 1977; R.D., ibid., 1977; Ph.D., University of New Hampshire, 2001

Byers, James E. (2001)
Associate Professor of Biology; B.S., Duke University, 1992; Ph.D., University of California at Santa Barbara, 1999

Professor of Physics; B.S., George Washington University, 1963; M.S., University of Illinois at Urbana-Champaign, 1965; Ph.D., ibid., 1969

Calculator, Stephen N. (1983)
Professor of Communication Sciences and Disorders; B.A., State University of New York College at Oswego, 1974; M.S., State University of New York College at Geneseo, 1975; Ph.D., University of Wisconsin at Madison, 1980

Calder, Brian R. (2001)
Research Associate Professor of Electrical and Computer Engineering and Ocean Engineering and Marine Sciences; M.Eng., Heriot-Watt University, 1994; Ph.D., ibid., 1997

Campbell, Janet W. (1993)
Research Professor of Earth, Oceans, and Space and Earth Sciences and Marine Sciences; B.A., Mary Baldwin College, 1966; M.A., Vanderbilt College, 1968; Ph.D., Virginia Polytechnic Institute and State University, 1973

Carey, Gale B. (1989)
Professor of Biology and Nutritional Sciences; B.S., University of Massachusetts at Amherst, 1974; M.S., University of Wisconsin at Madison, 1976; Ph.D., University of California at Davis, 1981
Cariens, Benjamin S. (2002)  
Associate Professor of Art and Art History;  
B.A., College of William and Mary, 1991;  
M.F.A., Boston University, 1993; M.A.,  
Harvard University, 1999

Carnicelli, Thomas A. (1967)  
Professor of English; A.B., Princeton University,  
1958; M.A., Harvard University, 1960; Ph.D.,  
ibid., 1966

Associate Professor of Health Management  
and Policy; B.A., Regis College, 1990; Ph.D.,  
Dartmouth College, 1995; M.Ph., Boston  
University, 1997

Professor of Chemical Engineering and  
Environmental Engineering; B.S., Brigham  
Young University, 1980; M.S., University of  
Rochester, 1983; Ph.D., ibid., 1984

Carroll, John E. (1974)  
Professor of Environmental Conservation  
Studies and Environmental Sciences; A.B.,  
Louisiana Technical University, 1966; M.A.,  
Western Michigan University, 1968; Ph.D.,  
Michigan State University, 1974

Carroll, Joshua (2006)  
Assistant Professor of Recreation Management  
and Policy; B.S., Franklin Pierce College, 1994;  
M.S., Colorado State University, 2001; Ph.D.,  
ibid., 2005

Carter, Michael J. (1987)  
Associate Professor of Electrical and Computer  
Engineering; B.S.E., University of Michigan  
at Ann Arbor, 1975; M.S., Stanford University,  
1976; Ph.D., University of Michigan at Ann  
Arbor, 1984

Assistant Professor of Social Work; A.A.,  
Orange County Community College, 1968;  
B.A., State University of New York College  
at Oneonta, 1970; M.S.W., University of New  
Hampshire, 1998; Ph.D., Boston College, 2003

Assistant Professor of Spanish and Languages,  
Literatures, and Cultures; B.A., Hood College,  
1994; M.A., University of Michigan at Ann  
Arbor, 1997; Ph.D., ibid., 2001

Celikkol, Barbaros (1969)  
Professor of Mechanical Engineering and  
Ocean Engineering; B.A., Elon College, 1964;  
M.S., Stevens Institute of Technology, 1967;  
Ph.D., University of New Hampshire, 1972

Cerullo, John J. (1983)  
Professor of History; B.A., University of  
Pennsylvania, 1971; M.A., ibid., 1976; Ph.D.,  
ibid., 1980

Chamberlin, Kent A. (1985)  
Professor of Electrical and Computer  
Engineering; B.S., Ohio University, 1974; M.S.,  
ibid., 1976; Ph.D., ibid., 1982

Chandler, Donald S. (1981)  
Professor of Biology and Zoology; B.S.,  
University of California at Davis, 1971; M.S.,  
University of Arizona, 1973; Ph.D., Ohio State  
University, 1976

Chandran, Benjamin D. (2005)  
Associate Professor of Earth, Oceans, and Space  
and Physics; B.A., Yale University, 1990; M.A.,  
Princeton University, 1994; Ph.D., ibid., 1997

Charpentier, Michel (1999)  
Associate Professor of Computer Science; B.S.,  
Institut National Polytechnique, 1990; M.S.,  
ibid., 1993; Ph.D., ibid., 1997

Chaston, John M. (1989)  
Associate Professor of Spanish and Languages,  
Literatures, and Cultures; B.A., Brigham Young  
University, 1980; M.A., ibid., 1982; Ph.D.,  
University of Texas at Austin, 1987

Chavajay, J. Pablo (2002)  
Associate Professor of Psychology; Licenciado,  
Universidad de San Carlos, Guatemala, 1989;  
M.A., University of California at Santa Cruz,  
1995; Ph.D., ibid., 1999

Chavda, Roslyn (2006)  
Assistant Professor of Political Science; B.A.,  
Loyola University, 1991; M.P.A., Rutgers  
University, 1998; Ph.D., ibid., 2004

Chen, Dora Wu (2005)  
Assistant Professor of Family Studies; B.S.,  
Michigan State University, 1981; M.S.,  
Purdue University, 1982; Ph.D., University of  
Maryland, 1998

Chini, Gregory P. (1999)  
Associate Professor of Mechanical Engineering;  
B.S., University of Virginia, 1993; M.S., Cornell  
University, 1996; Ph.D., ibid., 1999

Chiu, Monica E. (1998)  
Associate Professor of English; B.A., College  
of St. Catherine, 1987; M.A., University of  
Binghamton, England, 1992; Ph.D., Emory  
University, 1996

Cho, Eun Kyeong (2008)  
Assistant Professor of Education; B.A., Ewha  
Women's University, Korea, 1991; M.A., ibid.,  
1993; Ed.M., Teachers College, Columbia  
University, 2001; Ed.D., ibid., 2005

Christie, Drew (1981)  
Associate Professor of Philosophy; B.A.,  
Princeton University, 1974; M.S.I., Yale  
University Law School, 1978; Ph.D.,  
Massachusetts Institute of Technology, 1983

Chu, Brian W.K. (2001)  
Associate Professor of Art and Art History;  
B.F.A., Queens College, City University of New  
York, 1991; M.F.A., ibid., 1993

Chu, Feixia (2009)  
Assistant Professor of Biochemistry and  
Molecular Biology; B.S., Wuhan University.  
P.R. China, 1995; M.S., University of South  
Florida, 1998; Ph.D., University of California at  
San Francisco, 2004

Ciccone, Stephen J. (2000)  
Associate Professor of Accounting and Finance  
and Business Administration; B.S., University  
of Florida, 1994; M.Acc., ibid., 1994; Ph.D.,  
Florida State University, 2000

Cioffi, Grant L. (1980)  
Associate Professor of Education; A.B.,  
Stanford University, 1973; Ph.D., University of  
Minnesota, 1980

Clark, Mary Morris (1978)  
Professor of English; B.A., University of  
New Hampshire, 1962; Ph.D., University of  
Massachusetts at Amherst, 1978

Associate Professor of Earth Sciences; B.A.,  
Princeton University, 1990; M.S., University of  
Michigan at Ann Arbor, 1993; Ph.D., ibid., 1997

Cohn, Ellen S. (1978)  
Professor of Psychology; B.A., Clark University,  
1974; M.A., Temple University, 1976; Ph.D.,  
ibid., 1978

Collins, John J. (1988)  
Associate Professor of Biology and  
Biochemistry and Molecular Biology; B.A.,  
Colgate University, 1976; Ph.D., University of  
Wisconsin at Madison, 1984

Associate Professor of Kinesiology; B.A.,  
Princeton University, 1994; M.S., University of  
New Hampshire, 1998; Ph.D., University of  
North Carolina at Greensboro, 2002

Collins, M. Robin (1985)  
Professor of Civil Engineering and  
Environmental Engineering; B.S.C.E., Virginia  
Polytechnic Institute and State University,  
1970; M.S.E.E., ibid., 1972; Ph.D., University of  
Arizona, 1985

Professor of Biology and Animal Sciences; B.A.,  
Merrimack College, 1965; M.S., University of  
Massachusetts at Amherst, 1968; Ph.D., ibid.,  
1975

Congalton, Russell G. (1991)  
Professor of Environmental Conservation  
Studies and Environmental Sciences and  
Forestry; B.S., Cook College, Rutgers  
University, 1979; M.S., Virginia Polytechnic  
Institute and State University, 1981; Ph.D., ibid.,  
1984

Connell, James (2002)  
Associate Professor of Earth, Oceans, and Space  
and Physics; B.A., Washington University, 1981;  
M.A., ibid., 1983; Ph.D., ibid., 1988

Connelly, Vincent J. (2004)  
Associate Professor of Education; B.A.,  
Emory University, 1988; M.S.Ed., Johns Hopkins  
University, 1993; Ed.D., ibid., 2004

Conway, Karen Smith (1987)  
Professor of Economics; B.A., Eastern Illinois  
University, 1982; Ph.D., University of North  
Carolina at Chapel Hill, 1987
Cook, Jenni Carbaugh (2001)
Associate Professor of Music; B.M., Bradley University, 1995; M.M., University of Illinois, 1997; D.M.A., University of Illinois at Urbana-Champaign, 2001

Cook, Raymond A. (1992)
Associate Professor of Civil Engineering; A.B., University of Illinois at Urbana-Champaign, 1981; B.S.C.E., ibid., 1981; M.S.C.E., Cornell University, 1991; Ph.D., ibid., 1992

Cook, Summer (2009)
Assistant Professor of Kinesiology; B.S., East Stroudsburg University, 1999; M.S., State University of New York, Syracuse, 2002; Ph.D., ibid., 2009

Cooper, Barbara T. (1978)
Professor of French and Languages, Literatures, and Cultures; B.A., University of Wisconsin at Madison, 1966; M.A., ibid., 1967; Ph.D., ibid., 1974

Assistant Professor of Microbiology and Genetics Program; A.B., University of Massachusetts at Amherst, 1994; Ph.D., Michigan State University, 2000

Professor of Biology and Biochemistry and Molecular Biology; B.S., Tufts University, 1974; Ph.D., University of Wisconsin at Madison, 1980

Associate Professor of Education; B.S.Ed., State University of New York College at Cortland, 1980; M.S.Ed., State University of New York College at Brockport, 1985; M.S., Russell Sage College, 1993; Ph.D., Syracuse University, 2001

Croce, Ronald V. (1986)
Professor of Kinesiology; B.S., Brooklyn College, City University of New York, 1973; M.Ed., Temple University, 1975; Ph.D., University of New Mexico, 1983

Cullen, Kelly L. (2001)
Associate Professor of Community and Environmental Planning and Environmental and Resource Economics and Tourism Planning and Development; B.A., Ithaca College, 1992; M.S., West Virginia University, 1996; Ph.D., Colorado State University, 1999

Culligan, Kevin (2005)
Research Assistant Professor of Biochemistry and Molecular Biology and Genetics Program; B.S., University of California San Diego, 1994; Ph.D., Oregon State University, 2000

Curran-Celentano, Joanne (1982)
Professor of Nutritional Sciences; B.S., Rutgers, The State University of New Jersey, 1976; M.S., ibid., 1978; Ph.D., University of Illinois at Urbana-Champaign, 1982

Daniel, Jo S. (2001)
Associate Professor of Civil Engineering; B.S., University of New Hampshire, 1994; M.S., North Carolina State University, 1996; Ph.D., ibid., 2001

Professor of Biology and Plant Biology; B.S., California Polytechnic State University, 1980; Ph.D., University of California at Davis, 1985

de Alba, Pedro A. (1977)
Professor of Civil Engineering; C.E., National University of Mexico, 1965; M.E., University of California at Berkeley, 1969; Ph.D., ibid., 1975

de la Rasilla, Carmen Garcia (2001)
Associate Professor of Spanish and Languages, Literatures, and Cultures; Licenciatura, Universidad de Valladolid, Spain, 1985; Ph.D., ibid., 1990; M.A., Johns Hopkins University, 1991; Ph.D., ibid., 1996

Professor of Electrical and Computer Engineering and Ocean Engineering and Marine Sciences; M.S., University of California, 1981; Ph.D., ibid., 1985

DeMitchell, Todd A. (1990)
Professor of Education; B.A., LaVerne College, 1969; M.A.T., University of LaVerne, 1973; Ed.D., University of Southern California, 1979; M.A., University of California at Davis, 1990

Denis, Clyde L. (1982)
Professor of Biochemistry and Molecular Biology; B.S., University of Illinois at Urbana-Champaign, 1973; M.S., University of Washington, 1976; Ph.D., ibid., 1982

DeTurk, Mark S. (1988)
Associate Professor of Music; B.S.E., Princeton University, 1972; B.M., University of Wisconsin at Madison, 1975; M.M., Ohio State University, 1982; Ph.D., University of Wisconsin at Madison, 1988

Research Associate Professor of Earth, Oceans, and Space and Earth Sciences; B.S., University of Puget Sound, 1981; M.A., State University of New York at Binghampton, 1983; Ph.D., ibid., 1988

Diefendorf, Jeffry M. (1976)
Professor of History; A.B., Stanford University, 1967; M.A., University of California at Berkeley, 1968; Ph.D., ibid., 1975

Diller, Ann L. (1973)
Professor of Education; B.A., Maryville College, 1960; M.A., Tulsa University, 1962; Ed.D., Harvard University, 1971

Dillon, Michele (2001)
Professor of Sociology; B.Sc., University College, Dublin, 1980; M.Sc., ibid., 1983; Ph.D., University of California at Berkeley, 1989

DiNapoli, Pamela P. (1999)
Associate Professor of Nursing; B.S.N., Thomas Jefferson University of Allied Health, 1981; M.S.N., University of Pennsylvania, 1984; Ph.D., University of Massachusetts at Lowell, 2000

Associate Professor of Music; B.A., San Jose State University, 1980; M.F.A., California Institute of the Arts, 1982; M.A., University of California at Berkeley, 1987; Ph.D., ibid., 1990

Associate Professor of Family Studies; B.A., University of California at Santa Barbara, 1971; M.A., Michigan State University, 1973; Ph.D., Virginia Polytechnic Institute and State University, 1980

UNNH Associate Professor of Library Science and Affiliate Associate Professor of College Teaching; B.A., University of New Hampshire, 1994; M.L.S., Southern Connecticut State University, 1995; D.L.M., Harvard University, 2005

Dorfman, Marco (1999)
Associate Professor of Spanish and Languages, Literatures, and Cultures; B.A., University of Illinois at Chicago, 1985; M.A., University of Wisconsin at Madison, 1988; Ph.D., ibid., 1992

Dorsey, Kurk (1994)
Associate Professor of History; B.A., Cornell University, 1987; M.A., Northwestern University, 1989; Ph.D., Yale University, 1994

Dorsey, Marion Girard (2005)
Assistant Professor of History; B.A., Stanford University, 1993; J.D., Harvard University, 1997; Ph.D., Yale University, 2002

Dowd, Eleanne Solorzano (1999)
Associate Professor of Decision Sciences; B.S., University of Florida, 1993; M.S., ibid., 1995; Ph.D., University of South Carolina, 1999

Associate Professor of Marine Sciences and Electrical and Computer Engineering and Ocean Engineering; B.S., University of Rhode Island, 1967; S.M., Massachusetts Institute of Technology, 1968; E.E., ibid., 1969; A.M., Harvard University, 1971; Ph.D., Tufts University, 1978

Professor of Psychology; B.A., Susquehanna University, 1979; M.A., University of Colorado, 1981; Ph.D., ibid., 1984

Drumheller, Grant (1986)
Professor of Art and Art History; B.F.A., Boston University, 1976; M.F.A., ibid., 1978

Druskat, Vanessa Urch (2003)
Associate Professor of Management and Business Administration; B.A., Indiana University at Bloomington, 1982; M.A., Columbia University, 1988; Ph.D., Boston University, 1996
Dubnick, Melvin J. (2005)
Professor of Political Science; B.S., Southern Colorado State College, 1968; Ph.D., University of Colorado, 1974

Ducey, Mark J. (1998)
Professor of Forestry; B.A., Yale University, 1990; M.F.S., ibid., 1992; Ph.D., ibid., 1996

Professor of Sociology and Health Management and Policy; B.A., Stanford University, 1971; M.A., University of Kentucky, 1981; Ph.D., ibid., 1985

Durant, Jennifer (2003)
Research Assistant Professor of Biochemistry and Molecular Biology; Ph.D., University of New Hampshire, 2003

Durant, Yvon G. (2000)
Research Associate Professor of Materials Science; Ph.D., Université Claude Bernard, Lyon I, France, 1994

Echt, Olof E. (1990)
Professor of Physics; Diploma, Free University Berlin, Germany, 1975; Ph.D., University of Konstanz, Germany, 1979

Eckert, Robert T. (1978)
Professor of Environmental Conservation Studies and Forestry; B.S., S.U.N.Y. College of Environmental Science and Forestry at Syracuse, 1967; Ph.D., Ohio State University, 1978

Professor of English; B.A., Duke University, 1964; Ph.D., University of North Carolina at Chapel Hill, 1971

Elmslie, Bruce T. (1989)
Professor of Economics; B.S., Westminster College, Utah, 1983; Ph.D., University of Utah, 1988

Emison, Patricia A. (1987)
Professor of Humanities and Art and Art History; B.A., Bryn Mawr College, 1978; M.A., Columbia University, 1980; M.Phil., ibid., 1982; Ph.D., ibid., 1985

Professor of Economics; B.A., Oakland University, 1965; M.A., University of Michigan at Ann Arbor, 1967; Ph.D., ibid., 1974

Erickson, Peter S. (1997)
Associate Professor of Dairy Management and Animal Sciences; B.S., University of Massachusetts at Amherst, 1982, M.S., University of Maine at Orono, 1984; Ph.D., University of Illinois at Urbana-Champaign, 1989

Associate Professor of Music; Certificate, University of Vienna, 1971; B.A., Yale University, 1973; M.M., New England Conservatory of Music, 1976

Etebari, Ahmad (1980)
Professor of Accounting and Finance and Business Administration; B.B.A., Teheran Business College, Iran, 1973; M.B.A., Texas A & M University, 1975; Ph.D., University of North Texas, 1979

Professor of Biology and Plant Biology and Marine Sciences; B.S., University of Wyoming, 1967; M.S., University of South Florida, 1972; Ph.D., ibid., 1975

Research Associate Professor of Earth, Oceans, and Space, Affiliate Associate Professor of Earth Sciences; B.S., University of Rochester, 1984; Ph.D., California Institute of Technology, 1991

Fairchild, Elizabeth A. (2009)
Research Assistant Professor of Zoology; B.A., University of New Hampshire, 1991; M.S., ibid., 1998; Ph.D., ibid., 2002

Falvey, Janet Elizabeth (1984)
Professor of Education; B.S., University of Maryland, 1977; M.A., University of New Hampshire, 1980; Ph.D., Pennsylvania State University, 1983

Farak, Ihab H. (1976)
Professor of Chemical Engineering and Environmental Engineering; B.S., Cairo University, Egypt, 1967; M.S., Massachusetts Institute of Technology, 1970; Sc.D., ibid., 1976

Farrugia, Charles J. (2002)
Research Associate Professor of Earth, Oceans, and Space and Physics; B.S., University of Malta, 1966; M.S., University of Bern, Switzerland, 1978; Ph.D., ibid., 1984

Feintuch, Burt H. (1988)
Professor of English; B.A., University of Pennsylvania State University, 1971; M.A., University of Pennsylvania, 1972; Ph.D., ibid., 1975

Feldman, David V. (1987)
Associate Professor of Mathematics and Statistics; B.A., Yale University, 1977; Ph.D., Wesleyan University, 1987

Ferber, Michael K. (1987)
Professor of Humanities and English; B.A., Swarthmore College, 1966; M.A., Harvard University, 1969; Ph.D., ibid., 1975

Fernald, Peter S. (1966)
Professor of Psychology; A.B., Amherst College, 1958; M.S., Springfield College, 1959; Ph.D., Purdue University, 1963

Fetter, Susan J. (1996)
Associate Professor of Nursing; B.A., University of Connecticut, 1973; B.S.N., ibid., 1975; M.S.N., University of Alabama, 1980; M.B.A., New Hampshire College, 1990; Ph.D., Adelphi University, 1998

Finkelhor, David (1992)
Professor of Sociology; B.A., Harvard University, 1968; M.Ed., Harvard Graduate School of Education, 1971; Ph.D., University of New Hampshire, 1978

Fitzpatrick, Ellen (1997)
Professor of History; B.A., Hampshire College, 1974; Ph.D., Brandeis University, 1981

Fonseca, Luciano (2006)
Research Assistant Professor of Ocean Engineering and Marine Sciences; B.S., University of Brasilia, DF, Brazil, 1986; M.S., University of Campinas, SP, Brazil, 1989; Ph.D., University of New Hampshire, 2001

Forbes, Terry (1987)
Research Professor of Earth, Oceans, and Space and Physics; B.S., Purdue University, 1968; M.S., University of Colorado, 1970; Ph.D., ibid., 1978

Foxall, Thomas L. (1984)
Professor of Biology and Animal Sciences; B.S., Lebanon Valley College, 1968; M.S., University of Bridgeport, 1977; Ph.D., University of New Hampshire, 1980

Fraas, Michael (2003)
Assistant Professor of Communication Sciences and Disorders; Ph.D., University of Cincinnati, 2003

Franke, Tom (2006)
Affiliate Professor of Education; A.B., Columbia University, 1970; M.A., Wayne State University, 1972; M.Ed., Frostburg State College, 1975; Ph.D., University of Maryland, 1980

Frankel, Barbara R. (1988)
Associate Professor of Family Studies; B.A., University of Wisconsin at Madison, 1970; M.S.W., Kent State University, 1976; Ph.D., Purdue University, 1988

Frankfurter, David (1995)
Professor of History; B.A., Wesleyan University, 1983; M.T.S., Harvard Divinity School, 1986; M.A., Princeton University, 1988; Ph.D., ibid., 1990

Freedman, Diane P. (1992)
Professor of English; A.B., Cornell University, 1977; M.A.T., ibid., 1978; M.A., Boston University, 1982; Ph.D., University of Washington, 1989

Clinical Professor of Animal Sciences; B.S., University of Connecticut, 1982; D.V.M., University of Illinois at Urbana-Champaign, 1987; M.S., ibid., 1991; Ph.D., ibid., 1996

Associate Professor of Environmental Sciences; B.S., University of Virginia, 1988; M.S., ibid., 1992; Ph.D., Colorado State University, 1999

Friesen, Cathy A. (1991)
Professor of History; B.A., University of North Carolina at Chapel Hill, 1975; A.M., Harvard University, 1978; Ph.D., ibid., 1985
Fries, Mary K. (2002)
Associate Professor of Education; B.A.,
University of South Florida, 1979; M.Ed., ibid.,
1994; C.A.S., Harvard University, 1996; Ph.D.,
Boston College, 2002

Research Associate Professor of Earth, Oceans,
and Space and Earth Sciences; B.S., University
of New Hampshire, 1980; M.S., ibid., 1983;
Ph.D., ibid., 1993

Fukawa-Connelly, Timothy P. (2008)
Assistant Professor of Mathematics and
Statistics; B.A., University of Portland,
1997; M.A., Miami University, 2000; Ph.D.,
University of Maryland, 2007

Fuld, Kenneth (1979)
Professor of Psychology; B.A., Northeastern
University, 1971; Ph.D., Dartmouth College,
1976

Fussell, Barry K. (1987)
Professor of Mechanical Engineering; B.S.,
Ohio State University, 1975; M.S., ibid., 1980;
Ph.D., ibid., 1987

Galvin, Antoinette B. (1997)
Research Associate Professor of Earth, Oceans,
and Space; B.S., Purdue University, 1974;
M.S., University of Maryland, 1976;
Ph.D., ibid., 1982

Gardner, Jim (2000)
Affiliate Professor of Earth Sciences; B.S.,
California State University at San Diego, 1967;
M.S., Columbia University, 1969; Ph.D., ibid.,
1973

Gardner, Kevin H. (1999)
Associate Professor of Civil Engineering;
B.S., Union College, 1989; M.S., Clarkson
University, 1991; Ph.D., ibid., 1996

Associate Professor of Education; B.A.,
University of South Carolina, 1969; M.A.T.,
Harvard University, 1972; Ph.D., University of
Connecticut, 1981

Professor of Kinesiology; B.A., St. Olaf College,
1978; M.A., University of Northern Colorado,
1979; Ph.D., University of Colorado, 1986

Ge, Liming (1998)
Professor of Mathematics and Statistics;
B.S., Peking University, 1984; M.S., Qufu
Normal University, 1987; Ph.D., University of
Pennsylvania, 1995

Germaschewski, Kai (2008)
Assistant Professor of Physics and Earth,
Oceans, and Space; Diploma, Heinrich-Heine
University Duesseldorf, German, 1998; Ph.D.,
Heinrich-Heine University Duesseldorf,
Germany, 2001

Associate Professor of Psychology; B.A.,
University of Minnesota, 1991; M.S., Bucknell
University, 1995; Ph.D., University of Nebraska
at Lincoln, 1999

Gittell, Ross J. (1993)
Professor of Management and Business
Administration; A.B., University of Chicago,
1979; M.B.A., University of California at
Berkeley, 1981; Ph.D., Harvard University, 1989

Givan, Curtis V. (1990)
Professor of Biology and Plant Biology; A.B.,
Stanford University, 1960; A.M., ibid., 1961;
Ph.D., Harvard University, 1968

Gold, Janet (1995)
Professor of Spanish and Languages,
Literatures, and Cultures; B.A., Albertus
Magnus College, 1971; M.A., Worcester
State College, 1981; Ph.D., University of
Massachusetts at Amherst, 1990

Goldberg, Michael D. (1991)
Associate Professor of Economics; B.S., Lehigh
University, 1980; Ph.D., New York University,
1991

Goldstein, Gary S. (1987)
Associate Professor of Psychology; B.A., State
University of New York at Buffalo, 1971; M.A.,
University of New Hampshire, 1976; Ph.D.,
ibid., 1980

Golinski, Jan V. (1990)
Professor of Humanities and History; B.A.,
Cambridge University, England, 1979; Ph.D.,
The University of Leeds, England, 1983

Professor of Hospitality Management; B.B.A.,
Southwest Texas State University, 1967; M.P.S.,
Cornell University, 1973; Ph.D., ibid., 1979

Goodridge, Lyndon E. (1990)
Professor of Community and Environmental
Planning and Environmental and Resource
Economics and Tourism Planning and
Development; B.S., University of Georgia, 1965;
M.S., ibid., 1966; Ph.D., Purdue University,
1971

Goodspeed, Charles H. (1978)
Associate Professor of Civil Engineering;
B.S.C.E., Worcester Polytechnic Institute,
1967; M.S.C.E., ibid., 1969; Ph.D., University of
Cincinnati, 1972

Gottwald, Sheryl (1997)
Clinical Assistant Professor of Communication
Sciences and Disorders; B.S., Northeastern
University, 1976; M.S., Pennsylvania State
University, 1979; Ph.D., Temple University,
1990

Associate Professor of History; A.B.,
Princeton University, 1983; M.Sc., University
of Edinburgh, 1987; M.A., Johns Hopkins
University, 1988; Ph.D., ibid., 1992

Graham, Karen J. (1987)
Professor of Mathematics and Statistics; B.A.,
State University of New York College at
Cortland, 1975; M.A., State University of New
York at Albany, 1978; M.S., University of New
Hampshire, 1983; Ph.D., ibid., 1986

Assistant Professor of Education; B.S., Brown
University, 1985; Ed.M., Harvard Graduate
School of Education, 1990; Ed.D., ibid., 1997

Professor of Chemistry; B.S., Fairleigh
Dickinson University, 1967; A.M., Princeton
University, 1971; Ph.D., ibid., 1971

Greenslade, Margaret E. (2007)
Assistant Professor of Chemistry; B.S., Bryn
Mawr College, 1998; Ph.D., University of
Pennsylvania, 2005

Grenier, Michelle A. (2000)
Assistant Professor of Kinesiology; B.S.,
University of Massachusetts at Amherst, 1978;
M.S., University of New Hampshire, 1995;
Ph.D., ibid., 2004

Professor of Civil Engineering; B.S., Purdue
University, 1966; M.S., ibid., 1968; Ph.D., ibid.,
1976

Professor of Mathematics and Statistics; B.A.,
Cornell University, 1978; M.A., Harvard
University, 1980; Ph.D., ibid., 1983

Grinde, Roger B. (1993)
Associate Professor of Decision Sciences and
Business Administration; B.A., Carroll College,
1984; M.S., Oregon State University, 1986;
Ph.D., Pennsylvania State University, 1993

Grisswold, Lou Ann (1987)
Associate Professor of Occupational Therapy;
B.S., Colorado State University, 1979;
M.S., ibid., 1986; Ph.D., University of New
Hampshire, 1995

Research Professor of Zoology and Marine
Sciences; B.S., Florida State University, 1972;
M.S., University of Central Florida, 1981;
Ph.D., Rutgers University, 1988

Gross, Todd S. (1988)
Professor of Mechanical Engineering and
Materials Science; B.S., Carnegie Mellon
University, 1975; Ph.D., Northwestern
University, 1981

Associate Professor of History; B.A., University
of Rochester, 1983; M.A., University of
California at Berkeley, 1987; Ph.D., ibid., 1993
Associate Professor of Chemical Engineering and Environmental Engineering; B.Tech., Indian Institute of Technology at Bombay, India, 1993; Ph.D., Pennsylvania State University, 1999

Gwebu, Kholekile L. (2006)
Assistant Professor of Decision Sciences and Business Administration; B.S., National University of Lesotho, Africa, 1998; M.B.A., Kent State University, 2002; Ph.D., ibid., 2006

Hackett, Robin (2001)
Associate Professor of English; B.A., University of California at Davis, 1986; M.A., Sonoma State University, 1993; Ph.D., City University of New York, 2000

Hadwin, Donald W. (1977)
Professor of Mathematics and Statistics; B.S., Michigan State University, 1967; M.A., University of Wisconsin at Madison, 1968; Ph.D., Indiana University at Bloomington, 1975

Hagner, David C. (2002)
Affiliate Professor of Education; B.A., Fordham University, 1970; M.A., University of Cincinnati, 1974; M.S., Syracuse University, 1978; Ph.D., ibid., 1980

Hahn, Joan E (2008)
Associate Professor of Nursing; B.A., University of Rochester, 1975; B.S., ibid., 1982; M.S., Rush University, 1988; Ph.D., ibid., 1994; Post-Masters Certificate, University of California at Los Angeles, 2007

Halstead, John M. (1988)
Professor of Natural Resources; B.A., University of Notre Dame, 1976; M.S., University of Massachusetts at Amherst, 1981; Ph.D., Virginia Polytechnic Institute and State University, 1989

Hamilton, Lawrence C. (1977)
Professor of Sociology; B.A., University of California at Santa Barbara, 1970; M.A., University of Colorado, 1974; Ph.D., ibid., 1978

Associate Professor of Nursing; B.S.N., Loyola University, 1982; M.S.N., ibid., 1987; Certificate, University of Illinois at Chicago, 1993; Ph.D., University of Wisconsin at Milwaukee, 1996

Haney, James F. (1972)
Professor of Zoology; A.B., Miami University, Ohio, 1961; M.A., ibid., 1963; Ph.D., University of Toronto, Canada, 1970

Hansen, Thomas Bowe (2007)
Assistant Professor of Accounting and Finance and Business Administration; B.A., Washington and Lee University, 1996; M.S., University of South Carolina, 2002; Ph.D., Emory University, 2007

Hardy, Stephen H. (1988)
Professor of Kinesiology, Affiliate Professor of History; A.B., Bowdoin College, 1970; M.S., University of Massachusetts at Amherst, 1976; M.A., ibid., 1978; Ph.D., ibid., 1980

Harkless, Gene E. (1985)
Associate Professor of Nursing; B.S.N., Duke University, 1976; M.S.N., Vanderbilt University, 1980; D.N.Sc., Boston University, 1991

Professor of Physics; B.A., Harvard University, 1968; Ph.D., Stanford University, 1975

Harris, Benjamin (2001)
Professor of Psychology, Affiliate Professor of History; B.A., Hampshire College, 1971; M.A., Vanderbilt University, 1973; Ph.D., ibid., 1975

Harris, J. William (1985)
Professor of History; B.S., Massachusetts Institute of Technology, 1968; M.A., Johns Hopkins University, 1976; Ph.D., ibid., 1982

Harris, Larry G. (1969)
Professor of Zoology and Marine Sciences; A.B., University of California at Berkeley; 1965; Ph.D., ibid., 1970

Harrist, Chris (2009)
Assistant Professor of Recreation Management and Policy; B.S., Tarleton State University, 2000; M.S., ibid., 2003; Ph.D., Texas A & M University, 2008

Assistant Professor of Music; B.M., Johns Hopkins University, 1982; M.M., Guildhall School of Music and Drama, London, England, 1994; M.A., Eastman School of Music, University of Rochester, 1996; D.M.A., ibid., 1997; Ph.D., ibid., 2004

Hatcher, Philip J. (1986)
Professor of Computer Science; B.S., Purdue University, 1978; M.S., ibid., 1979; Ph.D., Illinois Institute of Technology, 1985

He, Pingguo (2002)
Research Associate Professor of Marine Sciences; B.Eng., Zhejiang Fisheries College, P.R. China, 1982; Ph.D., University of Aberdeen, Scotland, 1987

Hebert, David J. (1967)
Professor of Education; B.S., University of Maine at Orono, 1962; M.Ed., Duquesne University, 1964; Ph.D., Kent State University, 1967

Clinical Professor of Health Management and Policy; B.A., Drew University, 1967; M.A., University of New Hampshire, 1971

Associate Professor of Civil Engineering; B.S.C.E., University of Pennsylvania, 1973; M.S.C.E., ibid., 1974; Ph.D., ibid., 1980

Herold, Marc W. (1975)
Associate Professor of Economics; B.S., Swiss Federal Polytechnic Institute, 1967; M.B.A., University of California at Berkeley, 1970; Ph.D., ibid., 1979

Professor of Physics; B.A., University of Cincinnati, 1977; B.S., ibid., 1977; Ph.D., Massachusetts Institute of Technology, 1982

Hertz, Susan Margaret (1986)
Associate Professor of English; B.A., University of New Hampshire, 1978

Hibschweiler, Rita A. (1988)
Professor of Mathematics and Statistics; B.A., State University of New York at Buffalo, 1979; M.A., ibid., 1981; Ph.D., State University of New York at Albany, 1988

Hight, Eleanor M. (1992)
Associate Professor of Art and Art History; B.A., Skidmore College, 1970; A.M., Harvard University, 1977; Ph.D., ibid., 1986

Hiley, David R. (1999)
Professor of Philosophy; B.A., Auburn University, 1966; M.A., University of Georgia, 1969; Ph.D., ibid., 1972

Hiller, Marc D. (1979)
Associate Professor of Health Management and Policy; B.S., University of Pittsburgh, 1972; M.P.H., ibid., 1974; Dr.P.H., ibid., 1978

Hinson, Edward K. (1985)
Associate Professor of Mathematics and Statistics; B.S., University of Florida, 1979; M.S., Northwestern University, 1982; Ph.D., ibid., 1985

Research Associate Professor of Earth, Oceans, and Space; B.S., Yale University, 1987; M.S., University of Virginia, 1994; Ph.D., ibid., 1997

Holcombe, Julee (2006)
Assistant Professor of Art and Art History; B.F.A., University of New Mexico, 1998; M.F.A., Maryland Institute College of Art, 2004

Holtrop, Maurik (2002)
Associate Professor of Physics; B.S., University of New Hampshire, 1987; Ph.D., Massachusetts Institute of Technology, 1995

Hood, Craig A. (1981)
Professor of Art and Art History; B.A., Pennsylvania State University, 1979; M.F.A., Indiana University at Bloomington, 1981

Hopkins, Lori (1997)
Associate Professor of Spanish and Languages, Literatures, and Cultures; B.A., University of Virginia, 1984; M.A., University of Wisconsin at Madison, 1987; Ph.D., ibid., 1993

Houston, Barbara E. (1991)
Professor of Education; B.A., University of Western Ontario, Canada, 1963; M.A., ibid., 1966; Ph.D., ibid., 1977
Professor of Forestry and Environmental Conservation Studies; B.S., University of Maine at Orono, 1972; M.F., Duke University, 1974; Ph.D., Oregon State University, 1982

Howell, W. Huntting (1980)
Professor of Biology and Zoology and Marine Sciences; B.A., Otterbein College, 1969; M.S., University of Rhode Island, 1975; Ph.D., ibid., 1980

Associate Professor of Biology and Plant Biology and Genetics Program; B.S., Michigan State University, 1978; Ph.D., University of Wisconsin at Madison, 1992

Huang, Ju-Chin (1998)
National Professor of Economics; B.S., National Taiwan University, Taipei, Republic of China, 1985; M.Sc., North Carolina State University, 1988; Ph.D., ibid., 1994

Professor of Political Science; B.A., B.A., State University of New York at Buffalo, 1972; M.A., University of Wisconsin at Madison, 1973; Ph.D., ibid., 1978

Huff, Lloyd (2003)
Research Professor of Ocean Engineering and Marine Sciences; B.S., Southwestern University, 1961; M.S., University of Rhode Island, 1967; Ph.D., ibid., 1976

Hurtt, George C. (1998)
Associate Professor of Environmental Sciences and Earth, Oceans, and Space; B.A., Middlebury College, 1990; M.S., University of Connecticut, 1992; M.A., Princeton University, 1994; Ph.D., ibid., 1997

Innis, Daniel E. (2007)
Professor of Marketing and Business Administration; B.B.A., Ohio University, 1985; M.B.A., Miami University, 1986; Ph.D., The Ohio State University, 1991

Associate Professor of Accounting and Finance and Business Administration; B.A., College of Wooster, 1990; Ph.D., Pennsylvania State University, 1998

Isenberg, Philip A. (1991)
Research Professor of Earth, Oceans, and Space and Physics; B.S., Massachusetts Institute of Technology, 1971; M.S., University of Chicago, 1974; Ph.D., ibid., 1977

Associate Professor of Civil Engineering; Sc.B., Brown University, 1987; M.S., Tufts University, 1993; Ph.D., Cornell University, 1997

Jacoby, A. Robb (1961)
Professor of Mathematics and Statistics; B.S., University of Chicago, 1941; S.M., ibid., 1942; Ph.D., ibid., 1946

Jahnke, Leland S. (1977)
Professor of Biology and Plant Biology; B.A., University of Minnesota, 1961; M.A., ibid., 1966; M.S., ibid., 1968; Ph.D., ibid., 1973

Associate Professor of Nutritional Sciences; B.S., Bridgewater State College, 1967; M.S., University of New Hampshire, 1970; Ph.D., ibid., 1980

Jerard, Robert (1989)
Professor of Mechanical Engineering; B.S., University of Vermont, 1969; M.S., Massachusetts Institute of Technology, 1970; Ph.D., University of Utah, 1977

Jha, Sanjeev (2009)
Assistant Professor of Decision Sciences; B.Eng., College of Engineering, 1993; M.B.A., International Management Institute, 1998; Ph.D., University of Illinois at Chicago, 2009

Johnson, Joel E. (2005)
Assistant Professor of Marine Sciences and Earth Sciences; B.S., University of Minnesota, 1996; M.S., University of Illinois, 1998; Ph.D., Oregon State University, 2004

Professor of Sociology, Affiliate Professor of Political Science; B.A., University of Michigan, 1972; M.A., University of North Carolina at Chapel Hill, 1975; Ph.D., ibid., 1980

Johnson, Paul C. (1979)
Professor of Biology and Environmental Conservation Studies and Forestry; B.S., Emory and Henry College, 1968; Ph.D., Cornell University, 1974

Johnson, Richard P. (1985)
Professor of Chemistry; B.S., Syracuse University, 1972; Ph.D., ibid., 1976

Assistant Professor of Accounting and Finance and Business Administration; B.S., Rensselaer Polytechnic Institute, 1995; M.B.A., State University of New York at Buffalo, 2002; Ph.D., Michigan State University, 2006

Jolley, Robert E. (1979)
Associate Professor of Social Work; B.A., Allegheny College, 1966; M.S.S.S., Boston University School of Social Work, 1972; Ph.D., Smith College, 1983

Jones, Lisa M. (2001)
Research Assistant Professor of Psychology; B.A., University of Virginia, 1992; M.A., University of Rhode Island, 1997; Ph.D., ibid., 1999

Research Associate Professor of Natural Resources and Marine Sciences; B.S., University of Maine at Orono, 1976; M.S., University of Wisconsin at Madison, 1980; Ph.D., ibid., 1983

Jorgensen, Cheryl M. (2002)
Research Assistant Professor of Education; B.S., Springfield College, 1974; M.P.H., University of Pittsburgh, 1975; Ph.D., Pennsylvania State University, 1982

Kaen, Fred R. (1973)
Professor of Accounting and Finance and Business Administration; B.S., Lehigh University, 1963; M.B.A., University of Michigan at Ann Arbor, 1967; Ph.D., ibid., 1972

Kalargyrou, Valentini (2009)
Assistant Professor of Hospitality Management; B.S.B.A., Athens Graduate School of Business and Economics, 1990; M.A., University of Nevada Las Vegas, 2005; Ph.D., ibid., 2009

Kalinowski, Michael F. (1980)
Associate Professor of Family Studies; B.A., Bennington College, 1970; M.Ed., University of Massachusetts at Amherst, 1972; Ed.D., ibid., 1976

Kalneja, Linda (2007)
Assistant Professor of Earth Sciences and Marine Sciences; B.S., University of Western Australia, 1995; Ph.D., Massachusetts Institute of Technology, 2005

Kantor, Glenda Kaufman (1990)
Research Associate Professor of Sociology; B.S., Temple University, 1971; M.S., University of Pennsylvania, 1975; Ph.D., University of Illinois at Chicago, 1984

Kayser, John R. (1969)
Associate Professor of Political Science; B.A., University of New Hampshire, 1962; M.A., Ohio State University, 1964; Ph.D., Claremont Graduate School and University Center, 1969

Kazura, Kerry (1995)
Associate Professor of Family Studies; B.A., University of Southern Maine, 1989; M.S., Auburn University, 1992; Ph.D., ibid., 1995

Associate Professor of Music; B.A., University of New England, 1977; D.M.A., University of Alberta, Canada, 1999

Kerns, Georgia M. (1991)
Associate Professor of Education; B.S.Ed., University of Delaware, 1969; M.Ed., ibid., 1975; M.Ed., University of New Hampshire, 1983; Ph.D., University of Kansas, 1987

Kies, Christopher (1979)
Professor of Music; B.M. Composition and B.M. Piano, New England Conservatory of Music, 1973; M.F.A., Brandeis University, 1977; Ph.D., ibid., 1984

Kinser, Nancy E. (1983)
Professor of Civil Engineering; A.B., Cornell University, 1976; M.S.C.E., University of New Hampshire, 1980; Ph.D., ibid., 1983
Kinsey, Brad Lee (2001)
Associate Professor of Mechanical Engineering and Materials Science; B.S., University of Michigan at Ann Arbor, 1992; M.S., Northwestern University, 1998; Ph.D., ibid., 2001

Clinical Professor of Sociology; B.A., Colby College, 1977; M.A., University of New Hampshire, 1979; Ph.D., ibid., 1983

Kirsch, Nicholas J. (2009)
Assistant Professor of Electrical and Computer Engineering; B.S., University of Wisconsin at Madison, 2003; M.S., Drexel University, 2006; Ph.D., ibid., 2009

Professor of Earth, Oceans, and Space, Associate Professor of Physics; B.S., Harvey Mudd College, 1981; Ph.D., Harvard University, 1987

Klein, Anita S. (1985)
Associate Professor of Biology and Plant Biology and Marine Sciences; B.A., University of Rochester, 1975; Ph.D., Michigan State University, 1981

Klewicki, Joseph C. (2005)
Professor of Mechanical Engineering; B.S., Michigan State University, 1983; M.S., Georgia Institute of Technology, 1985; Ph.D., Michigan State University, 1989

Konzett, Delia C. (2003)
Associate Professor of English; B.A., Georgia State University, 1989; M.A., University of Chicago, 1991; Ph.D., ibid., 1997

Korkolis, Yannnis (2009)
Assistant Professor of Mechanical Engineering;

Research Assistant Professor of Biology and Natural Resources; B.S., University of Kansas, 1990; Ph.D., North Carolina State University, 1998

Kraft, L. Gordon (1978)
Professor of Electrical and Computer Engineering; B.S., University of Pennsylvania, 1971; M.S., University of New Hampshire, 1973; Ph.D., University of Connecticut, 1977

Krasner, James (1989)

Krzanowski, James E. (1985)
Professor of Mechanical Engineering and Materials Science; B.E., Stevens Institute of Technology, 1978; M.S., Massachusetts Institute of Technology, 1981; Ph.D., ibid., 1983

Research Associate Professor of Earth, Oceans, and Space and Physics; B.S., University of New Hampshire, 1983; Ph.D., Dartmouth College, 1997

Kun, Andrew L. (2000)
Associate Professor of Electrical and Computer Engineering; B.S., University of New Hampshire, 1992; M.S., ibid., 1994; Ph.D., ibid., 1997

Kunz, Aline M. (1988)
Associate Professor of Political Science; B.A., California State University at Sacramento, 1978; M.A., Cornell University, 1981; Ph.D., ibid., 1987

LaCourse, John R. (1980)
Professor of Electrical and Computer Engineering; B.A., University of Connecticut, 1974; M.S., ibid., 1977; Ph.D., ibid., 1981

Research Assistant Professor of Health Management and Policy; B.S., Plymouth State College, 1989; M.P.H., Tulane University, 1997; Ph.D., John Hopkins University, 2003

Laird, Jo (1979)
Associate Professor of Earth Sciences; B.A., University of California at San Diego, 1969; Ph.D., California Institute of Technology, 1977

Lane, Peter J. (2003)
Associate Professor of Management and Business Administration; B.A., University of New Hampshire, 1981; M.B.A., University of Massachusetts at Amherst, 1992; Ph.D., University of Connecticut, 1996

Lanier, Douglas M. (1990)
Professor of English; B.A., Stetson University, 1977; M.A., Duke University, 1980; Ph.D., ibid., 1988

Langan, Richard (1992)
Affiliate Associate Professor of Zoology; B.A., Lehigh University, 1971; M.S., University of New Hampshire, 1980; Ph.D., ibid., 1992.

LaRocce, Dain (2007)
Assistant Professor of Kinesiology; B.A., University of New Hampshire, 1996; M.S., University of Massachusetts, Amherst, 1998; Ph.D., University of Utah, 2004

Laudano, Andrew P. (1986)
Associate Professor of Biology and Biochemistry and Molecular Biology; B.S., Southern Connecticut State University, 1974; M.S., ibid., 1976; Ph.D., University of California at San Diego, 1981

Professor of Biology and Biochemistry and Molecular Biology; B.A., Johns Hopkins University, 1971; Ph.D., University of Connecticut, 1981

Assistant Professor of Psychology; B.A., Rutgers College, 1998; M.A., Johns Hopkins University, 2000; Ph.D., ibid., 2003

Lee, Lina (1996)
Associate Professor of Spanish and Languages, Literatures, and Cultures; B.A., Fu Jen Catholic University, 1979; M.A., North Texas State University, 1986; Ph.D., University of Texas at Austin, 1992

Professor of Earth, Oceans, and Space and Physics; B.S., Stanford University, 1966; Ph.D., University of Chicago, 1971

Associate Professor of Biology and Environmental Conservation Studies and Environmental Sciences and Forestry; B.S., S.U.N.Y. College of Environmental Science and Forestry at Syracuse, 1973; M.S., University of Alberta, Canada, 1976; Ph.D., University of Illinois at Urbana-Champaign, 1980

Leichtman, Michelle D. (2002)
Associate Professor of Psychology; B.A., Wellesley College, 1985; M.A., Cornell University, 1991; Ph.D., ibid., 1994

Lema, Kimberly J. (2001)
Research Assistant Professor of Psychology; B.A., Rhode Island College, 1994; M.A., ibid., 1996; Ph.D., University of Rhode Island, 1999

Assistant Professor of Psychology; B.S., Worcester State College, 1999; M.S., Rutgers University, 2002; Ph.D., Yale University, 2008

Affiliate Associate Professor of Electrical and Computer Engineering; B.S., St. Louis University, 1969; M.S., University of New Hampshire, 1974; Ph.D., ibid., 1978

Lepler, Jessica M. (2008)
Assistant Professor of History; B.A., Tulane University, 2000; M.A., Brandeis University, 2005; Ph.D., ibid., 2007

Research Associate Professor of Earth, Oceans, and Space and Physics; Ph.D., Dartmouth College, 1997

Lesser, Michael P. (1993)
Research Professor of Microbiology and Marine Sciences; B.A., University of New Hampshire, 1983; M.S., ibid., 1985; Ph.D., University of Maine at Orono, 1989

Lewis, James B. (1989)
Associate Professor of Health Management and Policy; B.A., University of Pittsburgh, 1972; M.M., Northwestern University, 1974; Sc.D., John Hopkins University, 1985

Li, Changsheng (1992)
Affiliate Professor of Natural Resources; B.S., University of Science and Technology of China, 1964; M.S., Chinese Academy of Sciences, 1981; Ph.D., University of Wisconsin and Chinese Academy of Science, 1988

Li, Jun (2004)
Assistant Professor of Management and Business Administration; B.S., Beijing University, P.R. China, 1995; M.S., ibid., 1999; Ph.D., Texas A & M University, 2004
Li, Linyuan (2002)
Associate Professor of Mathematics and Statistics; B.S., Xuzhou Teachers College, 1985; M.S., East China Normal University, 1988; M.S., University of New Mexico, 1997; Ph.D., Michigan State University, 2002

Liccari, Joseph M. (2002)
Associate Professor of Earth Sciences; B.A., State University of New York College at Geneseo, 1992; M.S., Oregon State University, 1995; Ph.D., ibid., 2000

Lieber, Rochelle (1981)
Professor of English; A.B., Vassar College, 1976; Ph.D., Massachusetts Institute of Technology, 1980

Linder, Ernst (1987)
Professor of Mathematics and Statistics; ETH, University of Zurich, Switzerland, 1978; M.S., Union College, 1980; Ph.D., Pennsylvania State University, 1987

Lindsay, Bruce E. (1976)
Professor of Community and Environmental Planning and Environmental and Resource Economics and Tourism Planning and Development; B.A., King’s College, 1971; M.S., University of Massachusetts at Amherst, 1973; Ph.D., ibid., 1976

Lippmann, Thomas C. (2008)
Research Associate Professor of Earth Sciences and Ocean Engineering; B.A., Linfield College, 1985; Ph.D., Oregon State University, 1992

Litvaitis, John A. (1985)
Professor of Wildlife Ecology; B.S., University of New Hampshire, 1975; M.S., Oklahoma State University, 1978; Ph.D., University of Maine at Orono, 1984

Litvaitis, Marianne Klauser (1987)
Professor of Biology and Environmental Conservation Studies and Marine Sciences; B.S., Clemson University, 1980; M.S., ibid., 1982; Ph.D., University of Maine at Orono, 1985

Liu, Yixin (2007)
Assistant Professor of Accounting and Finance and Business Administration; B.A., Nankai University, P.R. China, 1998; M.S., Southern Illinois University at Carbondale, 2000; Ph.D., University of Iowa, 2007

Lockwood, Mary Katherine (2001)
Clinical Associate Professor of Nutritional Sciences and Biology; B.S., Davidson College, 1977; M.S., The Pennsylvania State University, 1980; Ph.D., University of California at Los Angeles, 1989

Lofry, John S. (1991)

Lopate, Clifford (2002)
Research Associate Professor of Earth, Oceans, and Space and Physics; B.A., Swarthmore College, 1982; S.M., University of Chicago, 1983; Ph.D., ibid., 1989

Assistant Professor of Social Work; B.A., University of New Hampshire, 1975; M.S.W., Smith College, 1979; Ph.D., University of New Hampshire, 2004

Loy, J. Brent (1967)
Professor of Biology and Environmental Horticulture and Plant Biology; B.S., Oklahoma State University, 1963; M.S., Colorado State University, 1965; Ph.D., ibid., 1967

Lu, Yan (1996)
Associate Professor of History; B.A., Fudan University, Shanghai, 1982; M.A., Michigan State University, 1989; M.A., Cornell University, 1995; Ph.D., ibid., 1996

Research Associate Professor of Marine Sciences and Zoology; B.A., University of Pennsylvania, 1977; M.A., College of William and Mary, 1981; Ph.D., University of Miami, 1987

Associate Professor of Political Science; B.A., New Mexico State University, 1991; M.A., ibid., 1993; Ph.D., University of South Carolina, 1999

MacFarlane, Lisa (1987)
Professor of English; B.A., Princeton University, 1979; M.A., University of Michigan at Ann Arbor, 1982; Ph.D., ibid., 1987

Macieski, Robert L. (1994)
Affiliate Associate Professor of History and History; B.A., Boston College, 1980; M.A., ibid., 1982; Ph.D., ibid., 1993

Professor of Health Management and Policy; B.S., Boston College, 1964; Ed.D., University of Massachusetts at Amherst, 1984; M.Sc., Dartmouth College, 1997

Mair, Robert G. (1985)
Professor of Psychology; A.B., Brown University, 1972; Sc.M., ibid., 1975; Ph.D., ibid., 1979

Professor of Civil Engineering; B.S., Rutgers, The State University of New Jersey, 1980; M.S., University of Massachusetts at Amherst, 1984; B.S.C.E., ibid., 1987; Ph.D., ibid., 1988

Mallory, Bruce L. (2009)
Professor of Education; B.A., Allegheny College, 1971; M.Ed., ibid., 1972; Ph.D., Vanderbilt University, 1979

Malone, Mary (2006)
Assistant Professor of Political Science; B.A., St. Joseph’s College, 1995; M.A., University of Pittsburgh, 2000; Ph.D., ibid., 2004

Manalo, Alberto B. (1986)
Associate Professor of Community and Environmental Planning and Environmental and Resource Economics and Tourism Planning and Development; B.S., University of the Philippines, 1976; M.S., Kansas State University, 1978; Ph.D., ibid., 1986

Mao, Huiting (2001)
Research Associate Professor of Earth, Oceans, and Space, Affiliate Associate Professor of Earth Sciences; B.S., Nanjing University, P.R. China, 1989; M.S., Chinese Academy of Sciences, P.R. China, 1992; Ph.D., State University of New York at Albany, 1999

Margolin, Aaron B. (1988)
Professor of Biology and Microbiology and Marine Sciences; B.S., University of Arizona, 1982; Ph.D., ibid., 1986

Martí-Olivella, Jaume (2003)
Associate Professor of Spanish and Languages, Literatures, and Cultures; Licenciatura, Universidad de Barcelona, Spain, 1976; M.A., University of Illinois at Urbana-Champaign, 1978; Ph.D., ibid., 1988

Martin, Mary E. (1998)
Research Assistant Professor of Earth, Oceans, and Space; B.S., University of New Hampshire, 1988; Ph.D., ibid., 1994

Associate Professor of Social Work; B.S., University of Southern Maine, 1981; M.S.W., Boston College, 1984; Ph.D., ibid., 1994

Mathews, Dennis E. (1998)
Research Assistant Professor of Plant Biology; B.A., Indiana University at Bloomington, 1976; M.A., ibid., 1982; Ph.D., University of Wisconsin at Madison, 1988

Mathieson, Arthur C. (1965)
Professor of Biology and Plant Biology and Marine Sciences; B.A., University of California at Los Angeles, 1960; M.A., ibid., 1961; Ph.D., University of British Columbia, 1965

Mathur, Virendra K. (1974)
Professor of Chemical Engineering and Environmental Engineering; B.S., Banaras Hindu University, India, 1953; M.S., University of Missouri at Rolla, 1961; Ph.D., ibid., 1970

Professor of Environmental Conservation Studies; B.S., University of Wisconsin at Eau Claire, 1965; M.S., Michigan State University, 1967; Ph.D., ibid., 1969

Professor of Psychology; B.A., University of Michigan at Ann Arbor, 1975; M.A., Case Western Reserve University, 1979; Ph.D., ibid., 1982
Professor of Ocean Engineering and Marine Sciences and Earth Sciences; B.S., University of Rhode Island, 1973; Ph.D., University of California at San Diego, 1979

Maynard, Nelson (2005)
Research Professor of Physics; B.S., University of New Hampshire, 1960; Ph.D., ibid., 1966

Mayne, Howard R. (1985)
Professor of Chemistry; B.Sc., University of Manchester, England, 1974; M.Sc., ibid., 1975; Ph.D., ibid., 1977

McBride, Mkeel (1979)
Professor of English; B.A., Mills College, 1972

McConnell, Mark L. (1991)
Associate Professor of Earth, Oceans, and Space and Physics; B.S., Case Western Reserve University, 1980; Ph.D., University of New Hampshire, 1987

McCron, Sharon M. (2007)
Associate Professor of Mathematics and Statistics; B.A., Dartmouth College, 1988; Ph.D., University of New Hampshire, 1997

Professor of Environmental Sciences; B.A., Amherst College, 1975; Ph.D., Cornell University, 1982

Assistant Professor of Psychology; B.A., Bradley University, 1991; M.A., Ohio State University, 1993; Ph.D., ibid., 1998

McGrath, Robert J. (2002)
Assistant Professor of Health Management and Policy; B.S., University of New Hampshire, 1996; M.S., Harvard University, 1998; Ph.D., Brandeis University, 2006

McHugh, John Philip (1986)
Associate Professor of Mechanical Engineering; B.S., University of Michigan at Ann Arbor, 1978; M.S., ibid., 1981; Ph.D., ibid., 1986

McKibben, R. Bruce (2002)
Research Professor of Earth, Oceans, and Space and Physics; B.A., Harvard University, 1965; M.S., University of Chicago, 1967; Ph.D., ibid., 1972

Associate Professor of English; B.A., Hampshire College, 1977; M.A., Syracuse University, 1998; M.A., University of Virginia, 1998; Ph.D., ibid., 2002

McMahon, Gregory (1988)
Associate Professor of History; B.A., University of Kansas, 1975; M.A., Miami University, Ohio, 1979; Ph.D., Oriental Institute of the University of Chicago, 1988

Assistant Professor of Nursing; B.S., Palm Beach Atlantic College, 1988; B.S.N., Barry College, 1991; Certificate, West Virginia University, 1995; M.S., State University of New York at Stony Brook, 1998

Mebert, Carolyn J. (1979)
Associate Professor of Psychology; B.A., Boston University, 1974; Ph.D., ibid., 1978

Assistant Professor of History; B.A., University of Chicago, 1999; A.M., Harvard University, 2002; Ph.D., ibid., 2007

Melton, Jeffrey S. (2002)
Research Assistant Professor of Civil Engineering and Environmental Engineering; B.A., Hamilton College, 1991; M.S., University of New Hampshire, 1994; Ph.D., Dartmouth College, 1999

Meredith, Dawn C. (1987)
Associate Professor of Physics; B.S., St. John's University, 1980; M.S., California Institute of Technology, 1984; Ph.D., ibid., 1987

Merenda, Michael J. (1977)
Professor of Management and Business Administration; B.A., Northeastern University, 1970; B.S., ibid., 1970; M.B.A., ibid., 1972; Ph.D., University of Massachusetts at Amherst, 1978

Merton, Andrew H. (1972)
Professor of English; B.A., University of New Hampshire, 1967

Associate Professor of Electrical and Computer Engineering; B.S., Clarkson University, 1979; M.S., ibid., 1981; Ph.D., ibid., 1985

Middleton, Michael J. (2001)
Associate Professor of Education; A.B., Harvard University, 1987; Ed.M., ibid., 1990; Ph.D., University of Michigan at Ann Arbor, 2000

Miletikov, Mihail K. (2008)
Assistant Professor of Accounting and Finance and Business Administration; B.B.A., University of Georgia, 2002; Ph.D., ibid., 2008

Miller, Glen P. (1995)
Professor of Chemistry; B.Sc., Clarkson University, 1987; Ph.D., ibid., 1991

Miller, John P. (1992)
Associate Professor of Kinesiology; B.S., Brooklyn College, City University of New York, 1981; M.S., Long Island University, 1983; Ph.D., University of Maryland, 1992

Miller, Lisa C. (1993)
Associate Professor of English; B.A., University of New Hampshire, 1980; M.A., ibid., 1988

Miller, W. Thomas, III (1979)
Professor of Electrical and Computer Engineering; B.S., Pennsylvania State University, 1972; M.S., ibid., 1974; Ph.D., ibid., 1977

Professor of Biology and Plant Biology and Marine Sciences; B.Sc., Punjab University, India, 1968; M.Sc., ibid., 1969; Ph.D., University of Washington, 1974

Affiliate Associate Professor of Education; B.S., Georgia Southern University, 1982; M.A., Hampton University, 1987; Ed.S., College of William and Mary, 1993; Ed.D., ibid., 1995

Mohr, Robert D. (2001)
Associate Professor of Economics; B.A., University of Virginia, 1993; M.S., University of Texas at Austin, 1997; Ph.D., ibid., 2001

Moore, Gregg E. (2008)
Research Assistant Professor of Biology; B.S., Tufts University, 1994; M.S., Boston University, 1997; Ph.D., ibid., 2003

Assistant Professor of English; B.A., University of Massachusetts at Amherst, 1991; M.A., Georgetown University, 1995; Ph.D., Duke University, 2003

Affiliate Assistant Professor of Recreation Management and Policy and Education; B.A., University of Ulster, Northern Ireland, 1983; M.S., Northeastern University, 1988; Ph.D., University of New Hampshire, 1999

Associate Professor of Recreation Management and Policy; B.A., Hanover College, 1974; M.S., Pennsylvania State University, 1976; Re.D., Indiana University at Bloomington, 1981

Associate Professor of Community and Environmental Planning and Environmental and Resource Economics and Tourism Planning and Development; B.S., Oklahoma State University, 1968; M.S., ibid., 1969; Ph.D., ibid., 1972

Research Assistant Professor of Earth, Oceans, and Space, Affiliate Assistant Professor of Earth Sciences, Research Associate Professor of Marine Sciences; B.Sc., University of Wales, England, 1993; Ph.D., ibid., 1998

Moses, Jennifer K. (1990)
Associate Professor of Art and Art History; B.F.A., Temple University, 1984; M.F.A., Indiana University at Bloomington, 1988

Moses, Mark (2005)
Clinical Associate Professor of Family Studies; B.A., Northeastern University, 1971; Ph.D., Ohio University, 1979
<table>
<thead>
<tr>
<th>Name</th>
<th>Year</th>
<th>Degree Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moyer, Judith N.</td>
<td>2001</td>
<td>Research Assistant Professor of History; B.A., University of New Hampshire, 1968; M.A., ibid., 1994; Ph.D., ibid., 2000</td>
</tr>
<tr>
<td>Mulligan, Shelley E.</td>
<td>1996</td>
<td>Associate Professor of Occupational Therapy; M.S., Colorado State University, 1990; Ph.D., University of Washington, 1997</td>
</tr>
<tr>
<td>Murphy, Sharon B.</td>
<td>2005</td>
<td>Assistant Professor of Social Work; B.A., State University of New York at Plattsburgh, 1973; M.S.W., Adelphi University, 1985; Certificate, University of Wisconsin at Madison, 1997; Ph.D., Arizona State University, 1998</td>
</tr>
<tr>
<td>Neehus, Christopher D.</td>
<td>1998</td>
<td>Professor of Biology and Plant Biology and Marine Sciences; B.S., Boston University, 1971; Ph.D., University of New Hampshire, 1982</td>
</tr>
<tr>
<td>Newkirk, Thomas R.</td>
<td>1977</td>
<td>Professor of English; B.A., Oberlin College, 1970; M.Ed., University of Massachusetts at Boston, 1973; Ph.D., University of Texas at Austin, 1977</td>
</tr>
<tr>
<td>Nikshchik, Dmitri A.</td>
<td>2001</td>
<td>Professor of Mathematics and Statistics; B.S., National Technical University of Ukraine, 1994; M.S., ibid., 1996; Ph.D., University of California at Los Angeles, 2001</td>
</tr>
<tr>
<td>Niman, Neil B.</td>
<td>1985</td>
<td>Associate Professor of Economics; B.A., University of California at Santa Cruz, 1978; M.A., University of California at Riverside, 1980; Ph.D., University of Texas at Austin, 1985</td>
</tr>
<tr>
<td>Nimmo, John W.</td>
<td>2003</td>
<td>Associate Professor of Family Studies; B.A., South Australian College of Education, 1985; M.A., Pacific Oaks College, 1992; Ed.D., University of Massachusetts at Amherst, 1992</td>
</tr>
<tr>
<td>Nisbet, Jane A.</td>
<td>1987</td>
<td>Associate Professor of Education; B.S., Simmons College, 1977; M.S., University of Wisconsin at Madison, 1980; Ph.D., ibid., 1982</td>
</tr>
<tr>
<td>O’Brien, Edward J.</td>
<td>1988</td>
<td>Professor of Psychology; B.A., Framingham State College, 1978; M.A., State University of New York at Oswego, 1980; Ph.D., University of Massachusetts at Amherst, 1984</td>
</tr>
<tr>
<td>Ogembo, Justus M.</td>
<td>2000</td>
<td>Associate Professor of Anthropology and Education; B.A., Kenyatta University, Nairobi, Kenya, 1986; M.A., University of Nairobi, 1990; Ph.D., Harvard University, 1997</td>
</tr>
<tr>
<td>Oja, Sharon N.</td>
<td>1977</td>
<td>Professor of Education; B.A., Macalester College, 1966; M.A., University of Minnesota, 1971; Ph.D., ibid., 1978</td>
</tr>
<tr>
<td>Ollinger, Scott V.</td>
<td>2001</td>
<td>Associate Professor of Environmental Sciences and Forestry and Earth, Oceans, and Space; B.S., State University of New York College at Purchase, 1989; M.S., University of New Hampshire, 1992; Ph.D., ibid., 2000</td>
</tr>
<tr>
<td>Onosko, Joseph J.</td>
<td>1989</td>
<td>Associate Professor of Education; B.S., University of Wisconsin at Madison, 1979; M.A., ibid., 1984; Ph.D., ibid., 1988</td>
</tr>
<tr>
<td>Ortmeier-Hooper, Christina</td>
<td>2008</td>
<td>Assistant Professor of English; B.A., University of Massachusetts, Amherst, 1995; M.A.T., University of New Hampshire, 1998; Ph.D., ibid., 2007</td>
</tr>
<tr>
<td>Palace, Michael W.</td>
<td>2009</td>
<td>Research Assistant Professor of Natural Resources and Earth Sciences; B.A., University of Virginia, 1992; M.S., ibid., 1995; Ph.D., University of New Hampshire, 2006</td>
</tr>
<tr>
<td>Payne, Thomas</td>
<td>2008</td>
<td>Assistant Professor of English; B.A., Princeton University, 1984; M.F.A., Columbia University, 1996</td>
</tr>
<tr>
<td>Pazieni, Samuel</td>
<td>2009</td>
<td>Assistant Professor of Chemistry; B.A., Washington and Jefferson College, 2001; M.S., University of Wisconsin, 2003; Ph.D., ibid., 2006</td>
</tr>
<tr>
<td>Pekins, Peter J.</td>
<td>1987</td>
<td>Professor of Wildlife Ecology; B.A., State University of New York College at Plattsburgh, 1976; M.S., University of New Hampshire, 1981; Ph.D., Utah State University, 1988</td>
</tr>
<tr>
<td>Pennock, Jonathan R.</td>
<td>2002</td>
<td>Associate Professor of Natural Resources; B.A., Earlham College, 1978; M.S., University of Delaware, 1981; Ph.D., ibid., 1983</td>
</tr>
<tr>
<td>Perkins, Donna M.</td>
<td>2005</td>
<td>Clinical Assistant Professor of Justice Studies Dual Major; B.A., University of Southern Maine, 1997; M.A., University of New Hampshire, 2000; M.S., ibid., 2003; Ph.D., ibid., 2003</td>
</tr>
<tr>
<td>Pescosolido, Anthony T.</td>
<td>2002</td>
<td>Associate Professor of Management and Business Administration; B.A., Harvard University, 1991; Ph.D., Case Western Reserve University, 2001</td>
</tr>
<tr>
<td>Pfeiffer, Bruce E.</td>
<td>2008</td>
<td>Assistant Professor of Business Administration and Marketing; B.S., University of Colorado at Boulder, 1991; M.B.A., Rockhurst University, 1997; M.S., University of Colorado at Boulder, 2005; Ph.D., University of Cincinnati, 2008</td>
</tr>
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<td>Phan, Loan T.</td>
<td>2004</td>
<td>Associate Professor of Education; B.S., University of Washington, 1994; M.A., University of Nevada at Reno, 1998; Ph.D., ibid., 2001</td>
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<td>Pillemer, David B.</td>
<td>2003</td>
<td>Professor of Psychology; B.A., University of Chicago, 1972; Ed.D., Harvard Graduate School of Education, 1979</td>
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<td>Pistoia, Thomas G.</td>
<td>1971</td>
<td>Professor of Biology and Microbiology; Ph.B., Wayne State University, 1964; M.S., ibid., 1966; Ph.D., University of Utah, 1969</td>
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<td>Planalp, Roy Paul</td>
<td>1987</td>
<td>Associate Professor of Chemistry; S.B., Massachusetts Institute of Technology, 1979; Ph.D., University of California at Berkeley, 1983</td>
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<td>Plante, Catherine A.</td>
<td>1987</td>
<td>Associate Professor of Business Administration; B.A., University of Cincinnati, 1983; M.A., University of Missouri at Columbia, 1985; Ph.D., Ohio State University, 1991</td>
</tr>
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<td>Pohl, Karsten</td>
<td>2000</td>
<td>Associate Professor of Physics; Diploma, Ludwig-Maximilians University, Munich, Germany, 1990; Ph.D., University of Pennsylvania, 1997</td>
</tr>
<tr>
<td>Polasky, Janet L.</td>
<td>1981</td>
<td>Professor of History; B.A., Carleton College, 1973; M.A., Stanford University, 1974; Ph.D., ibid., 1978</td>
</tr>
<tr>
<td>Pollard, James E.</td>
<td>1970</td>
<td>Associate Professor of Biology and Plant Biology; A.B., Duke University, 1965; Ph.D., University of Florida, 1969</td>
</tr>
<tr>
<td>Potter, Sharyn J.</td>
<td>1998</td>
<td>Associate Professor of Sociology; B.S., State University of New York, 1989, M.P.H., Emory University, 1994; Ph.D., ibid., 1998</td>
</tr>
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<td>Prelli, Lawrence J.</td>
<td>1985</td>
<td>Professor of Communication, Affiliate Professor of English; B.S., State University of New York College at Brockport, 1977; M.A., State University of New York at Albany, 1979; Ph.D., Pennsylvania State University, 1984; M.S., University of New Hampshire, 1998</td>
</tr>
<tr>
<td>Prentice, Michael L.</td>
<td>1994</td>
<td>Research Associate Professor of Earth, Oceans, and Space; Ph.D., Brown University, 1988</td>
</tr>
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<td>Pringle, James M.</td>
<td>2001</td>
<td>Associate Professor of Earth, Oceans, and Space and Earth Sciences and Marine Sciences; B.A., Dartmouth College, 1990; Ph.D., Massachusetts Institute of Technology, 1998</td>
</tr>
<tr>
<td>Quinn, Timothy J.</td>
<td>1989</td>
<td>Associate Professor of Kinesiology; B.S., Bradley University, 1979; M.A., Michigan State University, 1983; Ph.D., ibid., 1987</td>
</tr>
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</table>
Raeder, Joachim (2003)  
Professor of Earth, Oceans, and Space; Associate Professor of Physics; B.S., University of Arizona, 1982; Ph.D., ibid., 1989

Ramadonian, Petar (1999)  
Associate Professor of English; B.A., University of Belgrade, Yugoslavia, 1989; M.A., State University of New York at Binghamton, 1993; Ph.D., ibid., 1997

Affiliate Professor of College Teaching; B.A., University of Wisconsin at Madison, 1977; M.A., University of New Hampshire, 1979; Ph.D., ibid., 1984.

Reardon, Lawrence C. (1993)  
Associate Professor of Political Science; B.A., Johns Hopkins University, 1979; M.A., Columbia University, 1983; Ph.D., ibid., 1991

Rebello, Cesar (2002)  
Associate Professor of Sociology; B.A., Rice University, 1996; M.A., Emory University, 1999; Ph.D., ibid., 2002

Reid, R. Daniel (1987)  
Associate Professor of Decision Sciences and Business Administration; B.A., University of Maryland, 1976; M.B.A., Angelo State University, 1978; Ph.D., Ohio State University, 1987

Clinical Associate Professor of Nutritional Sciences; B.S., Florida State University, 1965; M.O.E., University of New Hampshire, 1989; Ph.D., ibid., 1998

Research Professor of Biochemistry and Molecular Biology; B.S., University of New Hampshire, 1959; M.S., ibid., 1961; Ph.D., University of Vermont, 1965

Richards, Harry J. (1979)  
Associate Professor of Education; B.A., State University of New York at Potsdam, 1968; M.S., State University of New York at Albany, 1969; Ph.D., Florida State University, 1978

Ripley, David K. (1992)  
Professor of Music; A.B., Harvard University, 1970; M.M., New England Conservatory of Music, 1977

Rivard, David (2008)  
Associate Professor of English; B.A., University of Massachusetts, 1975; M.F.A., University of Arizona, 1982

Robb, Judith A. (1982)  
Associate Professor of Education; A.B., Connecticut College, 1967; M.A., University of South Florida, 1969; Ed.D., University of Rochester, 1982

Roberts, John M. (1979)  
Associate Professor of Environmental Horticulture and Plant Biology; B.S., Washington State University, 1974; M.S., Purdue University, 1975; Ph.D., ibid., 1977

Robertson, Robert A. (1993)  
Associate Professor of Marine Sciences; B.A., Western Illinois University, 1981; M.A., Oregon State University, 1984; Ph.D., University of Illinois at Urbana-Champaign, 1990

Rock, Barrett N. (1987)  
Professor of Forestry and Natural Resources and Earth, Oceans, and Space; B.S., University of Vermont, 1966; M.S., University of Maryland, 1970; Ph.D., ibid., 1972

Rodgers, Frank G. (1985)  

Rodriguez, Julia E. (1999)  
Associate Professor of History; B.A., New School for Social Research, 1989; M.A., ibid., 1992; M.Phil., Columbia University, 1995; Ph.D., ibid., 2000

Rose, Jake (2009)  
Associate Professor of Accounting and Finance; Ph.D., Texas A & M University, 1998

Rosenberg, Andrew A. (2000)  
Professor of Earth, Oceans, and Space and Marine Sciences and Natural Resources; B.S., University of Massachusetts at Amherst, 1978; M.S., Oregon State University, 1980; Ph.D., Dalhousie University, Canada, 1984

Roudabush, Alice D. (2002)  
Clinical Assistant Professor of Animal Sciences; B.S., Virginia Tech, 1981

Rucinski, Andrzej (1984)  
Professor of Electrical and Computer Engineering; M.S., Technical University of Odessa, Ukraine, 1973; Ph.D., Technical University of Gdansk, Poland, 1982

Ruml, Wheeler (2007)  
Assistant Professor of Computer Science; B.A., Harvard University, 1993; Ph.D., ibid., 2002

Russell, Robert D. (1975)  
Associate Professor of Computer Science; B.A., Yale University, 1965; M.S., Stanford University, 1967; Ph.D., ibid., 1972

Ryan, James M. (1984)  
Professor of Earth, Oceans, and Space and Physics; B.S., University of California at Riverside, 1970; M.S., University of California at San Diego, 1974; Ph.D., University of California at Riverside, 1978

Saavedra, Richard (2005)  
Associate Professor of Management and Business Administration; B.S., University of Texas at El Paso, 1977; M.A., ibid., 1980; Ph.D., University of Michigan at Ann Arbor, 1987

Sabin, Mihaela (2007)  
Associate Professor of Computer Information Systems; B.S., Politehnica University of Bucharest, 1984; M.S.T., University of New Hampshire, 2003; Ph.D., ibid., 2003

Sable, Janet R. (1989)  
Professor of Recreation Management and Policy; B.A., University of Michigan at Ann Arbor, 1975; M.S., Northeastern University, 1981; Ed.D., Boston University, 1988

Safford, Thomas G. (2007)  
Assistant Professor of Sociology; B.A., University of North Carolina, 1989; M.A., Stanford University, 1995; Ph.D., Cornell University, 2004

Assistant Professor of Nursing, Affiliate Assistant Professor of Women's Studies; Diploma, Charity Hospital of Louisiana, 1971; B.S., Alfred University, 1989; M.S., University of Rochester, 1991; Ph.D., Cornell University, 2002

Salvio, Paula M. (1992)  
Professor of Education; B.A., Fordham University, 1981; M.A., Wesleyan University, 1983; Ph.D., University of Rochester, 1989

Salyer, Lucy E. (1989)  
Associate Professor of History; B.A., University of California at San Diego, 1979; M.A., University of California at Berkeley, 1983; Ph.D., ibid., 1989

Samuels, Joanne (2007)  
Assistant Professor of Nursing; A.D.N., Northeastern University, 1975; B.S.N., ibid., 1978; M.S.N., Boston University, 1984; Ph.D., University of Massachusetts at Amherst, 2007

Scala, Dante J. (2007)  
Associate Professor of Political Science; B.A., Villanova University, 1990; M.A., University of Chicago, 1993; Ph.D., ibid., 2000

Schlentrich, Udo (2002)  
Associate Professor of Hospitality Management; B.S., Cornell University, 1970; Ph.D., University of Strathclyde, England, 2001

Schmidt, Torsten (1988)  
Associate Professor of Economics; M.A., University of Florida, 1984; Ph.D., ibid., 1990

Schnepp, Scott (1981)  
Professor of Art and Art History; B.A., Augustana College, 1977; M.F.A., Kansas State University, 1981

Schram, Thomas H. (1990)  
Associate Professor of Education; B.A., Dartmouth College, 1978; B.A., University of Wyoming, 1982; M.Ed., University of Oregon, 1987; Ph.D., ibid., 1990

Schuh, Mary C. (2002)  
Research Assistant Professor of Education; B.S., State University of New York College at Geneseo, 1984; M.S., Syracuse University, 1987; Ph.D., University of New Hampshire, 2002

Scott, Michelle P. (1990)  
Professor of Biology and Zoology; B.A., Wellesley College, 1961; M.A., Harvard University, 1980; Ph.D., ibid., 1984
Assistant Professor of Kinesiology; B.S., New England College, 1994; M.S., University of New Hampshire, 1999; Ph.D., ibid., 2006

Professor of Health Management and Policy; A.B., Bates College, 1966; M.A., University of Arizona, 1968; Ph.D., ibid., 1973; M.P.H., Harvard University, 1979

Scheid, Lee F. (1977)
Professor of Health Management and Policy; A.B., Hobart College, 1967; M.P.A., Pennsylvania State University, 1972; Ph.D., ibid., 1976

Seiler, David E. (1972)
Professor of Music; B.M., University of Wisconsin at Madison, 1961; M.M., ibid., 1965

Seitz, W. Rudolf (1976)
Professor of Chemistry; A.B., Princeton University, 1965; Ph.D., Massachusetts Institute of Technology, 1970

Senier, Siobhan (2000)
Associate Professor of English; A.B., Bowdoin College, 1987; M.A., University of Illinois at Urbana-Champaign, 1992; Ph.D., ibid., 1997

Senyuz, Zeynep (2008)
Assistant Professor of Economics; B.A., Marmara University, Turkey, 2000; M.A., Marmara University, Turkey, 2002; Ph.D., University of California at Riverside, 2008

Shannon, Patrick (2009)
Assistant Professor of Social Work; B.A., State University of New York at Buffalo, 1990; M.S.W., ibid., 1993; Ph.D., Virginia Commonwealth University, 2000

Sharkey, Judy (2001)
Associate Professor of Education; B.A., Franklin Pierce College, 1984; M.A.T., School for International Training, 1990; Ph.D., Pennsylvania State University, 2000

Shea, Christine M. (1994)
Associate Professor of Decision Sciences and Business Administration; B.B.A., Wilfrid Laurier University, Waterloo, Ontario, 1980; M.B.A., ibid., 1984; Ph.D., University of Western Ontario, Canada, 1994

Shen, Junhao (2004)
Assistant Professor of Mathematics and Statistics; B.A., Nanjing University, 1996; Ph.D., University of Pennsylvania, 2004

Sherman, Sarah Way (1984)
Associate Professor of English; B.A., Marlboro College, 1972; Ph.D., Brown University, 1983

Shetty, Sandhya (1988)
Associate Professor of English; B.A., Newrosjee Wadia College, Poona, India, 1977; M.A., University of Poona, India, 1979; M.A., University of Rochester, 1982; Ph.D., ibid., 1987

Shore, Barry (1974)
Professor of Decision Sciences and Business Administration; B.S.E.E., Tufts University, 1960; M.B.A., University of Massachusetts at Amherst, 1963; Ph.D., University of Wisconsin at Madison, 1968

Shore, Samuel D. (1965)
Professor of Mathematics and Statistics; B.S., Juniata College, 1959; M.A., Pennsylvania State University, 1961; Ph.D., ibid., 1964

Short, Frederick T. (1989)
Research Professor of Marine Sciences; B.A., Plymouth State College, 1972; M.S., University of Rhode Island, 1976; Ph.D., University of Alaska at Fairbanks, 1981

Short, Kevin M. (1994)
Professor of Mathematics and Statistics; B.A., University of Rochester, 1985; M.S., ibid., 1985; Ph.D., Imperial College of Science & Technology, London, 1988

Professor of Mathematics and Statistics; M.S., St. Petersburg State University, Russia, 1972; Ph.D., ibid., 1985

Sidor, Inga F. (2008)
Clinical Assistant Professor of Animal Sciences; B.A., Reed College, 1992; D.V.M., Tufts University, 1999

Siggelakis, Susan J. (1988)
Associate Professor of Political Science; B.A., Rutgers University, 1979; M.A., John Hopkins University, 1983; Ph.D., ibid., 1988

Silfer, Karl (2008)
Assistant Professor of Physics; B.S., Temple University, 1995; Ph.D., ibid., 2004

Simmons, Douglas C. (1998)
Assistant Professor of Occupational Therapy; B.S., State University of New York at Buffalo, 1989; M.S., University of New Hampshire, 1998; Ph.D., Nova Southwestern University, 2005

Simos, Evangelos O. (1977)
Professor of Economics; B.S., Athens Graduate School of Business and Economics, 1972; M.A., Northern Illinois University, 1974; Ph.D., ibid., 1977

Research Associate Professor of Earth, Oceans, and Space; B.S., University of California at Irvine, 1993; M.S., ibid., 1995; Ph.D., ibid., 1998

Smith, Andrew E. (2005)
Associate Professor of Political Science; B.A., University of Cincinnati, 1983; M.A., ibid., 1987; Ph.D., ibid., 1997

Smith, Charles W., III (2003)
Research Professor of Earth, Oceans, and Space and Physics; B.S., University of Maryland, 1977; M.S., College of William and Mary, 1979; Ph.D., ibid., 1981

Smith, David R. (1979)
Professor of Art and Art History; A.B., Washington University, 1968; M.A., Columbia University, 1971; M.Phil., ibid., 1978; Ph.D., ibid., 1978

Smith, Nicholas J. (2002)
Associate Professor of Philosophy; B.A., Vassar College, 1994; J.D., State University of New York at Buffalo, 1997; Ph.D., Vanderbilt University, 2002

Sohl, Jeffrey E. (1983)
Professor of Decision Sciences and Business Administration; B.B.A., Villanova University, 1972; M.B.A., University of Maryland, 1974; Ph.D., ibid., 1983

Sonnenmeier, Rae M. (1996)
Clinical Associate Professor of Communication Sciences and Disorders; B.S.Ed., State University of New York: College at Buffalo, 1988; M.A., State University of New York at Buffalo, 1984; Ph.D., ibid., 1999

Assistant Professor of Political Science; B.A., Harvard University, 1989; M.A., Princeton University, 1996; Ph.D., ibid., 2003

Stibler, Robert (1978)
Professor of Music; B.S., Susquehanna University, 1970; M.M., Catholic University of America, 1973; D.M.A., ibid., 1979

Associate Professor of Psychology; B.S., Georgia Institute of Technology, 1977; M.S., ibid., 1982; Ph.D., ibid., 1983

Straus, Murray A. (1968)
Professor of Sociology; B.A., University of Wisconsin at Madison, 1948; M.S., ibid., 1949; Ph.D., ibid., 1956

Clinical Assistant Professor of Microbiology and Medical Laboratory Science, Clinical Professor of Marine Sciences; B.S., University of Miami (Fla.), 1992; Ph.D., University of Maryland, 1999

Swartz, Erik E. (2000)
Associate Professor of Kinesiology; B.S., St. Bonaventure University, 1993; M.A., Western Michigan University, 1996; Ph.D., University of Toledo, 2000

Swift, M. Robinson (1976)
Professor of Mechanical Engineering and Ocean Engineering; B.S., University of New Hampshire, 1971; Ph.D., ibid., 1974

Tagliaferro, Anthony R. (1978)
Professor of Nutritional Sciences; B.S., Boston College, 1968; M.S., Lehigh University, 1972; Ph.D., Cornell University, 1978
Research Professor of Earth, Oceans, and Space and Earth Sciences; B.S., Florida Institute of Technology, 1973; M.S., University of Wisconsin at Madison, 1977; Ph.D., ibid., 1981

Taylor, James T. (1977)  
Professor of Zoology; B.S., University of Tennessee, 1966; M.S., ibid., 1968; Ph.D., Oregon State University, 1977

Professor of Biology and Animal Sciences; B.A., Carson-Newman College, 1975; M.S., Auburn University, 1978; Ph.D., Mississippi State University, 1981

Thein, May-Win L. (1999)  
Associate Professor of Mechanical Engineering; B.S., Lehigh University, 1991; M.S., ibid., 1992; Ph.D., Oklahoma State University, 1999

Tisa, Louis S. (1994)  
Professor of Biology and Microbiology and Genetics Program; B.Sc.(Hon.), University of Windsor, Canada, 1976; M.Sc., ibid., 1979; Ph.D., University of Wisconsin at Madison, 1987


Tomellini, Sterling A. (1985)  
Professor of Chemistry; B.S., University of Rhode Island, 1979; Ph.D., Rutgers, The State University of New Jersey, 1985

Torbert, Roy B. (1989)  
Professor of Physics; B.A., Princeton University, 1971; Ph.D., University of California at Berkeley, 1979

Townson, David H. (1997)  
Associate Professor of Biology and Animal Sciences; B.S., Michigan State University, 1983; M.S., University of Wisconsin at Madison, 1988; Ph.D., Ohio State University, 1993

Tracy, Susanne M. (2005)  
Assistant Professor of Nursing; B.S.N., Niagara University, 1967; M.N., University of South Carolina, 1975; M.A., Rivier College, 1992; Ph.D., University of Rhode Island, 2005

Associate Professor of Philosophy; B.A., Antioch College, 1972; M.A., University of Massachusetts at Amherst, 1980; Ph.D., ibid., 1982

Trubowitz, Rachel (1986)  
Associate Professor of English; B.A., Barnard College, 1976; M.A., Columbia University, 1977; M.Phil., ibid., 1980; Ph.D., ibid., 1985

Tsang, Paul C. (1989)  
Professor of Biology and Animal Sciences and Marine Sciences; B.A., Cornell University, 1978; Ph.D., Boston University, 1986

Tsukrov, Igor I. (1997)  
Professor of Mechanical Engineering, Associate Professor of Materials Science and Ocean Engineering; B.S., Dnepropetrovsk University, Ukraine, 1986; M.S., Tufts University, 1993; Ph.D., ibid., 1996

Tucker, Corinna Jenkins (2000)  
Associate Professor of Family Studies; B.A., Clark University, 1992; M.S., Pennsylvania State University, 1995; Ph.D., ibid., 1998

Tucker, James (1992)  
Associate Professor of Sociology; B.S., University of Virginia, 1981; M.A., ibid., 1987; Ph.D., ibid., 1992

Professor of Sociology; B.A., University of Western Ontario, Canada, 1985; Ph.D., University of California at San Francisco, 1990

Associate Professor of Music; B.A., Princeton University, 1974; M.M., Westminster Choir College, 1978; M.A., Smith College, 1982; Ph.D., Harvard University, 1988

Vagts, Peggy A. (1978)  
Professor of Music; B.M., Morningside College, 1976; M.M., University of Wisconsin at Madison, 1978

Van Gundy, Karen (2001)  
Associate Professor of Sociology; B.S., Virginia Polytechnic Institute and State University, 1994; M.A., University of Cincinnati, 1998; Ph.D., University of Miami (Fla.), 2001

Van Zandt, Cynthia J. (1998)  
Associate Professor of History; B.A., University of Virginia, 1984; M.A., University of Connecticut, 1991; Ph.D., ibid., 1998

Research Associate Professor of Earth, Oceans, and Space, Affiliate Associate Professor of Earth Sciences, Research Associate Professor of Marine Sciences; B.S., Hope College, 1986; M.S., University of Massachusetts at Amherst, 1998; Ph.D., University of New Hampshire, 2005

VanDeever, Stacy D. (1998)  
Associate Professor of Political Science; B.A., University of Maryland, 1994; Ph.D., ibid., 1997

Varki, Elizabeth (1997)  
Associate Professor of Computer Science; M.S., Villanova University, 1992; Ph.D., Vanderbilt University, 1997

Research Assistant Professor of Earth, Oceans, and Space and Earth Sciences; B.A., Hartwick College, 1991; M.S., University of New Hampshire, 1993; Ph.D., ibid., 2000

Vasquez, Bernard J. (1999)  
Research Associate Professor of Earth, Oceans, and Space and Physics; B.S., Rensselaer Polytechnic Institute, 1987; Ph.D., University of Maryland, 1992

Professor of Environmental Engineering and Chemical Engineering; B.Tech., University of Madras, India, 1974; M.S., State University of New York at Buffalo, 1984; Ph.D., Clarkson University, 1988

Veal, Larry J. (1982)  
Professor of Music; B.S., University of Illinois at Urbana-Champaign, 1974; M.M., ibid., 1976

Venkatachalam, A. R. (1992)  
Professor of Decision Sciences and Business Administration; B.Eng., University of Madras, India, 1980; M.B.A., Indian Institute of Management, Calcutta, 1983; Ph.D., University of Alabama, 1990

Vroman, Kerryellen (2005)  
Assistant Professor of Occupational Therapy; B.S., Massey University, 1990; M.H.S., McMaster University, 1992; Ph.D., Massey University, 2005

Associate Professor of Kinesiology; B.S., Colgate University, 1975; Ph.D., Pennsylvania State University, 1982

Wake, Cameron P. (1995)  
Research Associate Professor of Earth, Oceans, and Space and Earth Sciences and Marine Sciences; B.S., University of Ottawa, Canada, 1984; M.A., Wilfrid Laurier University, Waterloo, Ontario, 1987; Ph.D., University of New Hampshire, 1993

Professor of Marine Sciences; B.A., Miami University, Ohio, 1969; M.S., Cornell University, 1973; Ph.D., ibid., 1976

Research Assistant Professor of Sociology; B.A., Bates College, 1989; M.S., University of New Hampshire, 1997; Ph.D., ibid., 2002

Wang, Le (2008)  
Assistant Professor of Economics; B.A., Jinan University, P.R. China, 2001; M.A., Southern Methodist University, 2002; Ph.D., ibid., 2006

Wansart, William L. (1985)  
Associate Professor of Education; B.S., State University of New York at Buffalo, 1972; M.A., University of Northern Colorado, 1975; Ed.D., ibid., 1984

Research Associate Professor of Earth Sciences and Marine Sciences and Ocean Engineering; B.A., University of New Hampshire, 1972; M.S., University of South Carolina, 1974; Ph.D., ibid., 1978

Ward, Sally (1980)  
Professor of Sociology; B.A., University of Maryland, 1970; M.A., Brown University, 1974; Ph.D., ibid., 1977
Ware, Colin (2000)
Professor of Ocean Engineering and Computer Science and Marine Sciences; B.Sc., Durham University, England, 1972; Ph.D., University of Toronto, Canada, 1980; M.Math., University of Waterloo, Canada, 1985

Warner, Rebecca M. (1981)
Professor of Psychology; B.A., Carnegie Mellon University, 1973; Ph.D., Harvard University, 1978

Watson, Winsor H., III (1978)
Professor of Biology and Zoology and Marine Sciences; B.A., Wesleyan University, 1972; Ph.D., University of Massachusetts at Amherst, 1978

Watters, David H. (1978)
Professor of English; A.B., Dartmouth College, 1972; Ph.D., Brown University, 1979

Webster, Penelope E. (1987)
Associate Professor of Communication Sciences and Disorders; B.S., Northeastern University, 1976; M.A., State University of New York College at Geneseo, 1978; Ed.D., Boston University, 1984

Weiner, James L. (1979)
Associate Professor of Computer Science; B.S., University of Massachusetts at Amherst, 1973; M.S., University of Wisconsin at Madison, 1975; Ph.D., University of California at Los Angeles, 1979

Weisman, Gary R. (1977)
Professor of Chemistry; B.S., University of Kentucky, 1971; Ph.D., University of Wisconsin at Madison, 1976

Wells, Melissa (2004)
Assistant Professor of Social Work; B.A., University of New Hampshire, 1991; M.S.W., University of Minnesota Duluth, 1995; Ph.D., University of New Hampshire, 2003

Wharton-McDonald, Ruth M. (1997)

Assistant Professor of Microbiology; B.A., University of San Diego, 1991; Ph.D., Oregon State University, 2000

Whitaker, Cord (2008)
Assistant Professor of English; B.A., Yale University, 2001; M.A., Duke University, 2005

White, Barbara Prudhomme (1998)
Associate Professor of Occupational Therapy; B.S., University of New Hampshire, 1978; Ph.D., University of Minnesota, 1997

White, Christopher M. (2006)
Assistant Professor of Mechanical Engineering; M.Sc., Yale University, 1999; Ph.D., ibid., 2001

Professor of Economics; A.B., Wheaton College, 1973; Ph.D., Pennsylvania State University, 1980

Assistant Professor of English; B.A., University of the District of Columbia, 1999; M.A., University of Connecticut, 2001; Ph.D., ibid., 2007

Wilder, Allison (2009)
Assistant Professor of Recreation Management and Policy; B.S., Ithaca College, 1984; M.S., SUNY - Cortland, 1992; Ph.D., Virginia Commonwealth University, 1992

Williams, Ann J. (2008)
Assistant Professor of English; B.A., University of New Hampshire, 1980; M.A., ibid., 1990; M.F.A., University of Iowa, 1997

Williams, Julie E. (2002)
Affiliate Associate Professor of Psychology; B.A., College of William and Mary, 1979; Ph.D., University of Tennessee, 1986

Williams-Barnard, Carol L. (1978)
Associate Professor of Nursing; A.S., Vermont College, 1970; B.S.N., Catholic University of America, 1972; M.S.N., ibid., 1975; D.N.Sc., ibid., 1979; Ph.D., ibid., 2007

Willkomm, Therese (2005)
Clinical Assistant Professor of Occupational Therapy; B.S., University of Wisconsin at Stout, 1982; M.S., Drake University, 1984; Ph.D., University of Pittsburgh, 1997

Witzling, Mara R. (1977)
Professor of Art and Art History; B.A., Queens College, City University of New York, 1967; M.A., Cornell University, 1970; Ph.D., ibid., 1978

Wolper, Ethel Sara (1996)
Associate Professor of History; B.A., University of Chicago, 1982; M.A., ibid., 1984; Ph.D., University of California at Los Angeles, 1994

Wong, Edward H. (1978)
Professor of Chemistry; B.S., University of California at Berkeley, 1968; Ph.D., Harvard University, 1975

Wood, Craig H. (1990)
Associate Professor of Decision Sciences and Business Administration; A.B., Stanford University, 1972; M.B.A., University of Chicago, 1974; Ph.D., Ohio State University, 1991

Woods, Leah (2007)
Assistant Professor of Art and Art History; B.A., DePaul University, 1994; M.F.A., Rochester Institute of Technology, 2000

Professor of Economics and Health Management and Policy; B.S., Haverford College, 1965; Ph.D., Washington University, 1972

Professor of Psychology; B.A., Harvard University, 1967; M.A., Princeton University, 1969; M.A., Yale University, 1973; Ph.D., ibid., 1975

Wraith, Jon M. (2008)
Professor of Natural Resources; B.S., Humboldt State University, 1984; M.S., Utah State University, 1986; Ph.D., ibid., 1989

Wright, Steven C. (2002)
Associate Professor of Kinesiology; B.S., St. Lawrence University, 1978; M.Ed., Boston University, 1980; Ed.D., ibid., 1992

Xiao, Xiangming (1997)
Research Associate Professor of Earth, Oceans, and Space; B.S., Xiamen University, 1982; M.S., Chinese University of Science and Technology, 1987; Ph.D., Colorado State University, 1994

Xie, Wenjuan (2008)
Assistant Professor of Accounting and Finance and Business Administration; B.B.A., Peking University, 2000; M.A., ibid., 2002; Ph.D., University of Wisconsin at Madison, 2008

Xu, Le (2003)
Associate Professor of Accounting and Finance, Assistant Professor of Business Administration; B.S., Beijing University, P.R. China, 1999; Ph.D., University of Massachusetts at Amherst, 2003

Yalcinkaya, Goksel (2007)
Assistant Professor of Marketing and Business Administration; B.S., Ege University, Turkey, 1994; M.B.A., Suffolk University, 1998; M.S., Northeastern University, 2003; Ph.D., Michigan State University, 2007

Yount, Janet Aikins (1979)
Professor of English; B.A., Grinnell College, 1972; M.S., University of Chicago, 1973; Ph.D., ibid., 1980

Professor of Chemistry; B.A., Messiah College, 1981; M.S., State University of New York College at Buffalo, 1984; Ph.D., University of Notre Dame, 1989

Assistant Professor of Decision Sciences and Business Administration; B.S., Zhejiang University, P.R. China, 1997; M.S., University of Memphis, 1999; M.A., Ohio State University, 2002; Ph.D., ibid., 2003

Zhou, Kuan (2004)
Assistant Professor of Electrical and Computer Engineering; B.S., Huazhong University of Science and Technology, P.R. China, 1996; M.S., Chinese Academy of Sciences, P.R. China, 1999; M.S., Rensselaer Polytechnic Institute, 2004; Ph.D., ibid., 2004

Zunz, Sharyn J. (1993)
Associate Professor of Social Work; B.A., University of Wisconsin at Madison, 1970; M.S.W., New York University, 1972; Ph.D., Fordham University, 1993
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