# Degree Programs

## Accounting (M.S.)

The Master of Science (M.S.) in Accounting program is a fully online program designed to provide students with the skill set critical to a successful professional career in public and private accounting. Qualified students can meet the 150-hour educational requirements for C.P.A. (Certified Public Accountant) licensing. The program may be completed on a part-time or full-time basis. Students must complete 30 credits to fulfill all degree requirements. The Advanced Business Certificate in Accounting Analytics is also available to M.S. in Accounting students.

Required Course:ACCT 5505.

Approved Electives:(27 credits required) ACCT 5122, 5124, 5243, 5260, 5327, 5532, 5533, 5535, 5543, 5545, 5546, 5549, 5553, 5554, 5555, 5557, 5559, 5563, 5570, 5571, 5575, 5582, 5583, 5584, and 5894.

## Advanced Manufacturing for Energy Systems (M.S.)

The Master of Science (M.S.) in Advanced Manufacturing for Energy Systems prepares students in theory, research and applications of advanced manufacturing for energy specific disciplines. It requires students to complete 21 credit hours of coursework, nine credit hours of thesis research, and a M.S. thesis. Students choose from one of three areas of concentration: Advanced Materials, Processing, or Systems and Controls.

Core Requirements.All students are required to complete a three credit course in engineering analysis, a three credit course in computer aided engineering, and a three credit course in engineering communication, to be determined by the program director. Students are required to choose one of the following concentrations: Advanced Materials, Processing, or Sensing and Controls, and complete two core courses (six credits) corresponding to the chosen area of concentration.

Advanced Materials Requirements:MSE 5001 and 5332.

Processing Requirements:ME 5130 or CHEG 5311; and CHEG 5321.

Sensing and Controls Requirements:A three credit introductory course in energy management in manufacturing and a three credit introductory course in smart and green manufacturing.

Elective Requirement: A minimum of two elective courses (six credits) from the list of elective courses for each area of concentration.

Research Requirement: Nine credits of GRAD 5950, as stipulated in the Graduate Catalog (Plan A).

## Agricultural and Resource Economics (Ph.D.)

The Department of Agricultural and Resource Economics offers a Doctor of Philosophy (Ph.D.) in Agricultural and Resource Economics. The Ph.D. program is designed to be completed in four to five years, with the first two years focused on coursework and the final two to three years on research and completion of the dissertation. Due to course sequencing, students are normally only admitted for the fall semester.

Ph.D. Requirements

Students are required to satisfactorily complete twelve courses: eight core courses in economic theory and quantitative methods, three courses in an area specialization, and one elective.

Required Courses. The core courses in economic theory and quantitative methods are: ARE 6311, 6313; ECON 6201, 6202, 6211, 6301, 6310 and 6311. The three courses that define an area of specialization are set in consultation with the student’s advisory committee. The elective course must be at the 6000 level in ARE that is not part of the core or area of specialization requirements. Exemptions or substitutions to a particular course requirement based upon courses previously taken in another program of study or alternative courses offered at the University of Connecticut are subject to approval of the Departmental Ph.D. Steering Committee.

Qualifying examination. All students enrolled in the Ph.D. program must pass a qualifying examination in applied microeconometrics. This examination is based on material presented in the following courses: ARE 6311, 6313; ECON 6201, 6211, and 6310 (or equivalent if the department provides an alternative course as an approved substitute). Unless granted an exemption from the Qualifying Examination Committee, students must take the qualifying examination offered immediately following the completion of the spring semester of their first year. The qualifying examination will occur once per year and students will be given at most two opportunities to pass the examination. Further, unless granted an exemption from the Qualifying Examination Committee, students who fail the qualifying examination must take the first subsequent examination offered. Exemptions will only be granted according to recognized college and university policy.

Area of Specialization Exam. Students who have passed the qualifying examinations in applied microeconometrics or have obtained an exemption and who have filed an approved Plan of Study with the Graduate School may take this exam. The examination covers course work in the Area of Specialization and related courses. The exam is administered by the student's advisory committee, which is also responsible for its format and scheduling. The exam may be of the traditional type or may take the form of a high quality independent research paper.

Dissertation Proposal. Students must successfully defend a proposal that outlines the research constituting their dissertation. Satisfactory completion of the dissertation proposal is determined by the student’s advisory committee.

## Animal Science (M.S., Ph.D.)

The Department of Animal Science offers two graduate degrees: Masters of Science (M.S.) and Doctor of Philosophy (Ph.D.). The M.S. degree may be awarded either as a thesis (Plan A) or non-thesis degree (Plan B). The Animal Science department is diverse, with a large variety of student and faculty interests. As a result, each student's program is quite flexible, and is shaped by the student in consultation with their major advisor and Graduate Advisory Committee. Courses elected shall be consistent with the student’s objectives and related to the field in which the degree is to be taken. The M.S. and Ph.D. degrees in Animal Science offer several areas of concentration within the Animal Science Field of Study: Animal Genetics and Genomics, Stem Cell and Regenerative Biology, Animal Physiology, Meat Science, and Food Microbiology and Safety. The Ph.D. degree requires demonstrated capabilities for conducting independent research plus related scholarly attributes.

Requirements.The M.S. and the Ph.D. requirements in Animal Science conform to the Graduate School requirements. Both degrees have specific course requirements described below. Additional course requirements for the M.S. and Ph.D. in Animal Science are determined by the student’s advisory committee consistent with the minimum requirements specified by The Graduate School.

### Plan A (Research/Thesis) M.S. in Animal Science

**S**tudents must complete a minimum of 30 credits, of which a minimum of 21 credits must include advanced coursework, with no more than three of these credits coming from independent studies or ANSC 5692. A minimum of nine credits must include GRAD 5950 or 5960.

**Required Courses.** ANSC 5693 and 5694. The plan of study shall consist largely of courses at the 5000 level or above. No more than six credits of coursework at the 3000 or 4000 level may be counted towards the degree.

Final Exam and Thesis Defense. Students must defend their thesis at a public seminar. The defense must be completed no later than one year after completion of coursework or the thesis. Following the presentation, the Advisory Committee will administer a final examination. The format of this examination is at the discretion of the Major Advisor/Advisory Committee, and its purpose is to assess the student’s understanding of the area that they have emphasized, their research, and their thesis.

Publication. Students must submit at least one first-author manuscript, suitable for publication, to their Major Advisor before defending their thesis. In some circumstances, the Major Advisor, in consultation with the Advisory Committee, may modify or waive this requirement.

### Plan B (Non-thesis) M.S. in Animal Science

Students must complete a minimum of 30 credits, of which a minimum of 24 credits must include formal coursework, and a minimum of four credits must include ANSC 5692 or 5699. The research component of the Plan B program can involve library research, assistance on laboratory-based projects, computer or data analysis, or any form of scholarly activity approved by the Major Advisor and the Advisory Committee.

Required Courses. ANSC 5694. No more than six credits of coursework at the 3000 or 4000 level may be counted towards the degree.

**Final Exam.** After completion of all required courses and the research component, the student is required to give a formal presentation of their work. The presentation is open to all faculty members in the department and can be scheduled as part of the departmental seminar series. Following the presentation, the Graduate Advisory Committee will administer a final examination. The format of this examination is at the discretion of the major advisor and the Graduate Advisory Committee, and its purpose is to assess the student’s understanding of the area that they have emphasized. The final examination must be completed no later than one year after completion of coursework.

Ph.D. in Animal Science

Each Ph.D. plan of study must include 30 credits of course work beyond the baccalaureate degree or its equivalent, or at least 15 credits beyond the master’s degree or other advanced degree in the same or a closely related field of study.

Required Courses.Ph.D. students must complete one credit of ANSC 5693 and two credits of ANSC 5694. Students who have previously completed one credit of ANSC 5693 are exempt from that requirement. In addition to course work, satisfactory completion of at least 15-credits of GRAD 6950 or 6960.

General Exam. Report on the General Examination, indicating the result of the entire examination and the names of all faculty members participating, must be signed by the members of the Graduate Advisory Committee and submitted to the Office of the Registrar no later than the date of the submission of the Dissertation Proposal (see below).

Dissertation Proposal. Each student must submit a dissertation proposal. The written dissertation proposal must first be approved by the Advisory Committee, then two copies must be submitted to the Department Head at least two weeks in advance of the dissertation proposal defense for external review. A public presentation of the student’s research dissertation proposal is to be held prior to final approval. The dissertation proposal should be submitted to the Office of the Registrar for final approval by the time the student has completed the ninth credit of GRAD 6950 or 6960. The approved Dissertation Proposal must be on file in the Office of the Registrar before the public announcement of the oral defense of the dissertation, but it is highly advisable to complete the dissertation proposal 12 to 18-months in advance.

Final Exam and Doctoral Dissertation Defense. Students must defend their dissertation at a well- advertised, public seminar. Following the presentation, the Advisory Committee will administer a final examination. The format of this examination is at the discretion of the Major Advisor/Advisory Committee, and its purpose is to assess the student’s understanding of the area that they have emphasized, their research, and their dissertation.

Publication. Students must submit at least one first-author, full-length, primary research manuscript, suitable for peer-reviewed publication, to their Major Advisor before defending their dissertation. This requirement does not include reviews, abstracts, or technical papers. In some circumstances, the Major Advisor, in consultation with the Advisory Committee, may modify or waive this requirement.

## Anthropology (M.A., Ph.D.)

The Department of Anthropology offers two graduate degrees: Master of Arts (M.A.) and Doctor of Philosophy (Ph.D.).

Requirements: The M.A. and the Ph.D. requirements in Anthropology conform to the Graduate School requirements as outlined in the Academic Regulations section of this catalog. Specific course requirements for the M.A. and Ph.D. in Anthropology are determined by the student’s advisory committee consistent with the minimum requirements specified by the Graduate School.

## Applied and Resource Economics (M.S.)

The Department of Agricultural and Resource Economics offers Master of Science (M.S.) in Applied and Resource Economics, which may be awarded along the way to a Ph.D. or as a terminal degree. In addition, UConn undergraduates who receive a B.S. degree from the Department can earn the M.S. degree through a 4+1 fast-track (accelerated) program. The terminal M.S. provides rigorous training in microeconomics and quantitative methods, and their applications to economic and policy issues involving food, health, natural resources, and the environment. Students completing this degree go on to work in the private sector, government agencies, international organizations, or continue on for a Ph.D.

Requirements.Students may attain the terminal M.S. degree by pursuing one of three plans of study. Regardless of the plan selected, students must satisfactorily meet the following requirements: complete 30 credits of total coursework; complete 12 credits from ARE or ECON courses at the 5000 level or above (independent study and internship credits cannot be used to satisfy this requirement); take one master’s level course in microeconomic theory (ARE 5201 or ECON 5201) and one master’s level course in econometrics (ARE 5311). The remaining requirements unique to each plan of study are stated below.

Plan A (Thesis). Coursework includes the six credits from the M.S. common core (ARE 5201 or ECON 5201 and ARE 5311). Students must complete nine credits of GRAD 5950 and successfully defend a thesis. The additional required 21 credits may include a maximum of three credits of ARE 5499 or 5991.

Plan B (Major Paper). Coursework includes the six credits from the M.S. common core (ARE 5201 or ECON 5201 and ARE 5311). Students must complete three to six credits of ARE 5499 associated with writing the major paper. The grade for the independent study shall be issued after public presentation of the written paper. The additional 18 – 21 credits to complete the required 30 may include a maximum of up to six credits of ARE 5499 and/or 5991.

Plan B (Coursework). Coursework includes the six credits from the M.S. common core (ARE 5201 or ECON 5201 and ARE 5311). The additional 24 credits to complete the required 30 may include a maximum of up to six credits of ARE 5499 and/or 5991.

**The 4+1 (Fast-Track) Program:** This fast-track to the M.S. is designed for students who receive their B.S. degree from the ARE Department and then go on to pursue the M.S. in Applied and Resource Economics. The program is designed to allow students who enroll in graduate school in the summer following completion of their BS to complete all requirements for the M.S. within one calendar year. To complete the degree in this accelerated timeframe, the 120 credits students take for their B.S. should include six graduate credits of required courses (ARE 5201or ECON 5201, and ARE 5311) that can be included on the student’s undergraduate plan of study and also applied to the M.S. requirements of 30 credits. Once students earn their B.S., they must take 24 more M.S. credits, following one of the three plans of study described above. Students pursuing a Plan A or Plan B (Major Paper) plan of study will take up to six credits of GRAD 5950 (for Plan A) or ARE 5499 and/or 5991 (for Plan B (Major Paper) during the summer between the 4th and 5th year, working to develop an applied project or thesis with a faculty advisor. Students pursuing a Plan B (Coursework) plan of study will take up to six credits of approved electives during that summer.

## Applied Biochemistry and Cell Biology (M.S.)

The Master of Science in Applied Biochemistry and Cell Biology is a professional master’s degree intended to provide students with a comprehensive education in Biochemistry and Cell Biology. By combining coursework, internships and advanced laboratory training, this program prepares students for employment in the biotechnology, pharmaceutical, diagnostic, government, and academic sectors.

Requirements: A minimum total of 33 credits, an internship and passing an exit examination. Students are required to take 18 credits of core conceptual courses, eight credits of Practical Coursework Options (including workshops, laboratory or research courses), and seven credits of professional master’s cohort courses (communication skills, Frontiers seminars, business practices, internship). In special circumstances the Advisory Committee may waive some of these requirements.

Conceptual Courses. A total of 18 credits chosen from MCB 3211, 3219, 4026W, 4211, 5003, 5008, 5012, 5013, 5014, 5200, 5217, 5240, 5250, 5255, 5280, 5284, 5454, 5471; PHRX 3001, 5681, 5895; PHAR 5471, 5472, 6455; PNB 3260; or another course with prior approval from the Applied Biochemistry and Cell Biology Program Director.

Practical Coursework Options. Eight credits required. These credits must be selected from MCB 5427, 5430, 5670, 5671, 5672, 6897; MCB 5895 when taught as: Introduction to Flow Cytometry, Introduction to Microscopy, Practical Applications of Cell Culture, Multimode Plate Reader, Protein Purification, Molecular Graphics, Ligand Binding; or another course with prior approval from Applied Biochemistry and Cell Biology program director.

Professional Master’s Cohort Courses. A minimum of seven credits required. These must include MCB 5490, two credits of MCB 5491, MCB 5900, and an internship (e.g. GRAD 5930). Other possible classes include MCB 5910; MCB 5080; or another course with prior approval from Applied Biochemistry and Cell Biology program director.

Note: Only six credits total of 3000 and 4000 level courses may be applied to the graduate degree.

## Applied Financial Mathematics (M.S.)

The Master of Science in Applied Financial Mathematics is a professional degree that focuses on rigorous mathematical modeling in finance, investment and risk management to prepare a graduate for analytic work across a wide spectrum of the financial services industry. It includes a practical component often fulfilled by an internship. The Master of Science in Applied Financial Mathematics with concentration in Actuarial Science includes a component of study directed towards actuarial science.

Applied Financial Math (MSAFM)

Students pass five core courses, MATH 5600, 5620, 5650, 5660 and one course from the following options: STAT 5361 or MATH 5637; pass at least two finance focused courses from ACCT 5327; FNCE 5202, 5504, 5512, 5532, 5533, 6201, 6203 and MATH 5661; pass at least six credits of practicum courses from GRAD 5900; MATH 5600, 5661, 5670, 5671 and 5850 with at least one of these credits in MATH 5850 for an internship. The remaining courses must be chosen from a list of elective courses approved by the department. In addition, the student is required either to pass an Exit Project or to pass two Society of Actuaries examinations. The format and structure of the exit project is determined by the student in collaboration with their advisor and must be approved by the advisor. The actuarial examinations may be passed prior to admission.

Applied Financial Math (MSAFM) with concentration in Actuarial Science.The MSAFM with concentration in Actuarial Science has the same requirements as the MSAFM degree except the student is only required to take one finance focused course and must take at least one advanced actuarial course from MATH 5630, 5631, 5637, 5638, 5639, 5640 and 5641.

## Applied Genomics (M.S.)

The Master of Science in Applied Genomics is a professional science master’s program designed to take advantage of the rapidly advancing area in genomics and train students for employment in the biotechnology, pharmaceutical, diagnostic, government, and academic sectors. This is achieved by combining coursework with advanced laboratory training and internships.

Requirements:At least 33 credits of course work, an internship and passing an exit examination. Credits are selected from an approved menu of courses as follows: 18 credits in conceptual course options, eight credits in practical coursework (laboratory or research experience) and seven credits in professional master’s cohort courses (communication skills, Frontiers seminars, business practices, internship). In special circumstances the Advisory Committee may waive some of these requirements.

Conceptual Course Options. A minimum of 18 credits from MCB 3211, 4211, 4219, 4416, 5210, 5217, 5240, 5284, 5426, 5445, 5452, 5454, 5471, 5681, MCB 5895 when taught as Concepts of Genetic Analysis; MCB 5884; EEB 5333, 5348, 5349, 5449; KINS 6094 when taught as Inherited Metabolic Disorders; PHAR 4000, 5471, 5472, 6455, PHAR 6484; PLSC 3230; PNB 3260, 5350, 5395; STAT 5005, 5315; or another course with prior approval from the Applied Genomics Program Director.

Practical Coursework Options.Aminimum of eight credits from MCB 5427, 5430, 5670, 5671, 5672, 6897; or another course with prior approval from the Applied Genomics Program Director.

Professional Master’s Cohort Options. A minimum of seven credits. These must include MCB 5490, two credits of MCB 5491, MCB 5900, and an internship (e.g. GRAD 5930). Other possible classes include MCB 5910; MCB 5080; or another course with prior approval from the Applied Genomics Program Director.

Note: Only six credits total of 3000 and 4000 level courses may be applied to the graduate degree.

## Applied Microbial Systems Analysis (M.S.)

The Master of Science in Applied Microbial Systems Analysis is a professional science master’s program that trains students in microbial genomics, microbiome research and general microbiology. This program is specifically designed to train students for employment in the biotechnology, pharmaceutical, diagnostic, government, and academic sectors. This is achieved by combining coursework with advanced laboratory training and internships.

**Requirements:** At least 33 credits of course work, an internship and passing an exit examination. Credits are selected from an approved menu of courses: minimum of nine credits in core curriculum options, minimum of eight credits in specialized microbiology courses (laboratory or research experience), minimum of five credits in laboratory courses and minimum of seven credits in professional master’s cohort courses (communication skills, Frontiers seminars, business practices, internship). In special circumstances the Advisory Committee may waive some of these requirements.

Core Curriculum Course Options. A minimum of nine credits from MCB 4601, 5001, 5217, 5240, 5426, 5471, 5621, 5679, 5699; or another course with prior approval from the Microbial Systems Analysis Program Director.

Specialized Microbiology Course Options. A minimum of eight credits from ANSC 4341,5618; EEB 5349, 5449; MCB 5472, 5636, 5681; PATH 5201, 5202, 5203, 5401, 5632; or another course with prior approval from Microbial Systems Analysis Program Director.

Laboratory Course Options. A minimum of five credits from ANSC 4642; MCB 3637, 5427, 5430, 5670, 5671, 5672, 5616; one to six credits of MCB 6897; or another course with prior approval from the Microbial Systems Analysis Program Director.

Professional Master’s Cohort Course Options. A minimum of seven credits. These must include MCB 5490, two credits of MCB 5491, MCB 5900, and an internship (e.g. GRAD 5930). Other possible classes include MCB 5910; MCB 5080; or another course with prior approval from Microbial Systems Analysis Program Director.

Note: Only six credits total of 3000 and 4000 level courses may be applied to the graduate degree.

## Art (M.F.A.)

The Department of Art and Art History offers one graduate degree: Master of Fine Arts (M.F.A.). The M.F.A. degree, a terminal degree for studio artists, requires a minimum of three years study in residence. Graduate level studio work for the serious artist is desirable to enable intensive aesthetic experimentation assisted by the guidance of established professional artists. As a result of such experience, a student is expected to complete a body of art significant in content and of professional quality. Students develop a plan of study in consultation with a major advisor and advisory committee. While the program emphasizes individualized studies concentrating on and combining studio art in such areas as ceramics, drawing, painting, installation/performance art, photography, printmaking, sculpture, and video, there are courses that also enable students to engage other resources of the Department of Art and Art History and the University community.

### M.F.A. Requirements

The M.F.A. requirements conform to the Graduate School requirements as outlined in the Academic Regulations section of this catalog. The M.F.A. has specific course requirements described below. Specific course requirements for the M.F.A. are determined by the student’s advisory committee consistent with the minimum requirements specified by the Graduate School. The M.F.A. does not have a foreign language requirement. Students establish their own direction and goals in consultation with a major advisor and an advisory committee. After such consultation, the plan of study is completed for the approval of the student’s advisory committee. Candidates for the M.F.A. are required to complete a minimum of 60 credits of graduate course work. This total typically includes 39 credits of graduate studio art distributed as follows: 18 credits in an area of major emphasis, 15 credits outside the area of major emphasis, and six credits of M.F.A. project. An additional 15 credits are to be taken in non-studio graduate art courses and are distributed as follows: nine credits of graduate art seminar, three credits in studio art instruction and curriculum planning, six credits in modern and contemporary issues in art, and three credits of special topics in art history. When deemed appropriate by the advisory committee, additional credits in advanced studio or art history may be required of students whose undergraduate backgrounds are deficient in these areas.

Core Requirements: ART 5310, 5320, 5340, 5383; ARTH 5383, 5370; Graduate Studio Art course in Major Studio Area; Graduate ART course or Elective Area.

M.F.A. Project Requirement. ART 5397; Reserved for the last semester of study after candidacy review, the M.F.A. project requires accomplishment of a body of studio work culminating in a substantial exhibition for public viewing, supported by a written statement, public presentation, and a digital photographic portfolio. Each candidate presents to the advisory committee an oral defense of the completed body of studio work and the written statement. The exhibition emphasizes work resulting from the M.F.A. project and courses taken in the final year of study. A public presentation is required in conjunction with the exhibition.

## Arts Leadership and Cultural Management (M.F.A.)

*Formerly offered as Arts Administration*

The Master of Fine Arts (M.F.A.) in Arts Leadership and Cultural Management is offered through the School of Fine Arts. The degree requires a minimum of 60 credits and is designed to be completed in three years. The program trains individuals for leadership and management positions in non-profit, for profit, and public enterprises in the arts and culture sector. Divided into two main parts the program includes a core curriculum, which all M.F.A. students are required to take, and advanced research and training in each student’s chosen area of interest and expertise within the general field of Arts Leadership and Cultural Management. Examples of areas of specialization include: Fundraising and Development, Marketing, Community Engagement, Policy, Advocacy, Project and Program Management, and Leadership.

Core Requirements:DRAM 5110, 5111, 5112, 5113, 5114, 5115, 5116, 5117, 5118, 5120, 5121, 5122, 5123, 5124, 5125; PP 5328; and six credits of electives.

## Athletic Training (M.S.)

The Master of Science in Athletic Training (M.S.A.T.) is a professional master’s degree program leading to certification as an athletic trainer and clinical practice in a variety of settings including professional, collegiate, and youth athletics, as well as centers supporting the health and well-being of tactical athletes. It is a two year, six semester, post-bachelor program. The first year consists of coursework related to the prevention, evaluation, and treatment of sport-related injuries and conditions, as well as focused clinical education experiences. During the second year, student’s complete coursework to advance their knowledge in evidence-based athletic training clinical practice while completing three full-time, immersive clinical education experiences. Successful applicants to the M.S.A.T. meet or exceed the Graduate School admission standards and have completed generally “B” average or better prerequisite coursework prior to matriculation. The required courses include: Biology, Chemistry, Physics, Human Physiology and Anatomy I and II, Psychology, Exercise Physiology/Exercise Science, Nutrition, and Statistics. Submission of Graduate Record Examination scores is required.

Required Courses.Completion of the Master of Science in Athletic Training degree requires the completion of 58 credits including each of the following courses: KINS 5100, 5101, 5102, 5103, 5106, 5107, 5109, 5110, 5111, 5112, 5200, 5201, 5202, 5204, 5205; PT 5410, 5412.

## Biodiversity and Conservation Biology (M.S.)

The M.S. in Biodiversity and Conservation Biology is a non-thesis, coursework-based (Plan B) Master’s degree for students preparing for careers in biodiversity management, conservation, and environmental education who want graduate-level training in the subject without the extensive research of a thesis-plan Master’s degree. For students with a B.S. in Ecology and Evolutionary Biology (EEB) from the University of Connecticut, it is designed as an accelerated (fifth-year) M.S. degree; such students can apply 12 credits of graduate coursework required for the M.S. towards the B.S as well. Students who have completed a B.S. in another program must complete course requirements equivalent to the undergraduate EEB major to earn this M.S. degree. The M.S. requires a minimum of 30 credits, comprising at least 14 credits of core course work, at least six credits of related area courses, at least four credits of research, and one to nine credits of internship.

Core Courses:EEB 5301, 5310, 5369, 5370; EEB 5348 or 5449; and EEB 5347 or one of the following taxonomic diversity courses: EEB 3266, 4250, 4252; EEB 4260 and 4261; EEB 4272, 4274, 4275, 5200, 5204, 5220, 5240, 5250, 5254, 5265, 5271, or 5477.

Related Areas.Students must complete a course from any two of the following related areas: Environmental Policy, Ethics and Management; Environmental Economics, and Environmental Analysis. Advisory committees may approve alternative courses within these three related areas.

Environmental Policy, Ethics, and Management Course Options:ARE 3434; EVST/POLS 3412; GEOG 4210; NRE 3155, 3245, 4165, 4335, 5200, 5345; PHIL 3216; SOCI 3407.

Environmental Economics Course Options:ARE 4438, 4462, 5464.

Environmental Analysis Course Options:ARE 3464; GEOG 3505, 5500, 5510; NRE 3535, 4535, 4665, 5205, 5215, 5575, 5585.

Research and Internship Credits.Research credits are earned by completing one or more sessions of EEB 5889. Internship credits are earned by completing one or more sessions of EEB 5891, possibly in conjunction with sessions of EEB 5881.

## Biomedical Engineering (M.S., Ph.D.)

The Department of Biomedical Engineering offers degree programs leading to a Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees. Upon entering the Ph.D. or M.S. program in Biomedical Engineering students are required to select their area of study or track in one of the following specialties: Biomaterials, Biomechanics, Biomedical Imaging and Biosensors, Bioinformatics and Systems Genomics, and Neuroengineering. Course requirements for the M.S. and Ph.D. in Biomedical Engineering are determined in conjunction with the major advisor and advisory committee. Courses are selected from a track specific list of approved courses maintained on the Biomedical Engineering website. In addition to the standard M.S. and Ph.D. programs, the department also offers a path to the M.S. degree in Biomedical Engineering through a program tied to the Clinical Engineering Internship. This program has separate degree requirements, which include participation in a two-year off-site hospital based internship intended to train students to applyengineering skills to manage healthcare technologyin the hospital environment. This program has a separate application process from the standard M.S. in Biomedical Engineering program.

### M.S. in Biomedical Engineering

The standard M.S. degree in Biomedical Engineering may be earned under either of two plans, as determined by the advisory committee. Plan A (thesis option) emphasizes problem-solving through research, while Plan B (non-thesis option) requires comprehensive understanding of a more general character through Biomedical Engineering coursework. In either case, advisory committees may require more than the minimum number of credits. Once a student begins a Plan A M.S. degree program and receives a graduate research assistantship, they can switch to a Plan B only if approved by the Biomedical Engineering Program Director and major advisor. It is also possible, with identification of a research project and approval from their major advisor, to change from Plan B M.S. degree program to Plan A.

M.S. Plan A Requirements.A minimum of 32 credit hours beyond the B.S. is required. The standard Plan A degree requires no fewer than seven graduate courses (21 credits) of advanced course work, a minimum nine additional credits of GRAD 5950 or 5960; two credit hours of Biomedical Engineering seminar; and successful completion of a thesis. The thesis must be an original and significant contribution to the field of Biomedical Engineering and must be defended orally according to Graduate School requirements. Students under Plan A are required to present and publish their Master‘s Thesis at a conference or have a paper accepted before graduation. For Plan A, the plan of study must include the following coursework: three graduate level engineering courses in the area of the student’s research (nine credits); one life science course for three credits. Life science courses are typically selected from anatomy and physiology, cell and molecular biology or biophysical chemistry, but are not limited to these areas; one graduate level experimental design course with Biostatistics for three credits; two electives totaling six credits. These consist of graduate level courses selected in consultation with the major advisor in the area related to the student’s research; nine credits of GRAD 5950 or 5960; two semesters, totaling two credits, one credit per semester, of graduate BME seminar; and all course work for the M.S. degree must be at the 5000-6000 level. STAT 5625/BIST 5625 can be used to satisfy the Experimental Design Course with Biostatistics requirement and BME 5000 to satisfy engineering or life science course requirement, even if these courses were used on a UConn undergraduate Plan of Study.

M.S. Plan B Requirements.The standard Plan B Master of Science in Biomedical Engineering requires a minimum of 32 credits consisting of ten graduate courses (30 credit hours) and two credit hours of Biomedical Engineering seminar. There are no publication requirements for Plan B M.S. degree students. For Plan B, the plan of study must include the following coursework: Five graduate level engineering courses in the student’s track (15 credits); two life science courses (six credits). Life science courses are typically selected from anatomy and physiology, cell and molecular biology or biophysical chemistry, but are not limited to these areas; one graduate level experimental design course with Biostatistics for three credits; two electives totaling six credits. These consist of graduate level courses selected in consultation with the major advisor in the area related to the student’s track; two semesters, totaling two credits, one credit per semester, of graduate BME seminar; at most, six credit hours or two classes may be transferred from other institutions, subject to department approval through a Graduate Petition and to the Graduate School regulations outlined in the Graduate Catalog; and all course work for the M.S. degree must be at the 5000-6000 level. STAT 5625/BIST 5625 can be used to satisfy the Experimental Design Course with Biostatistics requirement and BME 5000 to satisfy engineering or life science course requirement, even if these courses were used on a UConn undergraduate Plan of Study.

Course Substitutions.If a student has completed equivalent courses in a well-established graduate program, they can apply for a waiver by petitioning the Graduate Program Director by the end of the first semester. If a waiver is granted, the student may substitute elective graduate course credits for the waived course credits.

Independent Study Courses.For students under Plan B, at most three credit hours of independent study courses may be applied toward course work requirements. For students under Plan A, independent study is not allowed.

M.S. Final Examination.For students under Plan A, an oral examination, often called the thesis defense, is conducted based on the student’s thesis research. The decision as to whether the student passes the examination is based on a vote of the advisory committee. For students under Plan B, the format and content of the final examination is determined by the advisory committee. A student must indicate the intention of graduation at least four weeks before the end of the graduate study to the major advisor who will make arrangement for the final examination. The decision as to whether the student passes the examination is based on a vote of the advisory committee.

### M.S. in Biomedical Engineering (Clinical Engineering Internship Program)

The requirements for this program include a non-credit clinical internship, carried out off-site in hospitals throughout the United States, in addition to credit hour and other requirements described below. The degree is awarded as either Plan A (thesis option) or Plan B (non-thesis option). Plan A emphasizes problem-solving through research and requires a minimum of 21 credit hours of coursework and a Thesis Project, including nine credits of GRAD 5950. Plan B requires comprehensive understanding of a more general character and requires 30 hours of coursework.

Clinical Engineering Internship Program Requirements. A minimum of 30 credit hours beyond the B.S. is required. Plan A requires no fewer than seven graduate courses (21 credits) of advanced course work; a minimum nine additional credits of GRAD 5950 or 5960; and successful completion of a thesis. The thesis must be an original and significant contribution to the field of Biomedical Engineering and must be defended orally according to Graduate School requirements. Interns under Plan A are required to present and publish their Master‘s Thesis at a conference or have a paper accepted before graduation. Students pursuing the internship-based M.S. through Plan B must satisfactorily complete a minimum of 30 credits consisting of ten graduate courses (30 credit hours). There are no publication requirements for Plan B M.S. degree students.

Plan A Clinical Engineering Internship Requirements:BME 5020, 5030, 5040, 5050, 5060, 5061; nine credits of GRAD 5950 or 5960; and three credits of electives, these consist of graduate level courses selected from an approved list maintained on the Biomedical Engineering website. Other courses may be used to complete the elective requirement if approved by the major advisor. STAT 5625/BIST 5625 or BME 5000 can be used to satisfy the elective requirement, even if the course is used on a UConn undergraduate Plan of Study.

Plan B Clinical Engineering Internship Requirements: BME 5020, 5030, 5040, 5050, 5060, 5061; and 12 credits of electives, these consist of graduate level courses selected from an approved list maintained on the Biomedical Engineering website. Other courses may be used to complete the elective requirement if approved by the major advisor. STAT 5625/BIST 5625 and BME 5000 can be used to satisfy an elective requirement, even if these courses were used on a UConn undergraduate Plan of Study.

Course Substitutions.If a student has completed equivalent courses in a well-established graduate program, they can apply for a waiver by petitioning the Graduate Program Director by the end of the first semester. If a waiver is granted, the student may substitute elective graduate course credits for the waived course credits.

Independent Study Courses.For students under Plan B, at most three credit hours of independent study courses may be applied toward course work requirements. For students under Plan A, independent study is not allowed.

M.S. Final Examination.For students under Plan A, an oral examination, often called the thesis defense, is conducted based on the student’s thesis research. The decision as to whether the student passes the examination is based on a vote of the advisory committee. For students under Plan B, the format and content of the final examination is determined by the advisory committee. A student must indicate the intention of graduation at least four weeks before the end of the graduate study to the major advisor who will make arrangement for the final examination. The decision as to whether the student passes the examination is based on a vote of the advisory committee.

### Ph.D. in Biomedical Engineering

The Ph.D. is primarily a research degree, and may be undertaken after the M.S. or following the B.S. To be awarded the Ph.D., the student must satisfy all requirements of the Biomedical Engineering Department and all requirements of the Graduate School. These requirements are more extensive than those associated with the M.S. degree and the major ones are as follows. The Ph.D. in Biomedical Engineering does not have a related area or foreign language requirement.

Ph.D. Qualifying Examination.The Biomedical Engineering Ph.D. Qualifying Examination consists of the written proposal and oral examination component. The Qualifying Examination is taken at the end of the second year of the Ph.D. program. The written component of the Qualifying Examination follows the format of a grant proposal on a particular research topic, while the oral component the student is required to defend the proposal. The advisory committee makes a final pass/fail decision for the Ph.D. Qualifying Examination based on the combined results of the written component and oral presentation. In the event of an unsuccessful attempt, the exam may be repeated once if necessary and at the discretion of the committee.

Ph.D. Prospectus.Before the Ph.D. dissertation is well under way, the student must file a prospectus, dissertation proposal, of the proposed research, according to Graduate School regulations. The student’s advisory committee and the Biomedical Engineering Director of Graduate Studies must approve the prospectus.

Ph.D. Dissertation. The most important part of the study for the Ph.D. degree is the dissertation. A dissertation must be an original and significant contribution to the field of engineering science and must be defended orally according to Graduate School requirements.

Ph.D. Final Examination.The final examination, an oral examination often called the dissertation defense, deals mainly with the subject matter of the dissertation. The decision as to whether the student passes the examination is based on a vote of the advisory committee.

Ph.D. Publications.The student must have submitted a minimum of two papers for publication in the peer reviewed archival literature (journals), and have at least one of these papers published or accepted for publication at the time of the Ph.D. defense. These papers must be based on the student’s dissertation research and must be co-authored by the student’s faculty advisor from the Biomedical Engineering Department.

Ph.D. Required Credit Hours.For the Ph.D. following the M.S. degree, a minimum of 17 credit hours after the M.S. (excluding requirements for dissertation, language and minor area) is required; for the Ph.D. following the B.S. degree, a minimum of 32 credit hours after the B.S. (excluding requirements for dissertation, language and minor area) is required; at most, six credit hours or two classes may be transferred from other institutions, subject to department approval through a Graduate Petition and to the Graduate School regulations outlined in the Graduate Catalog; all course work for the Ph.D. degree must be at the 5-6000 level; and the advisory committees may require more than the minimum number of credits.

Ph.D. Plan of Study.Ph.D. following a B.S.: Five graduate level engineering courses (15 credits) in the student’s track; two life science course (six credits). Life science courses are typically selected from anatomy and physiology, cell and molecular biology or biophysical chemistry, but are not limited to these areas; one graduate level experimental design course with Biostatistics for three credits; two electives totaling six credits. These consist of graduate level courses selected in consultation with the Major Advisor in the area related to the student’s track; fifteen GRAD 6950 or 6960 course credits, as described in the Graduate Catalog; two semesters (totaling two credits; one credit per semester) of graduate BME seminar; and all course work for the Ph.D. degree must be at the 5-6000 level. STAT 5625/BIST 5625 can be used to satisfy the Experimental Design Course with Biostatistics requirement and BME 5000 to satisfy engineering or life science course requirement, even if these courses were used on a UConn undergraduate Plan of Study.

**Ph.D. following an M.S.:** Three graduate level engineering courses (nine credits) in the student’s track; one life science course for three credits. Life science courses are typically selected from anatomy and physiology, cell and molecular biology or biophysical chemistry, but are not limited to these areas; one graduate level experimental design course with Biostatistics for three credits; fifteen GRAD 6950 or 6960 course credits, as described in the Graduate Catalog; two semesters (totaling two credits; one credit per semester) of graduate BME seminar; and all course work for the Ph.D. degree must be at the 5-6000 level. STAT 5625/BIST 5625 can be used to satisfy the Experimental Design Course with Biostatistics requirement and BME 5000 to satisfy engineering or life science course requirement, even if these courses were used on a UConn undergraduate Plan of Study.

Course Substitutions. If a student has completed equivalent courses in a well-established graduate program, they can apply for a waiver by petitioning the BME Department Head by the end of the first semester. If a waiver is granted, the student may substitute an equal or greater number of elective graduate course credits for the waived course credits.

Independent Study Courses.At most two independent study courses can be applied towards course work requirements and only one independent study course can be taken with the student’s major advisor as instructor.

## Biomedical Science (M.S., Ph.D.)

The Biomedical Science program offers two graduate degrees: Master of Science (M.S.) and Doctor of Philosophy (Ph.D.). The areas of concentration within these degree programs are the following: Systems Biology, Cell Biology, Genetics and Developmental Biology, Immunology, Molecular Biology and Biochemistry, Neuroscience, and Skeletal Biology and Regeneration. The M.S. in Biomedical Science may be either a coursework-based degree or a research-based degree. The Ph.D. in Biomedical Science prepares students for research careers in academia and industry. Graduates also enter careers in teaching, consulting, non-profit organizations, private foundations and government.

**Requirements:** The M.S. and Ph.D. requirements in Biomedical Science conform to the Graduate School requirements as outlined in the Academic Regulations section of this catalog. Specific course requirements for the M.S. and Ph.D. in Biomedical Science are determined by the student’s advisory committee consistent with the minimum requirements of the Graduate School. The Ph.D. in Biomedical Science does not have a related area or foreign language requirement. All students in the M.S. and Ph.D. programs must take MEDS 5310, Responsible Conduct in Research, unless the student’s advisory committee approves an equivalent course or training experience. All students (except dual degree students) in the Ph.D. program must also take MEDS 6501 and 6502.

## Biostatistics (M.S.)

The Department of Statistics offers programs leading to a Professional Master of Science (M.S.) degree in Biostatistics (as well as Master of Science and Doctor of Philosophy (Ph.D.) degrees in Statistics, described elsewhere). The M.S. in Biostatistics requires 31 credits. Qualified fulltime students are expected to complete the program in three to four semesters. The program focuses on practical skills and rigorous training in modern areas of biostatistics to solve problems in public health, health services and policy, biomedical research, and other areas such as environmental health and ecology. Students completing this program successfully will acquire expertise in topics including statistical inference, regression analysis, design and analysis of clinical trials and epidemiological studies, bioinformatics, programming in SAS and R, data management, and consulting. Individuals with a Bachelor’s degree in any major who have a background in mathematics and statistics are encouraged to apply.

Required Courses: BIST 5091 or 5092, 5215, 5225; BIST 5505–5605; BIST 5585–5685; BIST 5625, 5635.

Required Electives: One of the following courses: BIST 5615, 5645, or 5655. One additional course: BIST 5515, 5615, 5645, 5655, 5705, or 5815.

The final requirement is passing the Master’s Examination which is a written test on basic understanding of course materials. There is no thesis requirement.

Note:In order to be considered for a possible switch to the Ph.D. program or for financial support, a M.S. in Biostatistics student must first clear the Ph.D. Qualifying Examination.

## Business Administration (M.B.A., Ph.D.)

*Effective for the 2022-23 catalog, the MGMT subject area was changed to MENT.*

Students must meet the Graduate School requirements, as well as the following requirements to complete graduate programs in the School of Business. The M.B.A. programs offer dual degrees that allow students to work jointly toward two University of Connecticut graduate degrees. All students must be independently accepted into both graduate programs. To complete the M.B.A. portion of a dual degree program, students must complete 42 credits including all required courses. Dual degrees are available with the following programs: Master of Science in Business Analytics and Project Management, Master of Science in Financial Risk Management, Master of Science in Human Resource Management, Doctor of Medicine in Dentistry (D.M.D.), Master of Engineering (M.Eng.),Master of Arts in Latina/o and Latin American Studies, Juris Doctor (J.D.), Medical Doctor (M.D.), Master of Science in Nursing (M.S.), Pharmacy Doctor (PharmD.), Master of Social Work (M.S.W.), and Ph.D. in Biomedical Science.

Ph.D. in Business Administration

Prepares students to conduct high quality, state-of-the-art research and to take faculty positions at leading universities. Areas of study include Accounting, Finance, Management, Marketing, or Operations and Information Management. This is a full-time program with an average completion time of five years. Doctoral students are required to successfully complete between 37 and 49 credits of coursework, depending on their concentration (Accounting, Finance, Management, Marketing, or Operations and Information Management). Coursework spans three broad categories: Research Methods, Major Area of Concentration, and Supporting Courses. Students must maintain a minimum GPA of 3.0, and also complete a qualifying research paper, pass a general examination in their area of concentration, complete a minimum of 15 credits of GRAD 6950 (Dissertation Research), and successfully complete a dissertation.

### **Executive M.B.A.**

Students must have prior managerial experience and complete 42 credits of graduate-level Executive Master of Business Administration (EMBA) courses as part of a lockstep cohort over 21 months. Students may elect to complete an additional 12 credits to earn a graduate certificate.

### **Master of Business Administration (M.B.A.)**

The M.B.A. program prepares students for management positions and career pathways towards business leadership. Courses cover the broad functional domains of business and their strategic integration. Courses are offered in a variety of delivery modes, from fully online to fully in-person, with flexibility in scheduling and time to completion.

M.B.A. students complete 42 credits at their own pace, which averages two years to completion. The curriculum includes 27 credits in required core courses and 15 elective credits. Students can complete their degree in-person and online out of Hartford, Stamford, or Waterbury, or completely online in Online Fast (cohort model) or Online Flex (student chooses classes each semester like in the on-ground model). Online students will be required to access all course material online and will need reliable internet access to complete the requirements of the program. Concentrations are available in Business Analytics, Business Ethics and Compliance, Finance, General Business, Management, and Digital Marketing Strategy.

**Required Courses:** ACCT 5121, BLAW 5175; FNCE 5101, 5151; MENT 5138, 5800; MKTG 5115; OPIM 5110 and 5185.

**Elective Requirements:** Students complete 15 credits of graduate level elective courses.

**Concentrations:** MBA students may complete their degree with a General Business concentration by taking any M.B.A. electives of their choice or take three electives (nine credits) in any of the following areas to develop a concentration: Business Analytics, Business Ethics and Compliance, Finance, Management, Marketing, or Supply Chain Management\*. These are in addition to the required core courses listed above.

**\*Supply Chain Management Concentration (Nine credits)**

**Required Courses (Nine credits):** OPIM 5111, OPIM 5112, and OPIM 5113.

## Business Analytics and Project Management (M.S.)

The Master of Science in Business Analytics and Project Management (MSBAPM) is designed to meet the growing demand for professionals who can harness advanced business analytics and project management skills to address existing business problems and create new opportunities for small to global enterprises in information-rich environments. Students must complete 37 credits to fulfill all degree requirements. The program features hybrid course delivery that combines face-to-face and online sessions, and can be completed on a full-time or part-time basis. The curriculum is aligned with professional examinations leading to certification and accreditation by the SAS Institute and the Project Management Institute.

Required Courses:MENT 5620; OPIM 5270, 5272, 5601, 5603, 5604, 5641, 5668, 5671 and 5770, totaling 28 credits.

Approved Electives:(nine credits required)OPIM 5501, 5502, 5503, 5504, 5505, 5506, 5507, 5508, 5509, 5510, 5511, 5512, 5894; or approved graduate level (5000 or above) MKTG, MENT, or FNCE courses; HCMI and/or MATH courses approved for concentrations.

Concentrations: If the electives that a student chooses fulfills the requirements of a concentration listed below, the student’s transcript will list the concentration in addition to the MSBAPM degree. The concentrations are optional, and students do not have to do any concentration if they choose not to. Substitutions to the courses that fulfill the requirements of the concentrations can be approved by the OPIM department head in consultation with other departments, as necessary.

**Business Data Science Concentration:** three courses from OPIM 5501, 5502, 5504, 5509, 5511, 5512.

Marketing Analytics Concentration: MKTG 5115 plus two courses from MKTG 5220, 5250, 5251, 5665; OPIM 5510.

Actuarial Science Concentration: three courses from MATH 5630, 5631, 5637, 5639.

Talent Analytics Concentration: MENT 5680, 5377, plus one course from MENT 5650, 5674, 5675.

Health Care Analytics Concentration: three courses from HCMI 5240, 5243, 5686; OPIM 5508.

**Supply Chain Analytics Concentration:** three courses from OPIM 5110, 5111, 5112, 5113.

Accelerated Master of Science in Business Analytics and Project Management. Prospective undergraduate UConn students must apply to the Accelerated Master of Science in Business Analytics and Project Management through the regular Graduate School admissions process during the Fall semester of their junior year. Students who meet conditional acceptance requirements, will be admitted to the Accelerated Master of Science in Business Analytics and Project Management if they also successfully complete their UConn undergraduate degree while maintaining the minimum cumulative GPA for admission to the UConn Graduate School, and receive a grade of “B” or better in both courses in one of the following sequences: OPIM 5270 and 5603; or OPIM 5603 and 5604. Students must also fulfill the Technical Communications foundational knowledge requirement by earning a Bachelor’s degree with an Affiliated Major or Minor, or “B” or better in OPIM 5601, or an engineering Senior Design course, or other relevant coursework subject to MSBAPM Director approval.

To complete the MSBAPM degree, students admitted to the Accelerated Masters are required to complete 30 credit hours, having completed seven of the required credits to attain admission to the MSBPAM program.

## Business Research (M.S.)

The M.S. in Business Research provides training in business theory and methods, combined with core courses in the department's program of study. It is available only to students enrolled in the Ph.D. Program in Business Administration at the time of application.

**Requirements:** (1) Successful completion of all coursework required for the student’s concentration area, with the exception of 15 credits of GRAD 6950, at least 37 credit hours, (2) a cumulative GPA of 3.3 or higher, and (3) approval for the M.S. in Business Research by the student’s Plan of Study Committee.

Credits used to fulfill the M.S. in Business Research degree cannot be used toward Ph.D. degree requirements in business. The Ph.D. general examination requirements need not be satisfied for the award of M.S. in Business Research. This degree is non-thesis track. Application for the degree can occur during the student’s final semester enrolled in the Ph.D. program, subject to final GPA evaluation.

## Chemical Engineering (M.S., Ph.D.)

Study and research programs leading to the degrees of Doctor of Philosophy (Ph.D.) and Master of Science (M.S) in chemical engineering are offered. Areas of specialization include: environmental engineering, biochemical engineering, polymer science and engineering, process simulation, catalysis and reaction engineering, nanomaterials and nanotechnology, microelectronics, and membrane technology.

Requirements for the Plan A M.S. Degree.Students must complete 30 credits of coursework and research, composed of three core courses: CHEG 5301, 5315, and 5321, as well as nine credits of GRAD 5950, and 12 additional credits of advanced coursework and training. Up to six credits of graduate level coursework can be transferred, subject to approval of the graduate committee. The student must assemble a thesis committee and complete a plan of study. There is a publication/product requirement. Students should register for the seminar series each semester it is offered.

Requirements for the Plan B M.S. Degree. Students must complete 30 coursework credits, composed of three core courses in thermodynamics, kinetics and mass transport and three credits of an independent study project with one of our faculty members. Since Plan B does not included a thesis, a Plan B student must defend their project orally. There is no language requirement.

Requirements for the Ph.D. Degree.Ph.D. candidates with B.S. degrees must complete coursework in three core subjects: CHEG 5301, 5315, 5321, as well as 21 additional credits in advanced coursework and training, for a total of 30 coursework credits. An additional 15 credits of research bring the normal total to 45 credits. Additional coursework may be required for students with non-traditional Chemical Engineering backgrounds. For students with M.S. degrees, the coursework credits are reduced to 15 credits composed of nine credits from the three core courses and six additional credits of advanced coursework and training. Students must pass an oral qualifying exam taken after the first semester of graduate study. The oral exam involves the presentation and analysis of a paper from the literature assigned by the faculty. The student must assemble a dissertation committee and complete a plan of study. A Dissertation Prospectus should be given before the end of the 5th semester of study. In addition, the student must complete a General Examination and written Ph.D. dissertation, which is defended orally. The Ph.D. dissertation must contain the results of original and independent research related to chemical engineering. There is a publication/product requirement subject to approval by the dissertation committee. The Ph.D. in Chemical Engineering does not have a related area or foreign language requirement. Students should register for the seminar series each semester it is offered.

## Chemistry (M.S., Ph.D.)

The Department of Chemistry offers two graduate degrees: Master of Science (M.S.) and Doctor of Philosophy (Ph.D.). Students engage in coursework and conduct chemistry-related research that prepares them for careers in fields such as academia, industry, and government. Faculty and students in the Department of Chemistry participate in active research programs encompassing modern aspects of analytical, biological, environmental, inorganic, organic, physical, and polymer chemistry.

Master of Science Degree

A master’s degree may be earned under either of two plans (Plan A or Plan B) as determined by the Advisory Committee. Plan A requires at least 21 hours of course work (plus nine credits of GRAD 5950) and a written thesis describing original research in chemistry. The coursework must include at least three credit hours of independent study carrying out laboratory work or theoretical research. The Advisory Committee must approve the topic and scope of the master’s thesis. For students interested in a career in chemical research, the Department strongly recommends following Plan A. Plan B requires 30 credits of course work but no thesis. The Advisory Committee determines the courses to be taken and may require more than the minimum number of credits.

Doctor of Philosophy Degree

The primary requirement for the Ph.D. degree is submission of a dissertation that makes a significant contribution to the candidate’s field of specialization. The requirements for the Ph.D. in Chemistry are as follows:

Required Courses: A minimum of 30 course credits of graduate work beyond the Bachelor’s degree, in addition to 15 credits of GRAD 6950, required by the Graduate School. The Graduate Faculty of Chemistry may require specific courses based on the student’s proficiencies and areas of focus. The Department encourages extensive work in the major area and at least nine credits in a non-major area (usually chemistry but also areas such as biochemistry, chemical engineering, pharmacy, physics, and mathematics). It is most common for 21-27 course credits to be required beyond the Master’s degree, unless a student earns a Master’s degree in this Department as a step toward the Ph.D. In the latter case, all graduate credits may count toward the minimum of 30 course credits for the Ph.D., if approved by the Advisory Committee. The Ph.D. in Chemistry does not have a related area or foreign language requirement.

General Examination. After qualification, the student must pass the General Examination, consisting of a written and an oral portion as determined by his or her selected division (Analytical, Biological, Environmental, Inorganic, Organic, Physical, or Polymer). The General Examination is generally completed during the second or third year of graduate work.

Dissertation Prospectus. A Dissertation Prospectus must be filed with the Graduate School at least six months before submission of the dissertation, but preferably much earlier.

## Civil Engineering (M.S., Ph.D.)

The Department of Civil and Environmental Engineering offers graduate courses and research opportunities for students seeking a Master of Science (M.S.) or Doctor of Philosophy (Ph.D.) through the Civil Engineering field of study. An M.S. degree awarded in Civil Engineering may be either research-based, Plan A, or coursework-based, Plan B. Plan A students often pursue Ph.D. studies or careers in research and development in government and private institutes. Areas of concentration within Civil Engineering include Applied Mechanics (Ph.D. only), Environmental Engineering (M.S. only), Geotechnical Engineering, Structural Engineering and Transportation and Urban Engineering.

The M.S. and the Ph.D. requirements in Civil Engineering conform to Graduate School requirements. The specific requirements for coursework and research are described below. The Ph.D. in Civil Engineering does not have a related area or foreign language requirement, unless one is specified by the advisory committee. All M.S. and Ph.D. students have to maintain a GPA of 3.0 to maintain their status in the program. Failure to meet this standard triggers a probationary of period of one semester, after which the student is subject to dismissal.

M.S. Plan A Requirements

A total of 30 credits are required for graduation, with a minimum of 21 credits of coursework and a minimum of nine credits of GRAD 5950. A student may enroll in GRAD 5950 credits at any time during the M.S. degree and it is their responsibility to coordinate with their research advisor (and secondarily, with their research committee) on the research plan and requirements for graduation.

A Plan A M.S. requires the submission of an M.S. Thesis, in the form of a submission-ready paper manuscript, and an oral defense for graduation. The oral defense fulfills the role of the final examination for the M.S. degree. The scope, content and length of the M.S. thesis results from the agreement between the research advisor and the student. An advisory committee of at least two additional faculty members will also weigh in on the originality and quality of the thesis prior to graduation. In general, the thesis should present the methodology and results of novel, independent research conducted by the student. Thus, Plan A M.S. theses cannot be solely literature reviews or replicate research already published in the scientific literature. As a standard, the M.S. thesis should constitute the basis for a journal paper submission and may be structured as such.

Additional requirements of individual areas of concentration are noted below.

Environmental Engineering Requirements:The Environmental Engineering concentration conforms to the guidelines of the Environmental Engineering Field of Study. Students must complete M.S. Plan A requirements as outlined above.

Environmental Engineering Core Requirements:ENVE 5310 and 5320. The remaining courses may be related to one of the three areas of specialization in consultation with the advisor.

Geotechnical Engineering Requirements:Five of the following eight courses: CE 5122, 5164, 5530, 5541, 5542, 5543; ENVE 5821 or 5830. The remaining courses may be selected in consultation with the advisor.

Structural Engineering Requirements: 21 credits of advanced coursework, of which at least 18 credits must be at the graduate level; three core courses: CE 5122, 5164, and 5610; no more than three credits may be taken as independent study.

Transportation and Urban Engineering Requirements:CE 5710; two of the following four courses (six credits): CE 5720, 5730, 5740, 5750; one or more courses in Civil Engineering in the Transportation and Urban Engineering specialization (minimum three credits); two or more courses outside of Civil Engineering/Transportation and Urban Engineering (minimum six credits).

If the student’s prior degrees are in an area other than civil engineering with a focus on transportation (or equivalent), the following background preparation courses are required if not previously taken: CE 2251, 2710, and MATH 2110Q.

Students must register for and attend CE 5030 Seminar in Transportation and Urban Engineering every semester in which they are either enrolled for nine or more credits or supported by a graduate assistantship.

The remaining courses may be selected in consultation with the advisor.

M.S. Plan B Requirements

A total of 30 credits are required for Plan B Master’s, with a minimum of 27 credits of coursework in Civil Engineering or a related area. The remaining credits may be used towards a research project as CE 5020 or ENVE 5020 for the Environmental Engineering concentration.

Additional requirements of individual areas of concentration are noted below.

Environmental Engineering Requirements:The Environmental Engineering concentration conforms to the guidelines of the Environmental Engineering Field of Study. A minimum of 27 credits of coursework is required in Environmental Engineering or related area. The remaining credits may be used towards additional courses or towards a research project as ENVE 5020. All M.S. students are required to take the following core courses: ENVE 5310 and 5320.

The remaining courses may be related to one of the three areas of specialization (atmospheric processes, hydrogeosciences and water resources management, and contaminant fate and resource recovery) in consultation with the advisor.

The final examination for a Plan B Master’s is an oral or written exam on three core courses of Environmental Engineering: ENVE 5310 and two additional ENVE courses selected by the student. The exam will take place in the final semester before graduation and it will be administered by the advisory committee that will sign the Plan of Study and the Report on the Final Examination.

Geotechnical Engineering Requirements:Five of the following eight courses: CE 5122, 5164, 5530, 5541, 5542, 5543, ENVE 5821 and 5830. The remaining courses may be selected in consultation with the advisor.

Structural Engineering Requirements:Three core courses: CE 5122, 5164, and 5610; three credits of CE 5020 used toward the execution of a research project.

Transportation and Urban Engineering Requirements:CE 5710; two of the following four courses (six credits): CE 5720, 5730, 5740, or 5750; one or more courses in Civil Engineering in the Transportation and Urban Engineering specialization (minimum three credits); two or more courses outside of Civil Engineering / Transportation and Urban Engineering (minimum six credits).

If the student’s prior degrees are in an area other than transportation, the following background preparation courses are required if not previously taken: CE 2251, 2710, and MATH 2110Q.

Students must register for and attend CE 5030 every semester in which they are either enrolled for nine or more credits or supported by a graduate assistantship.

Three credits of CE 5020 used toward the execution of a research project.

The remaining courses may be selected in consultation with the advisor.

Ph.D. Requirements

If a student is admitted to the Ph.D. program with only a B.S. degree, at least 30 credits of coursework are required. If the student has a M.S. degree, the minimum requirement is 15 credits. Students are also required to complete at least 15 credits of GRAD 6950 in addition to coursework requirements. The Ph.D. in Civil Engineering does not have a related area or foreign language requirement.

Additional requirements of individual areas of concentration are noted below.

Applied Mechanics Requirements:Aminimum of 45 credit hours in post-baccalaureate coursework; three core courses: CE 5122, 5164, and 5610 or CE 5620; no more than three credits may be taken as independent study.

Structural Engineering Requirements:A minimum of 45 credit hours in post-baccalaureate coursework; three core courses: CE 5122, 5164, and 5610 or CE 5620; no more than three credits may be taken as independent study.

Transportation and Urban Engineering Requirements:CE 5710; two of the following four courses (six credits): CE 5720, 5730, 5740, 5750; one or more courses in Civil Engineering in the Transportation and Urban Engineering specialization (minimum three credits); two or more courses outside of Civil Engineering / Transportation and Urban Engineering (minimum six credits).

If the student’s prior degrees are in an area other than transportation, the following background preparation courses are required if not previously taken: CE 2251, 2710, and MATH 2110Q.

Students must register for and attend CE 5030 Seminar in Transportation and Urban Engineering every semester in which they are either enrolled for nine or more credits or supported by a graduate assistantship.

The advisory committee may substitute the above with equivalent courses. The remaining credits may be taken in one of the three areas of concentration with courses selected in consultation with the advisory committee.

Ph.D. General Examination.The General Exam is taken after the student has completed at least 12 credits of coursework (with a M.S.) or 18 credits of coursework (with a B.S.). An approved Plan of Study must be filed with the Graduate School before the General Exam can be taken. The Civil Engineering field of study administers the General Exam as an oral and written examination to test student mastery of core concepts appropriate to the areas of concentration and student ability to integrate concepts across disciplinary areas.

Ph.D. Dissertation Proposal.The dissertation proposal is a document that outlines the proposed research for the dissertation and has to be compiled and approved before the research is well underway. It is recommended that the dissertation proposal is submitted for approval in the semester following a student successfully passing their General Exam, and should be submitted no more than one year after the General Exam.

Ph.D. Candidacy, Dissertation Preparation, and Final Oral Defense. In addition to Graduate School requirements, the Civil Engineering field of study requires that a Ph.D. student must have three journal papers: one published or accepted for publication, one under review and one in the final stages of preparation. However, it is important that the three papers address a larger, coherent research question (as outlined in the Dissertation Proposal) and are not isolated bodies of work.

## Clinical and Translational Research (M.S.)

The Master of Science (M.S.) degree program in Clinical and Translational Research (MCTR) is administered by the Connecticut Convergence Institute for Translation in Regenerative Engineering at the University of Connecticut. The program, which stresses clinical research methods and a research practicum, is offered to individuals with a health-related terminal degree (for example, M.D., Ph.D., Pharm.D., D.D.S., or D.M.D.) to provide practical research training in preparation for independent research. Due to course sequencing, students are typically admitted for the Fall semester. All work must be completed within four years from the beginning of study, which is defined as the beginning date of the earliest course, wherever taken, listed on the approved Master’s Plan of Study. The three core courses in clinical and translational research are generally taken consecutively; therefore, the minimum timeframe to complete the program is 18 months. Students must submit a Plan of Study no later than the beginning of their final semester before degree completion. The MCTR program is a Plan B (non-thesis) program. Students are required to complete a final examination, which entails the oral defense of a grant application and a manuscript. Final examination materials (grant application and manuscript) must be submitted to the MCTR Administrative Office at least three weeks prior to the student’s final exam.

Requirements: The M.S. program in Clinical and Translational Research requires a minimum of 30 credits. The credits include: nine credits of core course work, 12 research practicum credits and nine credits of elective course work approved by the MCTR Executive Committee. Students may take an independent study (CLTR 5099) in place of an elective.

Elective Courses:A total of nine elective credits are required. Students choose from a list of approved courses. Approved electives include: CLTR 5360; MEDS 5308, 5310, 6447; PUBH 5404, 5405, 5436, 5475, 5501, 5504. Students may request permission from the MCTR Executive Committee to enroll in an elective that is not on the list of approved courses.

## Communication (M.A., Ph.D.)

The Department of Communication studies the process and analysis of human communication, with areas of specialization that include interpersonal communication, persuasion, communication technology, nonverbal communication, and media effects. The Department offers both a Master of Arts (M.A.) and a Doctor of Philosophy (Ph.D.) in Communication. The M.A. program in Communication emphasizes the scientific investigation of human communication behavior, stressing developments in communication theory and research as they relate to society and the communication process. The M.A.in Communication prepares people for entry into a number of fields that require analysis of communication situations. It also provides a solid foundation for Ph.D. work. The Ph.D. program in Communication offers students a unique curriculum that stresses the integration of theory and research in communication. Our program places strong emphasis on communication theory and a wide range of research skills and is designed to provide students with a rigorous course of study that will prepare them for careers in the academic, commercial, or non-profit spheres. Because our program emphasizes a balance between theory and application, alumni leave UConn with a dynamic skill and knowledge set, qualifying them for employment opportunities both inside and outside academia.

### Master of Arts in Communication

All students must complete at least 33 credit hours of graduate course work, including a core of required courses. Required core courses are COMM 5001 and 5002. Core courses may only be waived in special circumstances. Students opting to write a thesis must also take COMM 5003 and 5010. The remainder of the student’s program will be determined by their chosen specialty area. A minimum of 30 credits in total (including core courses and thesis- or project-related courses, if applicable) must come from graduate-level COMM courses. Students must culminate their M.A. program by either writing a thesis, taking a comprehensive examination, or completing a Capstone Project (COMM 5979). The choice among these options is made in consultation with and subject to the approval of the student's major advisor. Students pursuing a UConn undergraduate B.A. degree in Communication and who enroll in the accelerated M.A. program can apply to use up to 12 credits of graduate-level coursework taken as an undergraduate towards an M.A. degree in Communication.

### **Doctor of Philosophy in Communication**

All students must complete a program of study of at least 60 credit hours of graduate course work, which includes dissertation credits. Required coursework varies depending on the chosen track, but all students must complete several core courses. Core courses are COMM 5001, 5002, 5003, and 5010. Core courses may only be waived in special circumstances. The Ph.D. program has six tracks: Interpersonal Communication, Marketing Communication, Mass Communication, New Communication Technology, Nonverbal Communication, and Persuasion. As part of each track, students will take 6-9 credits in an area chosen to provide breadth or specialized skills. Students must pass COMM 6800, which entails participating in two research projects mentored by faculty. Students must take and pass the doctoral comprehensive examinations in communication theory and research methods. After passing both examinations, students must successfully defend their dissertation proposal. Students culminate their Ph.D. program by submitting and successfully defending their doctoral dissertation.

## Computer Science and Engineering (M.S., Ph.D.)

The School of Computing offers both the Master of Science (M.S.) and the Doctor of Philosophy (Ph.D.) degrees.

Requirements for the Master’s degrees

The M.S. program in Computer Science and Engineering is offered in two varieties: Plan A, requiring a master’s thesis, and Plan B, based entirely on coursework. Each of these programs requires a total of 30 credits, with the thesis counting for nine credits in the Plan A program. Thus the Plan A program allows a student to combine individual study with general coursework. We strongly encourage the Plan A degree for students aspiring to pursue doctoral studies.

M.S. Plan A Requirements.At least 21 credits of graduate level courses, excluding thesis research credits, reflecting a GPA of at least 3.0; at least nine credits of CSE graduate courses other than CSE 5097, 5099, and 5600; at most six credits, in total, of CSE 5097, 5099, and 5600; at most three credits of CSE 5097; successful completion, with a grade of B- or better, of CSE 5050, 5500, or, at the discretion of the student’s adviser, successful completion of a three credit graduate independent study with significant algorithmic content; at least nine credits of GRAD 5950; an oral presentation of a thesis research proposal; completion of a master’s thesis and oral presentation of thesis work.

M.S. Plan B Requirements.At least 30 credits of graduate level courses; at least 18 credits of CSE graduate courses other than CSE 5097, 5099, and 5600; at most six credits, in total, of CSE 5097, 5099, and 5600; at most three credits of CSE 5097; successful completion, with a grade of B- or better, of CSE 5050, 5500, or at the discretion of the student’s adviser, successful completion of a three credit graduate independent study with significant algorithmic content.

Requirements for the Ph.D.

The Ph.D. program requires roughly two years of coursework beyond the M.S. and is intended to prepare students for a career in research. General requirements for the Ph.D. are coursework meeting the Ph.D. program requirements; a dissertation proposal with oral presentation and exam; Ph.D. dissertation and defense; Ph.D. publication requirement; the English proficiency requirement. The Ph.D. in Computer Science and Engineering does not have a related area or foreign language requirement.

Ph.D. Course Requirements.Coursework requirements for the Ph.D. depend on whether the student has an existing M.S. degree in Computer Science, Computer Engineering, or Computer Science and Engineering.

Course requirements for students without an existing M.S. (in CS, CE, or CSE): At least 36 credits of graduate level courses, excluding thesis research credits; at least 18 credits of CSE graduate courses other than CSE 5097, 5099, and 5600; at most 12 credits, in total, of CSE 5097, 5099, and 5600; at most three credits of CSE 5097; satisfaction of the Ph.D. breadth requirements (see below); at least 15 credits of GRAD 6950.

Course requirements for students with an existing M.S. (in CS, CE, or CSE): At least 24 credits of graduate level courses, excluding thesis research credits; at least 12 credits of CSE graduate courses other than CSE 5097, 5099, and 5600; at most nine credits, in total, of CSE 5097, 5099, and 5600; at most three credits of CSE 5097; satisfaction of the Ph.D. breadth requirements (see below); at least 15 credits of GRAD 6950.

The Ph.D. Breadth Requirement.Ph.D. students must fulfill the breadth requirement by successfully completing four breadth courses selected from the areas below. These courses must additionally satisfy the following requirements: CSE 5500 is mandatory and must appear in the breadth courses; the four breadth courses must be drawn from four distinct areas; and the average GPA for the breadth courses must be a 3.7.

Algorithms *(mandatory)* CSE 5500; Programming Languages. CSE 5102; Theory of Computing. CSE 5506; Networking. CSE 5300; Operating Systems CSE 5306; Architecture. CSE 5302; Parallel and Distributed Computing. CSE 5304 or CSE 5510; Machine Learning and Data Mining. CSE 5713 or CSE 5820.

The English Proficiency Requirement.The program requires evidence of English competency for non-native English speakers. The requirement can be met in two ways: either through evidence of level B2 CEFR English competency (TOEFL Speaking score *≥* 23, IELTS speaking score *≥* 7.0, or official UCAELI assessment via interview); or through successful completion of a UCAELI Evening English Course (EEC).

Ph.D. Publication Requirement.All CSE Ph.D. students are required to publish (or have accepted for publication) prior to their dissertation defense, a minimum of three conference level papers; each paper must be a peer-reviewed full conference article, i.e., submitted and reviewed as a full paper and not as an abstract. Published journal articles may also be used to fulfill the requirement, though they must substantially differ from any conference articles used to satisfy the requirement. Major advisers have the authority to establish a higher threshold of publications for their students.

## Curriculum and Instruction (M.A., Ph.D.)

Graduate programs in Curriculum and Instruction lead to degrees of Master of Arts (M.A.) and Doctor of Philosophy (Ph.D.). (The Neag School of Education also confers Sixth-Year Certificates in Professional Education, which are described elsewhere.) Students can enter the Master’s program through one of two routes. The first is through the teacher education/preparation track, which has two paths: the Integrated Bachelor’s/Master’s (IBM) degree program, which is intended for undergraduates at the University of Connecticut who continue on for a fifth year to earn an M.A. degree, and the Teacher Certification Program for College Graduates (TCPCG), which is intended for students who have already completed an undergraduate degree in a major unrelated to education. The certification programs are accredited by the Council for the Accreditation of Educator Preparation (CAEP) and approved by the Connecticut State Board of Education. Alternatively, students can enter the program for reasons other than standard teacher preparation. This route is available, for example, to individuals who are already teachers and may be seeking additional certification. Master and doctoral programs of study are offered in the following areas of concentration: Bilingual and Multicultural Education, Elementary Education, Music Education, Literacy Specialist Program (M.A.) or Reading Education (Ph.D.), and Secondary Education with one of the following concentrations: English Education, World Language Education, History and Social Studies Education, Mathematics Education, and Science Education. The M.A. degrees in Reading and Language Arts Consultant and Remedial Reading, World Language Education, and Bilingual and Multicultural Education may provide a vehicle, as appropriate, for the fulfillment of certification requirements. The Reading and Language Arts certification programs are accredited by the Council for the Accreditation of Educator Preparation (CAEP) and are approved by the Connecticut State Board of Education.

### Master of Arts Requirements.

Requires satisfactory completion of at least 30 credit hours maintaining at least a “B” average. Each plan of study is a non-thesis plan requiring a culminating activity or exam as indicated. There are six different sets of requirements, which depend on the specific route/path the student is in.

### **Integrated Bachelor’s/Master’s (IBM)**

IBM Concentrations in Elementary Education or Secondary Education. Secondary Education includes: English Education, World Languages Education (American Sign Language, French, German, Italian, Latin/Classics, Mandarin Chinese, or Spanish), History and Social Studies Education, Mathematics Education, and Science Education (Biology, Chemistry, Earth Science, General Science, or Physics). Required Courses:EPSY 5195 for two credits; EDCI 5092 for three credits; EDCI 5093 for four credits; EDCI 5094 for three credits; and EDCI 5095 for three credits. Three credits of one of the following: EDCI 5700, 5705, 5715, 5720, 5740, 5742, 5750, 5875, 5885, 5890, 5895, CLCS 5324, or GERM 5325. Three credits of EDLR 5015. One credit of EPSY 5221. Required courses should total 22 credits.

IBM Elective Required Courses: Nine credit hours aligned with content specialty selecting courses in EDCI, EDLR, and EPSY or Graduate Liberal Arts courses totaling nine credit hours.

Exam/Culminating Portfolio Requirement. Will be directed by the student’s advisor.

#### Integrated Bachelor’s/Master’s (IBM) with Concentration in Music Education Required Courses:

EPSY 5195 for two credits; EDCI 5092 for three credits; EDCI 5093 for four credits; EDCI 5094 for three credits; EDCI 5095 for three credits. One of the following three credit courses: EDCI 5700, 5705, 5715, 5720, 5740, 5742, 5750, 5875, 5885, 5890, 5895, CLCS 5324, or GERM 5325. Also required are EDLR 5015 and EDCI 5041. Required courses should total 24 credits.

IBM Elective Required Courses:EDCI 5040 and 5047; or related, approved courses (musical theatre, world music, folk music, etc.) totaling six credits.

Exam/Culminating Portfolio Requirement.Will be directed by the student’s advisor.

### Teacher Certification Program for College Graduates (TCPCG)

Agricultural Education (PK-12) and Secondary Education (Grades 7-12). Secondary Education includes: English Education, World Language Education (American Sign Language, French, German, Italian, Latin, Mandarin Chinese, or Spanish), History and Social Studies Education, Mathematics Education, or Science Education (Biology, Chemistry, Earth Science, General Science, or Physics). Plan B (Non-Thesis) Required Courses:EDCI 5050, 5055, 5060, 5065, 5070, 5080, 5085, 5092, 5825, 5830, 5875; nine credits of EDCI 5090; three credits of EDCI 5830; EPSY 5108. Required courses total 45 credits.

Required Elective: A three credit Education or Graduate Liberal Arts course.

Exam/Culminating Portfolio Requirement.Will be directed by student’s advisor (not filed with the Graduate School by prior arrangement).

### Master’s of Arts Concentrations Outside of Initial Teacher Certification Programs

Concentrations in Bilingual and Multicultural Education, Elementary Education, Literacy Specialist Program, Music Education, or Secondary Education Required Courses:Three courses from the following two areas, with at least one course from each area, totaling nine credits. EDCI/HRTS (Social Justice/Human Rights) EDCI 5700, 5875, 6860. Learners: EDCI 5742; EPSY 5108, 5710, 5750. Three credits from Literacy and Language course options: EDCI 5100, 5110, 5125, 5130, 5135, 5140, 5145, 5250, 5255, 5605, 5715, 5720, 5742, 5750, or 5890. Three credits from Assessment Literacy course options: EDCI 5145, 5765; EPSY 5602.

Content Course Requirements. Students must also complete 15 credit hours in their area of concentration chosen from the categories below.

Bilingual and Multicultural Education: EDCI 5605, 5700, 5705, 5710, 5715, 5720, 5740, 5742, 5745, 5750, 5755, 5760, 5765, 5770, 5775, 5780, 5895, 6860.

Elementary Education in Math, Science, Reading, Language Arts, Social Studies, or Children’s Literature: EDCI 5100, 5105, 5110, 5130, 5350, 5460.

Literacy Specialist Program: EDCI 5100, 5105, 5110, 5115, 5120, 5125, 5130, 5135, 5140, 5145, 5150, 5250.

**Music Education:** EDCI 5040, 5041, 5042, 5043, 5044, 5047.

Secondary Education English Education: EDCI 5125, 5135, 5140, 5250, 5255.

Secondary Education STEM: Math Education and/or Science Education: EDCI 5369, 5450, 5455, 5465, 5500, 5550.

Secondary Education History and Social Studies Education: EDCI 5355, EDCI 5360, EDCI 5830

Secondary Education World Language Education: EDCI 5600, 5890.

Other Course Options. In addition to the EDCI courses listed in each content area above, students may elect additional courses approved by their advisor and these will most often be either Liberal Arts courses or related education courses (EDCI, EPSY, and EDLR).

Exam/Culminating Portfolio Requirement. Report of exam submitted to the Graduate School.

Concentration in Remedial Reading and Language Arts Teacher Requirements.The following areas of study are required. Choices are dependent upon discussion with the advisor.

Early/Intermediate Reading/Writing: Three credits in Reading: EDCI 5100, 5115, or 5125 and three credits in Writing/Language Arts: EDCI 5105 or 5110; three credits of Secondary Reading: EDCI 5125 or 5135; three credits in Disciplinary Literacy/Content Area Reading: EDCI 5140; three credits in Literature EDCI 5130 or 5250; six credits in Diagnosis and Remediation: EDCI 5145 and 5150 (EDCI 5120 if approved by advisor); six credits of Advanced Clinical Practicum EDCI 5155.

Elective Course Options. Determined in consultation with the advisor: three credits of EPSY 5108; general Liberal Arts courses; Independent Study EDCI 5099; other education course(s) in EDCI, EPSY, or EDLR.

Concentration in Reading and Language Arts Consultant Course Requirements:EDCI 5160; six credits of EDCI 5092.

Elective Course Options. Selections are based on the student’s transcript and prior course work. Suggested courses: six credit hours from EDCI 5100, 5105, 5110, 5115, 5125; three credits from EDCI 5135 or EDCI 5125; three credits of EDCI 5140; three credits of EDCI 5130, or 5250; six credits from EDCI 5120, 5145, or 5150; six credits of EDCI 5155; EPSY 5108; three credits of EDCI 5099; related courses in language and/or literacy, curriculum, educational psychology, or educational leadership (EDCI,

EPSY, EDLR).

Exam/Culminating Portfolio Requirement.Report of exam submitted to the Graduate School.

### Doctor of Philosophy

The Curriculum and Instruction Doctor of Philosophy (Ph.D.) program offers nine concentrations: Bilingual and Multicultural Education, Elementary Education, English Education, Mathematics Education, Reading Education, Science Education, Secondary Education, Social Studies/History Education, World Language Education. The Plan of Study for a Doctor of Philosophy (Ph.D.) in Curriculum and Instruction is designed to cultivate beginning expertise in five areas central to scholarly work: Disciplinary Knowledge, Curriculum and Instruction, Professional Skill, Research Methods, and Research Performance. Each area is outlined below. While minimum credit levels are set for each area, the development of emerging expertise in these areas will likely necessitate additional courses or other experiences determined by the student and advisor in consultation. A suggested list of possible courses from which to choose for each area is provided. The doctorate requires satisfactory completion of at least 24 credit hours maintaining at least a “B” average, as well as all other requirements of the Graduate School (e.g., 15 credit hours GRAD 6560 or 6950). In addition to required coursework, candidates complete a comprehensive doctoral exam, prepare and present a proposal for their dissertation study, prepare and defend their dissertation.

Disciplinary Knowledge. A minimum of six credits of the EDCI 6094, doctoral seminar (or equivalent doctoral seminar) designed to provide in-depth exploration and discussion of current topics, issues, and research in a disciplinary area. Options include: three credit hours of EDCI 6094 for a specific topic; three credit hours of EDCI 6094 when repeated with a new topic; three credit hours of an equivalent course, seminar, or independent study; additional credit hours of EDCI courses.

Curriculum and Instruction. A minimum of six credits must be taken through a departmental Proseminar across two semesters that focuses on the history, models, theory, and issues in teacher education. These six credits are typically taken during the first year of doctoral study. Options for earning the minimum six credits include: three to six credits of EDCI 6094; three credits of an equivalent course, seminar, or independent study; additional credit hours of EDCI courses.

Professional Skill. A minimum of six credits must be taken toward initial mastery of professional skills for grant writing, writing for research and professional publication, and teaching courses at the undergraduate and graduate levels. Course options include: EDCI 6010, 6094, 6103; three credits of an equivalent course, seminar, or independent study.

Research Methods. A minimum of 12 credits in research methodology must be taken. The distribution of coursework is established by the Advisory Committee with the doctoral student’s professional goals in mind but is ordinarily a combination of quantitative and qualitative courses to ensure breadth of knowledge for evaluating and conducting rigorous research. Course options include: EDCI 5760, 5824, 6000, 6005, 6860; EPSY 5602, 5603, 5605, 5607, 5613, 5621, 6052, 6601, 6611, 6621, 6626, 6635, 6636, 6637.

Research Performance. A minimum of 15 credits of GRAD 6950 or 6960, Doctoral Dissertation, is required while completing the dissertation research study.

Electives.Identified by the student in consultation with their advisor.

Culminating Requirements.Candidates must complete a General Examination with a written and oral component; a dissertation proposal with a written proposal and oral defense of the proposal; a final examination with an oral defense of the written dissertation.

## Data Science (M.S.)

The University of Connecticut offers a Master of Science in Data Science through The Graduate School with the participation of the College of Agriculture, Health, and Natural Resources, the College of Liberal Arts and Sciences, the School of Business, the College of Engineering, and the Neag School of Education. The following areas of concentration are offered: Advanced Data Analysis, Bioinformatics, Biostatistics, Business Data Science, Cloud Computing, Cybersecurity, Dependent Data Analysis, Geospatial Analysis, Healthcare Analytics, Marketing Analytics, Social and Behavioral Analytics, and Talent Analytics.

**Requirements:** Students must compete at least 30 credits of coursework, including core courses, a capstone course, and additional coursework in an area of concentration or approved by the Academic Director of the program.

**Core Courses:** All students are required to complete the following 18 credits of core courses: STAT 5405, CSE 5713, EPSY 5641 (two credits), ARE 5353 (two credits), STAT 5125, OPIM 5501 (two credits), and CSE 5819.

**Capstone Requirement:** In addition, all students must complete a three-credit applied capstone course, GRAD 5800. If an area of concentration offers an applied capstone course specific to that area of concentration, that course will replace GRAD 5800 as the required capstone course.

**Additional Credit Requirements:** Students who elect not to pursue one of the areas of concentration listed below must complete an additional nine credits of coursework relevant to data science and approved by the Academic Director of the program. Students who choose an area of concentration must complete nine credits of coursework in that area of concentration, as described below.

**Advanced Data Analysis:** nine credits chosen from STAT 5415, 5665, 5675, 5915.

**Bioinformatics:** nine credits chosen from CSE 5800, 5815, 5840, 5860.

**Biostatistics:** The following nine credits: BIST 5615, 5625, 5645. In addition, students in the Biostatistics area of concentration must take STAT 5915 as an applied capstone course (in lieu of GRAD 5800).

**Business Data Science:** nine credits chosen from: OPIM 5501, 5502, 5504, 5509, 5511, 5512.

**Cloud Computing:** nine credits chosen from: CSE 5299, 5300, 5304, 5309.

**Cybersecurity:** The following nine credits: CSE 5850, 5852, 5854.

**Dependent Data Analysis:** The following nine credits: BIST 5815; STAT 5825, 5915.

**Geospatial Analytics:** The following six credits: NRE 5525, 5585. In addition, students must take one of the following: NRE 5215, 5235, 5545, or 5560.

**Healthcare Analytics:** nine credits chosen from: HCMI 5240, 5243, 5686; OPIM 5508.

**Marketing Analytics:** MKTG 5515, and six credits chosen from: MKTG 5220, 5250, 5251, 5565; OPIM 5510.

**Social and Behavioral Analytics:** The following nine credits: EPSY 5643, 6611, 6615.

**Talent Analytics:** The following six credits: MENT 5377, 5680. In addition, students must take one of the following: MENT 5650, 5674, 5675.

## Dental Science (M.Dent.Sc.)

The Graduate School, in collaboration with the School of Dental Medicine, offers one graduate degree in Dental Science: the Master of Dental Science (M.Dent.Sc.). The M.Dent.Sc. degree program is an interdepartmental program whose primary objective is to provide instruction in dental science that enhances the student’s scholarly ability to instruct and undertake research, and may serve as preparation for careers in dental academia. The M.Dent.Sc. degree program is only offered to individuals who are concurrently pursuing advanced dental education in one of the residency certificate programs offered by the School of Dental Medicine. Advanced dental education coursework is required to fulfill M.Dent.Sc. degree objectives.

Requirements: In addition to the Graduate School requirements outlined in the Academic Regulations section of this catalog, the M.Dent.Sc. program requires completion of a minimum of 30 credits with an overall GPA of 3.0. Nine of the 30 credits should be designated as Master’s Thesis Research credits, GRAD 5950 or 5960. Six of the 30 credits may be accumulated through the candidate’s clinical certificate program. The remaining 15 credits must be fulfilled through the completion of other graduate level coursework, including up to six credits of Independent Study, DENT 5495. A major component of the minimum of 30 credits of course work must be related to the student’s specific research area, which is accomplished by a formal review and approval of the student’s plan of study by their Advisory Committee. M.Dent.Sc. students may enroll for a maximum of nine graduate credits per semester. In addition to the minimum number of course credits required for the degree, a candidate’s respective Advisory Committee may require the student to take additional coursework in consideration of the student’s objectives and previous preparation.

## Digital Media Design (M.F.A., M.A.)

The Digital Media and Design department offers two graduate degree programs: a Master of Fine Arts (M.F.A.) and a Master of Arts (M.A.)\*. The department also offers an online graduate certificate.

### Master of Fine Arts (M.F.A.) in Digital Media Design

The program is a customized, three-year graduate program where students work closely with dedicated faculty in the development of their own independent creative practice. The Digital Media and Design Department operates at the intersection of fine art, technology, science, and the humanities. The program is designed for the graduate student with a demonstrated background in digital media/design, giving them the opportunity to intensely pursue advanced education and research in their specific area of expertise, or in an interdisciplinary capacity drawing from more than one area within the digital media space. As part of the School of Fine Arts, Digital Media and Design faculty and students have the opportunity to engage in collaborative projects with both industry partners and top researchers across the university. The M.F.A. in Digital Media Design is a terminal degree intended to provide educational and career-training within an experiential learning environment. The program is structured to develop an in-depth understanding of digital media aesthetics, technology, practice, procedure, design, implementation and/or research techniques employed in the areas of Digital Art, Digital Humanities/Social Sciences, STEM, Business, and Entertainment. In addition to the standard materials, applicants to the M.F.A. degree must submit a digital portfolio through Slideroom showcasing the applicant’s readiness to engage in advanced creative activity and research within one of the DMD specializations: (3D Animation, Digital Culture, Digital Film/Video Production, Digital Media Business Strategies, Game Design, Motion Design & Animation, or Web/Interactive Media Design) or in an interdisciplinary capacity across the DMD specializations.

M.F.A. Requirements: The Master of Fine Arts in Digital Media Design requires a three-year commitment of full-time resident graduate study. A minimum of 60 graduate level credits are required to graduate. Of these 60 credits, required courses are: DMD 5001, 5010, ARTH 5570, and 12 credits of DMD 5015 (taken a total of four times); 18 credits from 5000-level DMD common courses; and six credits, approved by the student’s major advisor, are taken outside the department in a coherent field of study; nine credits are taken in a combination of DMD 4081 or 5099; six credits of DMD 5075; and three credits of DMD 5900.

M.F.A Project Requirement: Students must follow the departmental M.F.A. Final Project Process and Procedures guidelines while developing their M.F.A. Final Project. This includes instructions for the formation of an M.F.A. Advisory Committee, submission of a project proposal, and development of a final project. The M.F.A. culminates in a major public exhibition that is supported by a written statement and exhibition documentation. The exhibition features the body of work resulting from the M.F.A. final project and courses taken in the final year of study. Each candidate then participates in an oral defense of the completed body of work and written statement with their advisory committee.

### Master of Arts (M.A.) in Digital Media Design

The M.A. program is designed to provide a personalized and customized graduate experience for the student with little digital media education or experience. A student will work with his/her advisor to develop their plan of study and their independent studies. The M.A. provides graduate students with the foundational digital media strategies, skills, and tools to pivot and pursue a career in digital media. The program is structured to develop a focused understanding of digital media aesthetics, practice, procedure, technology, design, implementation and/or research techniques within a targeted commercial or creative area including: Digital Arts, Business, Digital Humanities/Social Sciences, STEM, and Entertainment.

M.A. Requirements: The program of study for the M.A. requires one year of full-time resident graduate study. A minimum of 30 graduate level credits are required to graduate. Of these 30 credits, required courses are: DMD 5001 and 5010; 15 credits are selected from 5000-level DMD common courses; six credits are secondary field courses approved by the student’s major advisor and taken outside the department in a coherent field of study; three credits of either DMD 4081 or 5099.

\*The M.A. program is not currently accepting direct applications.

## Dramatic Arts (M.A., M.F.A.)

The Department of Dramatic Arts offers a Master of Fine Arts (M.F.A.). The M.F.A. in Dramatic Arts degree is awarded with a concentration in either Acting, Design, Directing, Puppet Arts, or Technical Direction. Additionally, although the Department does not admit students to the University specifically for a Masters of Arts (M.A.), previously matriculated M.F.A. students may apply for an M.A. degree in Dramatic Arts with a concentration in Acting, Puppet Arts, or Production and Design. The M.F.A. and M.A. in Dramatic Arts are intensive degree programs designed to prepare individuals for the numerous careers in theatre. Our goal is to provide the finest professional training through classroom and studio instruction. To enrich the real-world training, students are provided maximal opportunities to obtain professional level production experience through active participation in plays produced by its theatre production arm, the Connecticut Repertory Theatre (CRT). Through a conservatory approach in a liberal arts setting, our students learn to perform, interpret and teach in all aspects of theatre in a rich learning environment that provides a broad education and intense training. UConn’s M.F.A. in Dramatic Arts is accredited by the University Resident Theatre Association (URTA). The student’s advisory committee determines specific course requirements for the M.A. and M.F.A. in Dramatic Arts, which are consistent with the minimum requirements specified by the Graduate School. In addition to the Graduate School requirements outlined in the Academic Regulations section of this catalog, the graduate programs in Dramatic Arts have additional requirements listed below.

### M.F.A. in Dramatic Arts Areas of Concentration

Acting. The M.F.A. Concentration in Acting requires a minimum of 60 credits. The M.F.A. program is designed to be completed in three years, with students taking formal acting-studio courses in each of their six semesters, appearing as cast in productions at Connecticut Repertory Theatre and completing the Acting NYC Showcase in their third year. Due to course sequencing, students are normally only admitted for the Fall semester.

M.F.A. in Acting Core Requirements: DRAM 5001, 5002, 5003, 5004, 5005, 5006, 5131, 5700, 5701, 5702, 5703, 5704, 5705, 5706, 5801, 5802, 5803, 5804, 5805, 5806, 5197, and 5192.

Design.The M.F.A. Concentration in Design is an advanced, professional training program with focused tracks in the areas of either Costume Design, Lighting Design, or Scenic Design. The degree requires a minimum of 60 credits and a three year residency. Students are encouraged to take courses across all design disciplines. Additionally, M.F.A. Design students are required to fulfill an Internship Milestone which requires participation in a professional theatre, television, or film studio. The Internship Milestone will be a minimum of three months and a maximum of one year of Curricular Practical Training required for a firm grounding in the profession.

### **M.F.A. in Design Core Requirements**

**Costume Design.** DRAM 5130. 39 credits from 5132, 5402, 5403, 5405, 5407, 5410 (repeatable), 5411, 5415, 5416, 5417, 5418, 5419, 5420, 5494 (repeatable), 5497. 15 credits of 5492 (repeatable). Three credits of 5496. Internship Milestone.

**Lighting Design.** Six credits from DRAM 5130, 5132. 18 credits of 5500 (repeatable). 12 credits from 5503, 5514, 5515, 5516. 21 credits from 5592 (repeatable), 5597 (repeatable). Three credits of 5596. Internship Milestone.

**Scenic Design.** Three credits of DRAM 5130. Three credits of 5312. 12 credits of DRAM 5397 (repeatable). 18 credits from 5300, 5301, 5302, 5316, 5319. 12 credits from 5392 (repeatable), 5396. 12 credits from 5131, 5189, 5320, 5392, 5400-5499, 5500-5599, 5600-5699, 5208. Internship Milestone.

Directing. The M.F.A. Concentration in Directing requires a minimum of 60 credits. The M.F.A. program is designed to be completed in three years. The program is highly individualized and aims to educate the student as creative artist, director and leader. To that end, in course and production work, emphasis is placed on developing the director’s unique artistic imagination and mastery of collaborative leadership.

M.F.A. in Directing Core Requirements: DRAM 5130, 5131, 5132, 5159, 5197, 5192, 5200, 5329, 5612, 5700. Total number of hours includes supplemented courses taught elsewhere in the University if approved by students’ advisers.

Puppet Arts.The M.F.A. Concentration in Puppet Arts program is focused on preparing the student for professional work in the Puppet Arts and requires a minimum of 60 credits. Classroom instruction offers the student practice in theory, history, conception, scripting, design, mechanics, fabrication with a variety of materials, and performance with different puppet types. Production work provides practical experience with performance styles, materials, and production development. The M.F.A. program is designed to be completed in three years.

M.F.A. in Puppet Arts Core Requirements:DRAM 5601, 5602, 5603, 5604, 5605, 5607, 5608, 5609, 5610, 5611, 5612, 5613, 5614, 5615, 5616, 5617, 5618, 5619, 5620, 5696.

Technical Direction.The M.F.A. Concentration in Technical Direction is an advanced, professional training in technical production areas associated with the performing arts. The degree requires a minimum of 60 credits and a three year residency. The program emphasizes planning and management and focuses on methods of investigating and applying new techniques, materials and technologies to the technical management and execution of productions. Students are encouraged to take courses across all design disciplines and are expected to assist in designing the Connecticut Repertory Theatre productions.

Technical Direction Core Requirements:DRAM 5132. 36 credits from DRAM 5200, 5201, 5202, 5204, 5207, 5208, 5209, 5211, 5212, 5213, 5297. 15 credits of DRAM 5292 (repeatable). Three credits of DRAM 5296. Six credits of any 5000 level Dramatic Arts Courses.

### M.A. in Dramatic Arts Areas of Concentration

**Acting.** The M.A. Concentration in Acting requires a minimum of 30 credits, which are composed of a set of acting-studio courses, electives, and casting in Connecticut Repertory Theatre productions. Courses are chosen with the approval of the student’s major advisor and based on the student’s previous study and experience, projecting intended personal goals and possible employment.

**Puppet Arts.** The M.A. Concentration in Puppet Arts requires a minimum of 30 credits, which are composed of a set of Puppet Arts courses and electives that are chosen with the approval of the student’s major advisor and based on the student’s previous study and experience, projecting intended personal goals and possible employment.

**Production and Design.** The M.A. Concentration in Production and Design requires a minimum of 30 credits, which are composed of a set of production and design courses and electives that are chosen with the approval of the student’s major advisor and based on the student’s previous study and experience, projecting intended personal goals and possible employment.

## Ecology and Evolutionary Biology (M.S., Ph.D.)

The Department of Ecology and Evolutionary Biology offers two graduate degrees: Master of Science (M.S.) and Doctor of Philosophy (Ph.D.). The M.S. degree may be awarded either in Biodiversity and Conservation Biology or in Ecology and Evolutionary Biology. The M.S. in Biodiversity and Conservation Biology is a non-thesis, coursework-based (Plan B) masters that incorporates internship and research experiences, designed for students preparing for careers in biodiversity management, conservation, and environmental education. (The requirements for this degree are described elsewhere in this catalog.) The M.S. in Ecology and Evolutionary Biology may be either a coursework-based degree or a research-based master’s degree. Many students completing the research-based degree choose to pursue a Ph.D., while others pursue careers with state, local, or federal governments, with non-profit organizations and private companies, and as science teachers. The Ph.D. in Ecology and Evolutionary Biology prepares students for research and teaching careers in ecology and evolutionary biology, including research and leadership positions with non-profit organizations, private foundations, and state, local, or federal government agencies.

Requirements for M.S. and Ph.D. in Ecology and Evolutionary Biology

Specific course requirements for the M.S. and Ph.D. in Ecology and Evolutionary Biology are determined by the student’s Advisory Committee consistent with the minimum requirements specified by the Graduate School. The Ph.D. in Ecology and Evolutionary does not have a related area or foreign language requirement, unless one is specified by the Advisory Committee. In addition to the Graduate School requirements outlined in the Academic Regulations section of this catalog, all M.S. students in Ecology and Evolutionary Biology must pass an oral final examination, and all thesis-based M.S. students must give a public oral presentation of their research prior to the final examination.

## Economics (M.A., Ph.D.)

The Department of Economics offers a Ph.D. degree in Economics. In addition, matriculated students are able to earn a Master of Arts (M.A.) degree in economics, although the Department does not admit students to the University specifically for this purpose. Students interested in pursuing a master’s degree related to economics as their primary graduate program are encouraged to apply to the Department’s stand-alone Master of Science in Quantitative Economics (MSQE) program. The Ph.D. program in Economics prepares students for research and teaching careers, as well as careers in the public or private sectors that require knowledge and understanding of the most advanced economic theory and methods. Ph.D. students specialize through courses in particular fields of study within economics, such as labor economics, macroeconomics, industrial organization, environmental economics, and applied empirical microeconomics (consisting of courses across development, health and labor economics). The M.A. program provides training in economic theory and methods, combined with elective courses that apply the core training in a variety of contexts. It is designed for students pursuing advanced degrees in other programs at the University who want to combine their other studies with a masters-level understanding of economics, or for Ph.D. students in economics who wish to earn a master’s degree as part of their graduate studies or in lieu of completing the Ph.D.

### Master of Arts

The M.A. program is a non-thesis degree. It requires satisfactory completion of at least 30 credits maintaining at least a “B” average. Of these 30 credits, 15 must come from required M.A. core courses and 15 or more are from elective credits approved by the student’s major advisor. The required core courses for the M.A. degree are: ECON 5201, 5202, 5301, 5311, and 5312. Students can also meet core M.A. requirements by taking comparable higher level courses.

### Doctor of Philosophy

The Ph.D. program is designed to be completed in four to five years, with the first three years focused on coursework and the final one to two years on research and completion of the dissertation. Due to course sequencing, students are normally only admitted for the Fall semester. The requirements for the Ph.D. in Economics are as follows:

Required Ph.D. Core Courses: ECON 6201, 6202, 6211, 6212, 6301, 6310, 6311 and 6312. In addition, Ph.D. students must satisfactorily complete at least five field courses, including at least one sequence in a designated Ph.D. field in the Economics Department: labor economics, macroeconomics and money, industrial organization, environmental and natural resource economics, and applied empirical microeconomics (consisting of courses across development, health and labor economics). At least four of the five field courses must be 6000-level. All field courses must be taught (i.e., not independent studies), and other than courses in designated fields in the economics department (listed in this paragraph), only one can be from another department. Students must earn an average grade of at least “B” in these five field courses.

Seminar/Presentation Requirement. Students in years two through five must satisfactorily complete a section of ECON 6494 each semester, including the seminar’s presentation requirement(s). This requirement can be waived during some semesters, if a waiver is deemed to be in the student’s academic interest.

Preliminary Examinations:Ph.D. students are required to sit for the Preliminary Examinations in both microeconomics and macroeconomics following their first year in the Ph.D. program and pass both parts of the examination within two attempts.

Third Year Research Paper:Students must complete a paper that meets the requirements of the Third Year Research Paper before the end of their third year in the Ph.D. program.

Dissertation Proposal: Each student must successfully defend a dissertation proposal, normally by the end of the fourth year in the program.

Foreign Language/Related Area: The Economics Ph.D. program does not have a foreign language or related area requirement.

## Educational Leadership (Ed.D.)

The Doctor of Education (Ed.D.) in Educational Leadership is intended to address the need for visionary educational leaders. Students in this cohort program are currently employed professionals seeking a terminal degree that combines theory, problem solving, and skill development to change and enhance the work of educational organizations. Course work focuses on the critical analysis of problems of practice and covers issues of policy, leadership, social justice and equity, organizational and adult learning, and research methods

### **Doctor of Education Requirements.**

A part-time 41-credit cohort program divided into three distinct phases and culminates in a Capstone project that is empirical in nature and includes original research.

**Required courses:** EDLR 5202, 6050, 6052, 6054, 6055, 6092 (as Critical Reading of Literature and as Methods/Theory), 6312, 6314, 6465, 6466, 6467; GRAD 6950 for data collection and Capstone writing. A total of nine credits of GRAD 6950 is required by the Graduate School. The Ed.D. in Educational Leadership does not have a related area or foreign language requirement.

## Educational Psychology (M.A., Ph.D.)

The Master of Arts (M.A.) and Doctor of Philosophy (Ph.D.) degrees in Educational Psychology may be taken with concentrations in the areas of: Learning Sciences; Educational Technology (M.A. only); Giftedness, Creativity, and Talent Development; Research Methods, Measurement, and Evaluation; Counselor Education and Counseling Psychology; School Psychology; and Special Education. The Ph.D. in Educational Psychology does not have a related area or foreign language requirement. (The Neag School of Education also confers Sixth-Year Certificates in Educational Psychology as described elsewhere in the catalog).

### Learning Sciences M.A. and Ph.D.

The Learning Sciences (LS) program approaches learning and instruction from an applied view of the Learning Sciences and aims to prepare scholars and practitioners who are well versed in different perspectives on teaching and learning and capable of critically evaluating the effectiveness of instructional technologies and techniques across different populations and contexts (including virtual, traditional face-to-face, and blended). The M.A. and the Ph.D. requirements in LS conform to the Graduate School requirements. Specific programmatic requirements and course sequences for M.A. and Ph.D. students are described below.

Master of Arts.Requires a minimum of 30 credits comprised of core (see below) and elective courses. Two different options exist for students who seek the master’s degree. These options pertain to a thesis (Plan A) or non-thesis (Plan B) option, related to a student’s graduate plan of study. For Plan A, students complete a reduced plan of coursework (21 credit hours) plus nine credits of Master’s thesis research (GRAD 5950 or 5960) and defense of a research-based thesis. “Plan B,” the non-thesis option, requires a 30 credit plan of coursework, followed by a comprehensive examination. In general, the thesis option is preferred, especially if the student intends to complete doctoral degree requirements. The list below represents courses typically included in the plan of study for the LS M.A. degree. Waivers and substitutions for these courses are allowed with approval from the student’s primary advisor and advising committee.

Master of Arts Core Courses: EPSY 5510; one credit of EPSY 5515; EPSY 5520, 5530, 5601, 5602, 5605, 5607, and 5220.

Doctor of Philosophy.The Ph.D. program is structured to prepare scholars and practitioners whose primary interests involve issues of cognition, instruction, learning, and technology. Although the Learning Sciences (LS) Ph.D. program is designed to encourage full-time graduate study, several students work part-time in the community. In most cases, these part-time positions are related to the student’s graduate program and consequently may even enhance the student’s skills, professional maturity, and overall educational goals. Students are expected to complete all required courses and complement required coursework with elective coursework related to their specific research interests and professional goals. In addition to required coursework, students are required to pass a comprehensive examination and defend a dissertation proposal before their advisory committee and readers. Students must complete all other dissertation requirements as specified by the Educational Psychology Department and the Graduate School. The list below represents courses typically included in the plan of study for the LS Ph.D. degree. Waivers and substitutions for these courses are allowed with approval from the student’s primary advisor and advising committee.

Doctor of Philosophy Core Courses: EPSY 5510; two credits of EPSY 5515; EPSY 5220, 5520, 5530, 5540, 5602, 5605, 5607, 5610, 5613, 5621, 6601; a minimum of 15 credits of GRAD 6950.

### **Counselor Education and Counseling Psychology M.A. and Ph.D.**

The Counseling Program offers two graduate-level degrees: a Master of Arts (M.A.) degree in Educational Psychology in the area of Counselor Education and Counseling Psychology, and a Doctor of Philosophy (Ph.D.) in the area of Counselor Education and Counseling Psychology. (In addition, the Counseling Program offers a Sixth-Year Certificate). The M.A. prepares students to be fully-certified School Counselors in the State of Connecticut and are accredited by the State of Connecticut and the Council for Accreditation of Counseling and Related Educational Programs (CACREP). The Ph.D. program prepares students for research and teaching careers in Counselor Education or related fields. All programs in the Counseling Program emphasize educational equity and academic access and opportunity as related to eliminating cultural oppression.

Master of Arts Counselor Education and Counseling Psychology Requirements.In addition to the Graduate School requirements, students in the Master of Arts (M.A.) program in Counselor Education and Counseling Psychology must complete the following requirements. Continuation in the Master’s level Counselor Education and Counseling Psychology Program is based on ongoing acceptable performance in meeting all the following criteria: earn grades of “B” or better in each of the counseling courses and seminars; maintain a GPA of 3.0 or higher in their counseling and related program coursework; demonstrate the ability to work successfully with K-12 students in field placement settings throughout the program. Site supervisors evaluate students by using a program designed evaluation instrument aligned with program standards. Students must receive consistently positive evaluations from site supervisors to continue in the program. The M.A. Degree in Counselor Education and Counseling Psychology requires a minimum of two full academic years, defined as four semesters of approved graduate-level study with a minimum of 51 credits. To qualify for National Certification and the Licensed Professional Counselor exam, students must complete 60 credit hours in their Master’s Degree Program of Study. Thus, courses beyond the minimum 51 credits needed to graduate in the Counselor Education and Counseling Psychology M.A. Program can be of your own choosing.

Practicum. Students complete supervised counseling practicum experiences that total a minimum of 100 clock hours over a full academic term that is a minimum of 10 weeks.

Internship. All school counseling students will complete a supervised internship. As of December 1, 2017, the Connecticut State Department of Education will accept a minimum of 700 clock hours of internship over 10 school months to fulfill this requirement.

Final Examination.Students must pass a Comprehensive Exam in order to graduate from the Counselor Education and Counseling Psychology Program. The National Counselor Exam (NCE) is optional and required only if students want to become nationally certified.

Required Courses:EPSY 5108, 5195, 5301, 5304, 5306, 5307, 5308, 5314, 5315, 5316, 5317, 5318, 5319, 5320, 5406, and 5601.

Doctor of Philosophy in Counselor Education and Counseling Psychology.The Ph.D. program is designed to be completed in two to four years, depending on experience as a school counselor. Due to course sequencing, students are normally only admitted for the Fall semester. Before entering the program, all students must possess at least a Master’s degree in counseling, preferably school counseling. This degree in counselor education is geared towards students finding jobs in academia as a faculty member, or in other capacities on a college or university campus. Students choose from among the following specializations based on their interests and career goals: social justice and educational equity; program evaluation; qualitative and quantitative research methodology; gifted and talented education; positive behavioral supports; primary prevention; and licensure as a professional counselor.

Teaching. To build their credentials as future professors, all Ph.D. students will be encouraged to teach (under supervision) in order to gain skills in this area.

Seminar. Doctoral students will be expected to participate in a bi-weekly repeating doctoral seminar.

Required Courses. Ph.D. students are required to complete 15 credit hours in measurement, research and evaluation. These courses include: EPSY 5605, 5607, and 6601. In addition, doctoral students are required to take EPSY 5510.

Dissertation. Ph.D. students must complete a comprehensive examination, prepare a dissertation proposal, and then conduct, write, and defend their dissertation research.

### **Master of Arts in Educational Technology.**

The Master’s degree with an area of concentration in Educational Technology features the “two summers M.A.” online option and campus-based programs. For those students who already hold a Master’s degree, they may apply to the Sixth-Year Certificate program which requires 30 credits beyond the Master’s degree. The graduate program in Educational Technology prepares educators to put theory into practice in service to the wise integration of technology in formal and informal learning environments.

Master of Arts in Educational Technology Requirements. The M.A. in Educational Technology requires 30 credits. For the “two summers” online option, students work in a cohort program to complete their degree by following the program requirements. For on-campus students, two different options exist: a thesis (Plan A) or non-thesis (Plan B) option related to a student’s graduate plan of study designed in concert with a major advisor. For Plan A, students complete a reduced plan of coursework (21 credit hours) followed by nine credits of Master’s thesis research (GRAD 5950 or 5960) and defense of a research-based thesis. Plan B, the non-thesis option, requires a 30 credit plan of coursework, followed by a successful completion of a comprehensive examination. In general, the thesis option is preferred, especially if the student intends to complete doctoral degree requirements. The list below presents courses often included in the plan of studies for the Master’s degree program.

“Two Summers” Master of Arts Courses:EPSY 5198, 5215, 5220, 5225, 5235, 5245, 5339, 5510, 5520, 5601.

On-Campus Master of Arts Suggested Courses:EPSY 5220, 5510, 5515, 5520, 5530, 5601, 5602, 5605, 5607.

### **Giftedness, Creativity, and Talent Development M.A. and Ph.D.**

There are two graduate degrees in Educational Psychology with an area of concentration in Giftedness, Creativity, and Talent Development: the Master of Arts (M.A.) and Doctor of Philosophy (Ph.D.). The M.A. program prepares individuals for specialization in teaching in gifted and talented programs, as well as for leadership roles in creativity and gifted education as program coordinators, curriculum development specialists, and regional or state gifted education agency directors. The program of study includes coursework on strategies and program models for developing student talent and field experiences in school settings. The Ph.D. program is intended for persons who wish to become researchers, state department consultants, authors, university professors, and other types of leaders in the fields of gifted education, creativity, and talent development. Specific course requirements for the M.A. and Ph.D. programs in this area of concentration include those listed below as well as requirements determined by the student’s advisory committee consistent with the minimum requirements.

Master of Arts in Giftedness, Creativity, and Talent Development. The M.A. degree requires satisfactory completion of at least 30 credits maintaining at least a “B” average. The required courses include those listed below; the remaining credit hours come from an elective course approved by the student’s major advisor.

Required Courses: EPSY 5092, 5194, 5601, 5710, 5720, 5740, 5750, 5760, 5780.

Required Examinations:Students must complete required computer-based examinations near the completion of their required coursework. Passing scores on the examinations are required for degree completion.

Doctor of Philosophy in Giftedness, Creativity, and Talent Development.The Ph.D. program includes requirements for coursework, examination, and research as outlined below. It does not have a related area or foreign language requirement, unless one is specified by the advisory committee. Some courses below may be waived based on prior graduate course experience, as documented through program faculty review of the student’s transcript.

Required Courses:EPSY 5510 or 5530, 5605, 5610, 5850, 6601, 6710, 6730, 6770, 6780; EDCI 6000; at least 15 credits of GRAD 6950. Students will also be required to complete one or more of the following courses: EPSY 5621 or 6611; or EDLR 6052.

Additional Requirements.Students without prior coursework in gifted education will be expected to complete or show competence in the content of EPSY 5710, 5720, 5740, 5760, and/or 5780 as guided by the advisory committee.

Required Examinations.Ph.D. students are required to complete three components for their comprehensive examination: students must pass the M.A. level content examination (unless previously passed as part of an M.A. degree); students must pass a program-required statistics examination; and students must complete a combined written and oral examination for program faculty demonstrating competence in the field and readiness for future professional positions. Students must pass each component of the examinations within two attempts.

Dissertation Proposal.Students must submit a dissertation proposal and defend it before their advisory committee and readers. Students must complete all other dissertation requirements as specified by the Educational Psychology Department and the Graduate School.

### **Research Methods, Measurement, and Evaluation M.A. and Ph.D.**

The Department of Educational Psychology offers two graduate degrees with a concentration in the area of Research Methods, Measurement, and Evaluation (RMME): The Master of Arts (M.A.) and the Doctor of Philosophy (Ph.D.). The M.A. program is designed for practitioners who wish to acquire foundational skills and knowledge in the areas of measurement and assessment, program evaluation, and quantitative research methodology. There is also a completely online option for completing the M.A. degree. Some students who earn an M.A. continue into the Ph.D. program. The Ph.D. program is designed for individuals who wish to pursue applied, research, or teaching careers in educational measurement and assessment, program evaluation, or quantitative research methods. In addition to completing the required coursework described below, Ph.D. students are strongly encouraged to seek out research experiences through participation in faculty research grants and projects at the University of Connecticut as well as through summer internships in government and industry agencies engaged in testing, education research, or other research that requires an RMME background.

Master of Arts in Research Methods, Measurement, and Evaluation.Students must complete a minimum of 30 credits while maintaining a GPA of 3.0 or higher across core courses and earn a grade of “B” or better in every core course. M.A. students may choose to earn the degree either under Plan A (thesis) or Plan B (exam). Students who choose Plan A must complete at least 21 credits of required coursework, nine credits of Master’s thesis research (GRAD 5950 or 5960), and complete a thesis under the direction of their major advisor. An oral defense of the thesis is required. The thesis is graded pass/fail by the student’s advisory committee. Students may not defend the thesis until all required coursework is satisfactorily completed. Students who choose Plan B must complete at least 30 credits of required coursework and pass a comprehensive exam containing questions related to content covered in the core courses listed below. The student's advisor may require oral defense of the exam. The passing grade on the exam is 70%. Students who fail the exam can retake the exam once. Students may not take the exam until all required coursework is satisfactorily completed.

Required Courses:EPSY 5601, 5602, 5605, 5607, 6601, 6621, totaling 18 credits.

Additional Coursework.Students must choose from the following courses or alternative courses that are approved by the student’s major advisor, for an additional twelve credits for Plan B or an additional three credits for Plan A: EDCI 6000; EPSY 5510, 5610, 5621, 6623, 6636, 6637, 6651, 6494; EPSY 6601 if EPSY 5601 is taken; PP 5377, 5379.

Doctor of Philosophy in Research Methods, Measurement, and Evaluation.In addition to the Graduate School requirements, Ph.D. students must complete coursework requirements as described below and pass both a preliminary exam after completing a prescribed set of courses generally taken in the first full year of study and a general exam taken after all core courses are completed. Students also undergo an annual review at the end of each academic year. A minimum of 48 credits of required core coursework, three to nine credits of elective coursework and three to nine credits of independent study, internship or practicum credits (for a total of 60 credits) is required for the Ph.D. If a student has already taken required courses at another University or as part of another degree program at the University of Connecticut, the requirement to complete 60 credits can be decreased if the major advisor and the advisory committee agree to the reduction or substitutions. However, all Ph.D. students in Research Methods, Measurement, and Evaluation (RMME) must complete at least 48 credits of doctoral coursework at the University of Connecticut. Ultimately, the student’s major advisor, in consultation with their advisory committee and the RMME program faculty, determine the degree requirements for each Ph.D. student. Students must maintain a minimum GPA of 3.5 in core courses and earn a grade of “B” or higher in every core course. A student who receives a grade lower than a “B” (including “B-”) will be required to repeat the course. Students who receive two or more grades of “C” or lower in a required course or a grade of “D” or lower in any courses may be asked to leave the program. Ph.D. students must show competency in EPSY 5601, 5605, and 5607, either by having previously taken the course or an equivalent, or by taking a competency exam. However, these courses do not count toward Ph.D. credits.

Required Core Courses:EPSY 5510\*, 5602, 5610, 5613, 5621, 6601, 6611, 6615, 6619, 6621, 6623, 6636, 6637, 6638, 6651, and 6655 totaling 48 credits.

\*This requirement may be waived for students who have taken a graduate-level Educational Psychology or Learning course from another university and earned a grade of “B” or better.

Additional Requirements. In addition to core coursework, students complete an additional 12 credits for the Ph.D. degree. Students must complete three to ninecredits from the following elective courses or an alternative elective course that is approved by the student’s advisory committee: EDCI 6000; EPSY 6103; EPSY 6194 in any topical area; HDFS 5005; PP 5379. Students must complete three to nine credits of independent study or practicum/internship. The following courses fulfill the independent study/practicum/internship credits: EPSY 5199 or 6494. Students who complete only three credits of additional coursework must complete at least nine credits of independent study or practicum/internship. Students who complete six credits of additional coursework must complete at least six credits of independent study or practicum/internship. Students who complete nine credits of additional coursework must complete at least three credits of independent study or practicum/internship. Internships may be academic year or summer experiences.

1st Year Preliminary Exam. The 1st year exam is taken after completing the sequence of “first year” and prerequisite courses within the RMME program and must be taken after completion of 15 credits.

General Examination. Ph.D. students must complete the following courses prior to taking the general exam:EPSY 5602, 5610, 5613, 5621, 6601, 6611, 6615, 6619, 6621, 6623, 6636, 6637, 6638, 6651, and 6655. The RMME program general examination must be taken within one calendar year of completing all of the required coursework. Further, the general examination must be passed in its entirety within five years of the beginning of the student's matriculation in the degree program. Students may not take the general examination before the plan of study has been filed with the Office of the Registrar.

### School Psychology M.A. and Ph.D.

There are two programs in School Psychology: a Master of Arts (M.A.) degree, typically combined with a Sixth-Year Certificate in School Psychology, and a Doctor of Philosophy (Ph.D.) program.

Master of Arts in School Psychology.The combined Master’s/Sixth-Year Certificate program is designed to prepare qualified school psychologists to practice in public schools or related educational settings. The program is accredited by the National Council for Accreditation of Teacher Education (NCATE) and is approved by the National Association of School Psychologists and the Connecticut State Board of Education. For certification, students must complete both the requirements for the Master’s degree described below, as well as the additional requirements for the Sixth-Year Certificate in School Psychology (described separately under Sixth-Year Certificate programs). The combined program requires a minimum of 69 semester hours of graduate coursework (including the practica and internship completed under the Sixth-Year Certificate). The Master's degree is awarded after 30 semester hours of coursework, typically at the end of the second year of full-time study. The Sixth-Year Certificate is awarded after successful completion of the remaining semester hours of coursework and the practica and internship. The program is designed so that students can complete all Master's/Sixth-Year program requirements in three years of full-time graduate study.

Required Courses:EPSY 5092 practicum, three semester hours per semester, for two semesters, for a total of six semester hours during the M.A. degree; EPSY 5403, 5404, 5420, 5430, 5510, 5602, 5605, 6469, and 6601.

Doctor of Philosophy in School Psychology. The Ph.D. program in school psychology adheres to the scientist-practitioner model of graduate education in health service psychology. The training is designed to prepare students for the practice of health service psychology based on the scientific method, and to promote the commitment to a career of research directed toward the advancement of the science of psychology. Given this mission, the aims are to prepare psychologists who are knowledgeable and competent in: (1) research with relevance to psychology and the specialty area of school psychology, (2) the practice of health service psychology; and (3) the specialty area of school psychology. These aims facilitate preparation of health service psychologists who will practice in schools or other educationally related settings that will meet the professional employment demands for the following: psychologists in psychoeducational research; mental health research specialists in child psychology; psychologists in child treatment agencies, hospitals, and private practice; and professionals in higher education committed to preparing educators and clinicians in psychoeducational services. The program is accredited by the American Psychological Association and as such complies with the guidelines and principles for accreditation of programs in health service psychology as outlined by the American Psychological Association. Although the program is designed to be at least four academic years of full-time study, students typically take four to five years from the baccalaureate degree to complete all doctoral requirements. This involves a minimum of 110 semester hours of coursework, including 15 hours of dissertation research, and a 1500-hour internship that meets the requirements for school psychology.

Dissertation Proposal. All dissertation research must be directed by a member of the core faculty as the major advisor. Preparation and acceptance of the dissertation proposal should follow current Department and University guidelines. The student must orally present and defend the proposal to the advisory committee.

General Examination. Typically, the general exam is completed near the end of their third or beginning of fourth year, and no later than within five years after beginning their doctoral study. The examination is under the jurisdiction of the student's faculty advisory committee, with at least five faculty participating in the examination.

Required Courses: In addition to the courses required for the Master of Arts degree/Sixth-Year Certificate listed above, all Ph.D. students must also satisfactorily complete the following courses: EPSY 5318, 5455, 5607, 5610, 6194; EPSY 6494 for a total of 24 semester hours across eight semesters; EPSY 6491 for a total of six to twelve semester hours; GRAD 6950 for at least 15 credits in the plan of study; PSYC 5140; PSYC 5570 or 6750.

#### Required Assessments for M.A. and Ph.D. Students.

Portfolios.The portfolio requirements and review process are described in detail in pre-internship and internship portfolio manuals. The pre-internship portfolio consists of work samples completed throughout the program in coursework and practica, professional documents, practicum and self-evaluations, and other relevant program-related documents.

Examinations.Students must pass the Master’s examination prior to being awarded the Master’s degree. The examination occurs near the end of the student's first year and after the student's plan of study has been approved by the Executive Committee of the Graduate School. The Master’s examination is constructed under the jurisdiction of the school psychology faculty and other Departmental faculty who were involved in the student’s first year of course instruction.

The Praxis Series. The Praxis Series - School Psychologist (code 5402) is administered by the Educational Testing Service. Students take the examination after admission to the Sixth-Year program; after completing approximately 42 hours of their coursework in the Master's/Sixth-Year program; and prior to beginning their internship. The standardized examination provides an assessment of content in concert with national standards and allows for the evaluation of our students relative to a nation-wide reference group.

Clinical Requirements for M.A. and Ph.D. Students.M.A. and Ph.D. students must complete the following clinical requirements.

Practica Requirements. The practica sequence was developed in accordance with American Psychological Association (APA) and National Association of School Psychologists (NASP) guidelines that require planned supervised experiences that include direct service and formally scheduled supervision. The field experiences are coordinated with coursework to allow students ample opportunity to combine their theoretical and practical knowledge in a supervised situation. Practicum experiences in a school or related educational setting are a required component of program completion and graduation. Students should refer to the “Program Handbook” and “Practica Syllabus” for information on practica hour requirements.

Internship Requirements. The internship in school psychology complies with APA and NASP standards. The internship is designed to enhance the development of competencies and professionalism and to be the culminating experience in the student’s program. The full description of the internship requirements is outlined in the document entitled “School Psychology Program Internship Manual.” To be eligible for internship, the student must have met all the following requirements prior to signing any contract or internship agreement with an internship site: completed all required coursework with no remaining incomplete courses; passed the Master's Degree Qualifying Examination; completed all practica requirements; passed the Praxis-School PsychologyExamination; passed the Pre-Internship Portfolio; for doctoral students, successfully defended their dissertation proposals.

### Special Education M.A. and Ph.D.

The Program in the Department of Educational Psychology (EPSY) offers two graduate degrees with an area of concentration in Special Education: a Master of Arts (M.A.) and the Doctor of Philosophy (Ph.D.). (In addition, the Department of Educational Psychology offers a Sixth-Year Certificate in Special Education).

#### **Master of Arts in Special Education**. Students can enter the Master’s program through one of two routes. The first is through the teacher education/preparation track, which has two paths: the Integrated Bachelor’s/Master’s (IBM) degree program, which is intended for undergraduates at the University of Connecticut who continue on for a fifth year to earn an M.A. degree, and the Teacher Certification Program for College Graduates (TCPCG), which is intended for students who have already completed an undergraduate degree in a major unrelated to education. Alternatively, students can pursue a master’s degree for reasons other than certification. The non-certification Master’s program is designed for a broad range of professionals (e.g., general or special education teachers, graduates in related fields) to provide in-depth learning and experiences related to supporting children and adults with disabilities and at risk for learning and behavioral difficulties. This program provides advanced study in three areas: Literacy Supports for Students at Risk for Learning Difficulties; School-wide Positive Behavior Supports (SWPBS); and Transition and Postsecondary Supports. Students also may design an individualized plan of study with the approval of their major advisor.

#### Integrated Bachelor’s/Master’s (IBM)

IBM Concentration in Special Education (Grades K-12). Required courses: EPSY 5116; EPSY 5142; Three credits of one of the following: EPSY 5113, 5114, or 5115; EPSY 5195 for two credits; EDCI 5092 for three credits; EDCI 5093 for four credits; EDCI 5094 for three credits; and EDCI 5095 for three credits. Three credits of one of the following: EDCI 5700, 5705, 5715, 5720, 5740, 5742, 5750, 5875, 5885, 5890, or 5895, or CLCS 5324, or GERM 5325. One credit of EPSY 5221. Required courses total 28 credits.

IBM Elective Required Courses: Three credits of one of the following: EPSY 5113, 5114, 5115, 5119, 5121, 5140, 5145, 5405.

Exam/Culminating Portfolio Requirement. Will be directed by the student’s advisor.

#### Teacher Certification Program for College Graduates (TCPCG)

**Concentration in Special Education (Grades K-12).** Required courses: EDCI 5050, 5055, 5060, 5065; EPSY 5092 (three credits), 5113, 5116, 5119, 5121, 5123, 5140, 5141, 5142, 5195 (three credits), 5221 (one credit), and 5396 (nine credits). Required courses total 52 credits.

Exam/Culminating Portfolio Requirement. Will be directed by student’s advisor (not filed with The Graduate School by prior arrangement).

Non-Certification Master of Arts Requirements. The Master’s program requires 30 credits in total, which must include the following courses: EPSY 5092 for three to six credits; EPSY 5119, 5121, 5601.

Doctor of Philosophy in Special Education. The Ph.D. Program is designed to enhance independent thinking and leadership qualities through an individualized program embedded in a thorough knowledge of theory and the existing literature and culminating in active research to guide, direct, and inform the field. It is designed to prepare professionals for leadership positions in research, scholarship, university teaching, and service.

Doctor of Philosophy Requirements: Students complete EPSY 5510; four doctoral seminars (EPSY 6194); EPSY 5605, 5607, 6601; 15 credits of GRAD 6950. Doctoral students also identify an area of emphasis which provides an opportunity to develop expertise in a specialty area such as Literacy Supports for Students at Risk for Learning Difficulties, School-wide Positive Behavior Supports (SWPBS), or Transition and Postsecondary Supports.

## Electrical Engineering (M.S., Ph.D.)

The Electrical and Computer Engineering (ECE) department offers Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees in Electrical Engineering with two possible areas of concentration: Electronics, Photonics and Biophotonics or Information, Communication, Decision, and Energy Systems. In addition, Ph.D. students can take a track in Computer Engineering, either along with one of the areas of concentration or separately. The ECE faculty research spans these areas including projects on control and communications, radar, data fusion, signal and image processing, robotics, sustainable energy systems, semiconductor devices, nanotechnology, and computer engineering.

### M.S. in Electrical Engineering

The M.S. degree program satisfies several different needs. Many students enter the M.S. degree program to round out their educational objectives, prior to seeking employment in a specialized field of study within Electrical Engineering. In this case, the M.S. degree represents a terminal point in their formal studies. Other students plan to continue their studies at the Ph.D. level. In this case the M.S. degree represents a preparatory period designed to give the student the tools and background needed to carry out the more individualized and self-directed research involved in Ph.D. studies.

Either approach is designed to provide comprehensive knowledge of the theoretical and applied aspects of the student’s chosen area of concentration. The graduate program is predicated on students having developed a strong technical background in basic Electrical and Computer Engineering through work in undergraduate courses. The objective of the graduate program is to enhance this background by providing more advanced course work, along with insight into state-of-the-art problems and new research areas.

The Master’s degree may be earned under either of two plans as determined by the student and the advisory committee: [Plan A](http://www.ee.uconn.edu/graduate-program/gradprograms/gradmsprogram/msplana), emphasizing research, and [Plan B](http://www.ee.uconn.edu/graduate-program/gradprograms/gradmsprogram/msplanb), emphasizing graduate course work.

M.S. Plan A Requirements.Students must take a minimum of 30 credits in the program. Typically, this consists of 9-12 credits each semester.

Students complete at least 21 credits of graduate course work. Some students may need more than seven courses to complete Plan A of study. Final determination is made by the student and the student’s advisory committee. Students in the Electronics, Photonics, and Biophotonics area may include no more than six credits of ECE 6099; students in the Information, Communication, Decision, and Energy Systems area may include no more than three credits of ECE 6099; at least nine credits of GRAD 5950; satisfactory completion of a Master’s thesis, with oral presentation; one credit of ECE 6094; have one conference proceedings (CP) (full) paper accepted by the time of graduation. A journal paper may be substituted for the CP.

M.S. Plan B Requirements.Students must take a minimum of 30 credits in the program. Typically, this consists of 9-12 credits each semester. Requirements: At least 30 credits of graduate work, with no more than six credits of ECE 6099 and one credit of ECE 6094 for full-time on-campus students. Students must also pass a comprehensive M.S. examination, which is based on the core course work.

**M.S. Concentration Requirements**

In addition to the general requirements listed above, both Plan A and Plan B students who choose to do an area of concentration must also meet the following requirements:

Electronics, Photonics, and Biophotonics

Required Courses: At least one course from each of the three areas (Area 1 - Electromagnetics/Photonics; Area 2 - Semiconductor/Optoelectronic Devices; Area 3 - Applications). It is not necessary that the remaining courses taken be in the Electronics, Photonics, and Biophotonics area, although they generally tend to be.

Information, Communication, Decision, and Energy Systems

Required Courses: ECE 5101, 6111, 6122, 6151, and 6439. It is not necessary that the remaining courses taken be in the Information, Communication, Decision, and Energy Systems, although generally they tend to be.

### Ph.D. in Electrical Engineering

**General Requirements:** All students in the Ph.D. program must maintain a cumulative GPA of 3.0 or above; pass a two-part general examination near the end of the formal course work; and complete a dissertation which represents a significant contribution to the field.

In addition, students must meet the following minimum research publications requirements:

1. Two conference proceedings, full length papers accepted with first authorship (Journal Papers may be substituted for conference proceedings) by the time of the proposal presentation.
2. Three journal papers with first authorship by the time of the dissertation defense, two accepted and one submitted. With the approval of the advisory committee, up to two journal papers may be replaced by full proceedings papers with first authorship presented at leading international conferences with a documented acceptance rate of under 30% based on data from the previous year. In either scenario, at least one journal paper should have been accepted by the time of the defense.

Students must also meet a related area requirement, which can be satisfied by six credits of additional graduate work in any single technical area (such as Computer Science, Statistics, Physics, Mathematics, or another Engineering field).

The student’s Plan of Study should be completed according to the following requirements and approved before the Ph.D. General Examination. The student’s Advisory Committee has the final word on all Plan of Study matters. After the Plan of Study is approved, a Ph.D. Dissertation Prospectus should be submitted at least six months before the defense.

In addition to these general requirements, students who choose to do an area of concentration and/or the Computer Engineering track must satisfy the requirements specific to those specialties outlined below.

**Ph.D. in Electrical Engineering: Electronics, Photonics, and Biophotonics Concentration**

Requirements: Minimum of 30 credits of content coursework beyond the baccalaureate (or its equivalent) or at least 15 credits of content related coursework beyond the master’s degree or other advanced degree in the same or a closely-related field of study; two credits of ECE 6094.

A student will select six (Ph.D.) courses for the written exams in consultation with their advisory committee. At least one course should be chosen from each area: Area 1 - Electromagnetics/Photonics; Area 2 - Semiconductor/Optoelectronic Devices; Area 3 - Applications.

**Ph.D. in Electrical Engineering: Information, Communication, Decision, and Energy Systems Concentration**

**For Student Holders of M.S. Degree**

Students must take at least 12 credits of appropriate graduate course work and six credits of related area graduate course work. Of these a maximum of three credits may be ECE 6099. The related area can be satisfied by six credits of graduate work in any single technical area (such as Computer Science, Statistics, Physics, Mathematics, or another Engineering field).

ECE 5101, 6111, and 6122 are introductory basic graduate courses and should not normally count toward the 12 required credits for the Ph.D. In special circumstances, a Systems subgroup Ph.D. student’s M.S. background may be considered to have little in common with the Systems subgroup M.S., but nonetheless to be a significant contribution to the students Ph.D. research. In such cases the student’s Advisory Committee may decide that some or all of these courses may be counted toward Ph.D. totals. Such cases are assumed to be unusual.

**Requirements:** ECE 6094 must be taken for credit at least twice. Attendance at this seminar is required every semester for full-time students. A minimum of 15 credits of GRAD 6950.

The Ph.D. General Examination for Information, Communication, Decision, and Energy Systems students who are not in the Energy Systems subgroup consists of required courses: ECE 5101, 6111, 6122, 6439 and one of the following ECE 6099, 6121, 6123, 6151, 6437; elective courses: two additional courses, in agreement with the Advisory Committee. The General Examination for students in the Energy Systems subgroup consist of seven exams: three or four of ECE 5101, 6111, 6122, and 6439; three or four appropriate courses in Energy Systems.

**For Student Holders of B.S. Degree**

Students must take at least 30 credits of appropriate graduate course work and six credits of related area graduate course work. Of these a maximum of three credits may be ECE 6099. The related area can be satisfied by six credits of graduate work in any single technical area (such as Computer Science, Statistics, Physics, Mathematics, or another Engineering field).

Requirements: ECE 6094 must be taken for credit at least two times. Attendance at this seminar is required every semester for full-time students. A minimum of 15 credits of GRAD 6950.

The Ph.D. General Examination consists of the same as in the Ph.D. requirements for students starting with an M.S. degree.

The Ph.D. General Examination for Information, Communication, Decision, and Energy Systems students who are not in the Energy Systems subgroup consists of required courses: ECE 5101, 6111, 6122, 6439 and one of the following ECE 6099, 6121, 6123, 6151, 6437; Elective courses: two additional courses, in agreement with the Advisory Committee. The General Examination for students in the Energy Systems subgroup consist of seven exams: three or four of ECE 5101, 6111, 6122, and 6439; three or four appropriate courses in Energy Systems.

**Computer Engineering Track Ph.D. Requirements**

**For Student Holders of M.S. Degree**

**Requirements:** A minimum of five ECE or CSE graduate courses (15 credits). Of these a maximum of three credits may be ECE 6099. The seminar ECE 6094 has to be taken for credit at least twice. A minimum of 15 credits of GRAD 6950.

The Ph.D. General Examination consists of four exams on Computer Architecture, VLSI Design, Systems, and Algorithms. After the Plan of Study is approved, a Ph.D. Dissertation Prospectus should be submitted and presented before the advisory committee.

**For Student Holders of B.S. Degree**

**Requirements:** A minimum of 11 ECE or CSE graduate courses (33 credits). Of these a maximum of three credits may be ECE 6099. The seminar ECE 6094 has to be taken for credit at least twice. A minimum of 15 credits of GRAD 6950.

The Ph.D. General Exam consists of four exams on Computer Architecture, VLSI Design, Systems, and Algorithms. After the Plan of Study is approved, a Ph.D. Dissertation Prospectus should be submitted and presented before the advisory committee.

## Energy and Environmental Management (M.S.)

 *Jointly offered by the College of Agriculture, Health, and Natural Resources and the College of Liberal Arts and Sciences.*

The Master of Energy and Environmental Management (MEEM) program offers a Master of Science (M.S.) degree through an interdisciplinary partnership involving the Department of Natural Resources and the Environment, Department of Geography, School of Law, and Center for Environmental Sciences and Engineering. The MEEM is designed for college graduates looking for advanced study in energy and environmental management fields, and working professionals looking to enhance their skills and knowledge in science, management, and policy.

### Master of Science Requirements

The MEEM requires 27 credits of coursework and three credits of internship or practicum, for a total of 30 credits. The MEEM generally takes 18 to 24 months to complete and conforms to the Graduate School requirements for a Plan B Non-thesis Master’s Degree.

Required Courses:LAW 7812;NRE 5200 and 5220; and either NRE 5830 (three-credit internship) or NRE 5850 (three-credit practicum).

Elective Courses: Includes 18 credits drawn from one or more of the following specialty areas. Some courses taken within a specialty area may fulfil requirements of a stand-alone graduate certificate program that may be earned concurrent with the MEEM.

Sustainable Environmental Planning and Management:NRE 5200\*, 5205, 5210, 5215, 5220\*, 5225, 5230, 5585.

**Geographic Information Systems:** GEOG 5100, 5130, 5230, 5390, 5500, 5505, 5510, 5512, 5515, 5516, 5518, 5520, 5530, 5540, 5600, 5610, 5620, 5810; NRE 4535, 5525, 5535, 5560, 5575, 5585.

Energy and Environmental Law:LAW 7356, 7554, 7568, 7600, 7650, 7656, 7721, 7758, 7784, 7805, 7806, 7812\*, 7842.

\*Required courses for the Master of Energy and Environmental Management are listed under electives only for illustrative purposes of content under each graduate certificate program. Required courses will not count towards elective course requirements.

## Engineering (M.Eng.)

The College of Engineering offers a Master of Engineering degree with the following concentrations: Advanced Manufacturing for Energy Systems, Advanced Systems Engineering, Biomedical Engineering, Chemical Engineering, Civil Engineering, Computer Science and Engineering, Data Sciences, Electrical and Computer Engineering, Environmental Engineering, General Engineering, Global Entrepreneurship, Manufacturing Engineering, Materials Science and Engineering, and Mechanical Engineering. In addition, the School offers a dual degree with the Master of Business Administration program (M.B.A./M.Eng.).

### Advanced Manufacturing for Energy Systems M.Eng.

Master of Engineering in Advanced Manufacturing for Energy Systems (AMES) is an interdisciplinary degree, suitable for all engineering backgrounds. AMES provides students with background in advanced energy systems and manufacturing processes applied to these systems. Courses focus on fundamentals of energy systems and processes, as well as the background required to address the advanced manufacturing needs of the energy industry.

Advanced Manufacturing for Energy Systems Requirements: Students must take a total of 30 credits, including three MENG core courses ENGR 5311, 5312, and 5314; a capstone design course ENGR 5315; AMES 5111; and five technical elective courses for 15 credits from the following list: AMES 5410, 5420, 5441, 5451, 5461; CE 5164, 5166; ECE 5101, 5510, 5512, 5520, 5530, 6102, 6104, 6108, 6161, 6437, 6439; ME 5110, 5120, 5130, 5140, 5160, 5180, 5190, 5311, 5320, 5341, 5430, 5443, 5511, 5522, 5895 (Fuel Cells), 5895 (Fundamentals of Mechanics of Composites), 6130, 6170; MSE 5001, 5320 (Composites Characterization), 5322, 5336, 5787. Other courses may also be substituted if mutually agreed by the student, advisor and program director.

### Advanced Systems Engineering M.Eng.

The Institute for Advanced Systems Engineering has created a program to train the engineer of the next decade, one who is not constrained by disciplines, and that can bridge the gap between theory and application in the field of cyberphysical systems (C.P.S.) engineering. Students achieve a depth of knowledge in systems engineering practices and methods to work as a systems engineer and to provide leadership and expertise on the development of their company’s systems engineering processes, functions, and methods. The program teaches requirements development and analysis, systems architecting, model-based system engineering methods, physics-based modeling and analysis, machine learning, data science, decision-making, optimization, and verification and validation of engineered systems. Advanced Systems Engineering Requirements: Required core courses are ENGR 5311, 5312, 5314, and 5315. One introductory course must be selected from SE 5000 or 5001. One modeling course must be selected from SE 5001, 5101, or 5201. Two concentration courses must be selected from SE 5102, 5202, 5302, 5402, 5702 or 5095. With prior approval of the major advisor, students may substitute other courses to meet the concentration course requirement. Two electives are required for the remaining required credits, which can be chosen from any engineering discipline. Total requirements are four core engineering courses, and six additional systems engineering courses (30 credits). With prior approval of the major advisor, students in designated programs can meet up to nine credits of these requirements through coursework at other approved institutions.

### Biomedical Engineering M.Eng.

The Biomedical Engineering Department offers an online 30 credit Master of Engineering degree with a concentration in Biomedical Engineering. In this concentration students select either the Clinical Engineering track or the Biomechanics Engineering track. Upon completion of the Biomechanics Engineering track, students will be able to lead in the design, development, and manufacturing of biomedical technology, devices, and systems. The Biomechanics track is well suited to those with an undergraduate degree in either Biomedical Engineering or Mechanical Engineering. Upon completion of the Clinical Engineering track, students will be able to lead healthcare technology implementation and improvement by working with clinicians and administrators, investigate technology-related incidents and accidents, evaluate and specify utility systems which connect to medical equipment, and analyze methods to interconnect medical devices to hospital computer networks to transfer data. Students will be prepared for certification by the American College of Clinical Engineering, will gain exposure in the community, will stay abreast of current technology and best practices, and will be prepared to advance in professional responsibilities and scope of expertise.

**Clinical Engineering Track Requirements:** Required core courses are ENGR 5311, 5312, 5314, and 5315; required concentration courses are BME 5020, 5030, 5040, 5050, 5070, and 5080.

**Biomechanics Engineering Track Requirements:** Required core courses are ENGR 5311, 5312, 5314, and 5315; required core concentration courses (choose four courses from the following) are BME 5000, 5100, 5320, 5500, 5600, 5630, 5700, and 6810; elective courses (six credits, choose from core concentration courses or the following electives) CE 5122, 5128, 5163, 5164, and 5166 or ME 5105, 5150, 5155, 5180, and 5190.

### Chemical Engineering M.Eng.

The Chemical and Biomolecular Engineering Department offers a 30 credit Master of Engineering with a concentration in Chemical Engineering to provide engineers an educational experience that will advance their knowledge and professional skills on modern chemical engineering topics and will prepare them for their careers in an industrial set up. This offering will help to prepare graduates for advanced positions in a variety of industries including petrochemical processing, materials manufacturing, energy distribution, microelectronics, and biotechnology.

**Chemical Engineering Requirements:** Required core courses are ENGR 5311, 5312, 5314, and 5315. Core concentration course: CHEG 5001. 15 credits from the following: CHEG 5301, 5315, 5321, 5323, 5330, 5333, 5339, 5341, 5373, 5376.

### Civil Engineering M.Eng.

The Master of Engineering in Civil Engineering is a 30 credit master’s degree with two tracks: structural engineering and transportation engineering. The field of study of Civil Engineering merges the benefits of technical engineering courses with professional development classes. The target audience includes students who are employed full time in industry as practicing engineers, as well as those interested in expanding their skills before entering industry. As part of a capstone course, all MENG students ultimately complete and defend a final project, typically connected to a work related problem requiring a solution. The structures track focuses on the design of buildings, bridges and other structures and applied mechanics which form the basis of all structural analysis and design. The transportation track focuses on planning, design and operation of transportation systems

Civil Engineering Requirements: Required core courses are ENGR 5311, 5312, 5314, and 5315.

#### **Additional Track Core Courses**:

**Structural Track (12 credits in total):** four of the following: CE 5650, 5122, 5125, 5128, 5150, 5151, 5163, 5164, 5166, 5380, 5382, 5383, 5384, 5610, 5620, 5640.

**Transportation Track (nine credits in total):** three of the following: CE 5200, 5720, 5730, 5740, and 5750.

#### Electives:

**Structural Track:** six credits of any engineering course with M.Eng. advisor approval.

**Transportation Track:** nine credits from CE 5125, 5128, 5150, 5151, 5163, 5166, 5380, 5640, 5715, 5725, and 5735.

### Computer Science and Engineering M.Eng.

The Master of Engineering with a concentration in Computer Science and Engineering fully prepares students for a career in industry. It also enhances the computing expertise of industrial personnel. Students could also pursue a Ph.D. degree after completing this program. This program provides comprehensive knowledge of the theoretical and applied aspects of computer science and engineering. The M.Eng. program assumes that the student already has a background in computing equivalent to a B.A. or B.S. in Computer Science, Computer Science and Engineering, or Computer Engineering.

**Computer Science and Engineering Requirements:** The degree requires at least 30 credits of graduate level courses. These must include the following four core courses (12 credits in total): ENGR 5311, 5312, 5315, and CSE 5050 or 5500. Students must pass CSE 5050 or 5500 with a grade of B- or higher. Students may take CSE 5500 as an elective if not already taken as a core course. Students are required to take an additional 18 credits of graduate-level coursework in CSE. At most, six of those credits can be from a combination of CSE 5097, 5099, and 5600, with at most three credits from CSE 5097.

### Data Sciences M.Eng.

The Computer Science and Engineering Department offers a 30-credit Master of Engineering degree to train engineers on the design of advanced techniques to analyze different kinds of engineering data. The certificate program will build competency in the art of visualizing data and communicating technical ideas through data visualization, as well as competency in data mining, artificial intelligence and machine learning algorithms. This degree is designed to provide functional literacy in critical data sciences and engineering and technical analytics. Students are able to parlay their certificate credits into this degree concentration to receive a full Master of Engineering.

Data Sciences Requirements: Required core courses are ENGR 5311, 5312, 5314 (or CSE 5050 or 5500), 5315. Required concentration courses are CSE 5520, 5713, 5717, 5819. In addition, students must take two elective courses from the following: CSE 5050 (cannot be taken to earn credit after 5500), 5500, 5820, 5850; ECE 6141, 6437; ENGR 5314; ME 5511; ME 5895 when offered as “AI for Design and Manufacturing,” or “Computational Nanomechanics;” SE 5402, 5702; CSE 5835 or CSE/SE 5095 when offered as “Machine Learning for Physical Sciences and Systems.” Courses may not be used to simultaneously fulfill both core and elective requirements.

### Electrical and Computer Engineering M.Eng.

The Electrical and Computer Engineering department offers a 30 credit Master of Engineering concentration. Electrical Engineering focuses on various industries from electric power and communications to create technologies connecting the world and helping to improve our lives. Computer Engineering emphasizes the analysis, design, implementation, optimization, and application of computing systems. This concentration allows students to provide technical contributions to design, development, and manufacturing in their practice of electrical and systems engineering, in addition to professional development.

Electrical and Computer Engineering Requirements: Core courses are ENGR 5311, 5312, 5314 and 5315; 18 credits are required for concentration courses and can be chosen from any graduate-level coursework in ECE except ECE 6094 or ECE 6099. Other graduate engineering courses may be taken as concentration electives with prior approval of the advisor.

### Environmental Engineering M.Eng.

The Civil and Environmental Engineering department has created a series of courses that will provide the necessary knowledge at an advanced level for thorough understanding of environmental engineering knowledge, techniques and technologies. This will allow students to use appropriate tools and techniques for the planning and design of site investigations and waste containment systems. The depth of knowledge provides an understanding of physical, chemical and biological processes governing containment fate and transport in the environment and application of modern tools to predict behavior. Students will learn to apply fundamental physical, chemical and biological principles to problems in environmental engineering and design comprehensive treatment strategies. In addition, students will acquire the professional discipline for staying abreast of current environmental engineering best practices, follow changes in regulatory and safety standards, and adhere to ethical engineering practice. Students become a member of the environmental engineering community through networking with professional societies, and will be prepared to advance in professional responsibilities and scope of expertise.

**Environmental Engineering Requirements:** Required core courses: ENGR 5311, 5312, 5314or ENVE 5320, and 5315. In addition, students are required to take an additional six courses (18 credits) from the following environmental engineering concentration electives: AH 5275; ENVE 5210, 5240, 5252, 5310, 5311, 5330, 5331, 5530, 5810, 5811, 5812, 5821, 5830, and 5850.

### General Engineering M.Eng.

The General Engineering concentration is multidisciplinary. This is particularly attractive to practicing engineers and professionals in related fields who seek a wider base of knowledge. The M.Eng. in General Engineering requires students to complete 30 credits of graduate level study. Students in this degree concentration will be required to study a set of core disciplines, as well as a range of elective courses.

General Engineering Requirements: Core courses are ENGR 5311, 5312, 5314 or CSE 5500 (choose one math), and 5315 Capstone Project for three credits. To facilitate further flexibility in coursework structure, students are required to complete 18 additional engineering credits with guidance provided from their advisor.

### Global Entrepreneurship M.Eng.

The Global Entrepreneurship program, a partnership between the University of Connecticut Schools of Engineering and Business and Southern Connecticut State University, is intended to create a nurturing ecosystem for a profession that sees 90 percent of start-ups fold. Students in the program will have a diversified science or engineering background and unique entrepreneurial ideas. This program will enable novice entrepreneurs to learn best practices, receive mentorship from veteran entrepreneurs, and be set up for success.

**Global Entrepreneurship Requirements**: Core courses are ENGR 5311, 5312; ENGR 5300 when taught as Experiential Technology Entrepreneurship I and II (six credits), and ENGR 5315, a capstone project on market survey, prototyping and/or product development (three credits). In addition, three entrepreneurial idea-related, technical courses are required, which should be 5000 or 6000 level engineering or science courses, and must be approved by the student’s major advisor. For students working on healthcare-related entrepreneurial ideas, one of these three courses must be BME 6086 when taught as Entrepreneurship Life Sciences (three credits). Two electives (three credits each) are required for the remaining required credits, which can be chosen from a list of entrepreneurial/business classes at the University of Connecticut. Total requirements are five core courses and five additional concentration category courses totaling 30 credits.

### Manufacturing Engineering M.Eng.

The Mechanical Engineering department offers a fully online 30 credit Master of Engineering with a concentration in Manufacturing Engineering. This curriculum features the synergistic blend of traditional manufacturing techniques and the recent, revolutionary progresses in Industry 4.0 initiative.

**Manufacturing Engineering Requirements:** Core courses are ENGR 5311, 5312, 5314, and 5315. Students must also take: four of the following six courses MFGE 5110, 5120, 5130, 5140, 5210, and 5220; and two engineering electives (for six credits), which can be chosen from existing College of Engineering online courses with major advisor consent needed.

### Materials Science and Engineering M.Eng.

The Materials Science and Engineering department offers a 30 credit Master of Engineering concentration intended for working professionals seeking to advance their knowledge in the discovery, design, selection, characterization, modeling or applications of modern engineering materials, especially metals, alloys, ceramics and composites. Courses in the MSE curriculum place common emphasis on the development of fundamental principles used to establish relationships between structure, processing, properties and performance of materials in engineering applications. Students select plans of study that best match their individual interests or help them achieve their educational and professional goals. Materials Science and Engineering Requirements: Required courses: ENGR 5311, 5312, 5314, and 5315. In addition, 18 credits of MSE concentration courses are required. Of these 18 credits, at least 12 credits must come from graduate (5000-level) courses in the MSE field of study. Up to six credits of graduate (5000-level) courses covering topics relevant to materials science or materials engineering may be taken in fields of study other than MSE with major advisor approval.

Students who have completed the certificate in Advanced Materials Characterization may apply up to six credits of the IMS courses as approved coursework in fields of study other than MSE and may substitute up to six additional credits of the IMS courses for the equivalent number of MSE course credits.

### Mechanical Engineering M.Eng.

The Mechanical Engineering Department offers a 30 credit Master of Engineering concentration in Mechanical Engineering. These courses encompass analysis, design, manufacturing, and maintenance of mechanical systems. There are two concentration paths: Systems and Mechanics, and Thermal and Fluid Sciences.

Mechanical Engineering Requirements: Core courses are ENGR 5311, 5312, 5314, and 5315 Capstone Project for three credits.

The core courses required for the Systems and Mechanics concentration path are ME 5105, 5150, 5155, 5160, 5180, 5190, and 5420. Chose six of the seven courses for a total of 18 credits.

The core courses required for the Thermal and Fluid Sciences concentration path are ME 5110, 5120, 5130, 5140, 5311, and 6170.

One three credit elective is required from: ME 5210, 5320, 5511, 5895 (when offered as Mechatronics or Fuel Cells), or 6160.

To facilitate further flexibility in coursework structure, it is possible for students to use certain elective courses to substitute for closely related core courses. This must be done by students receiving approval from their major advisor.

## English (M.A., Ph.D.)

The English Department has three graduate programs: Master of Arts degree (M.A.), Master of Arts Degree/Doctor of Philosophy (M.A./Ph.D.) and Doctor of Philosophy (Ph.D.). The M.A. program is for students who wish to pursue the M.A. degree but do not intend to go on for a Ph.D. Full-time students will be funded for two years.

### Master of Art Requirements

Students are normally expected to complete the Master’s degree within two years. Students complete 32 credits, usually in this pattern: eight credits in the first semester (ENGL 5100, Theory and Teaching of Writing, three credits, ENGL 5182: Practicum in the Teaching of Writing, one credit and ENGL 5150: Research Methods, one credit, plus another three-credit course); nine credits in the second semester; six credits in the third semester; and nine credits in the fourth semester.

Required Courses: ENGL 5100, 5182, 5150; one course in theory (literary, cultural, rhet/comp) ENGL 5500, 6500, or another approved course; one course in literature in English before 1800; and one course in literature in English after 1800. In addition, students must complete a final writing project in the second year, consisting of a revision of a seminar paper as a professional article, between 7000 and 8000 words, undertaken in consultation with an appropriate faculty advisor. (An independent study to revise the paper cannot be counted toward the coursework requirements for the degree). The deadline for the submission of the final writing project is March 1. Final writing projects will be evaluated by the M.A. Committee.

### M.A./Ph.D. Requirements

M.A./Ph.D. students who enter the program with a B.A. degree should be completed in six years. Students normally enroll in coursework for three years beyond the B.A. Work for the doctor of philosophy degree must be completed within eight years of the beginning of the student’s matriculation. Students are required to complete 47 credits of course work at the University of Connecticut for the M.A./Ph.D. including the 15 mandatory GRAD 6950 research credits. The usual course load for a full-time student in each semester is between six and nine credits (if the student is a teaching assistant).

Required Courses: ENGL 5100, 5182, 5150, 5160; one course in theory (literary, cultural, rhet/comp) ENGL 5500, 6500 or another approved course; one course in literature in English before 1800; one course in literature in English after 1800.

### Ph.D. Requirements

Ph.D. students who enter with an M.A. degree are funded for five years. Students normally enroll in coursework for two years beyond the M.A. Work for the doctor of philosophy degree must be completed within eight years of the beginning of the student’s matriculation. Students are ordinarily required to complete 24 credits of course work at UConn for the Ph.D., and at least 39 credits total of graduate work including the 15 mandatory GRAD 6950 credits. Requirements for the doctoral degree should be completed in five years for Ph.D. students (those entering with an M.A.)

Required courses:ENGL 5100, 5182, 5160; one course in theory (literary, cultural, rhet/comp) ENGL 5500, 6500 or another approved course; one course in literature in English before 1800; one course in literature in English after 1800.

Students who feel they have fulfilled any of the requirements listed above (at another institution) may petition the graduate program office to have those requirements waived at the University of Connecticut.

## Environmental Earth Sciences

The 4+1 M.S. in Environmental Earth Sciences prepares students for a career as an Environmental Professional/Professional Geoscientist. Courses cover the fundamentals of how the earth works from physical, chemical and biologic perspectives and provide program participants with a unique set of skills to address the environmental, water, and climate challenges of the 21st century. Students complete 30 credits. Up to 12 credits of the required graduate coursework at the 5000 level or higher may be used toward both the undergraduate and M.S. plans of study and students are expected to take between nine and 12 credits of required courses while they are undergraduates. However, courses taken at the 3000-4000 level that are counted on a graduate plan of study cannot also be counted toward an undergraduate degree. Only six credits of 3000 or 4000 level coursework may count toward the M.S.

**Required Courses:** ERTH 4150/5150 and ERTH 6000.

**Track Courses:** Students must take at least two courses from Group A (Data Acquisition and Analysis), two from Group B (Water, Climate, and the Environment), and select two from either group chosen in consultation with the student's advisor.

**Group A: Data Acquisition and Analysis**

ERTH 3030, 3710, 5230/4230, 5240/4240, 5430/4430, 5440/4440, 5710/4710, 5810/4810.

**Group B: Water, Climate and the Environment**

ERTH 3020, 3230, 5130/4130, 5210/4210, 5720/4720, 5735/4735, 5740/4740, 5850/4850.

**Electives:** Students must complete six additional credits of graduate-level coursework chosen in consultation with the student’s major advisor.

## Environmental Engineering (M.S., Ph.D.)

The Environmental Engineering Program offers two graduate degrees, Master of Science (M.S.) and Doctor of Philosophy (Ph.D.). The M.S. degree is awarded in Environmental Engineering and may be either research-based, Plan A, or coursework-based, Plan B. Plan A students often pursue further Ph.D. studies or careers in research and development in government and private institutes. The Ph.D. in Environmental Engineering prepares students for research and teaching careers in environmental engineering, including higher education, private foundations, and state, local, or federal government agencies. Both M.S. and Ph.D. degrees are offered in three areas of specialization: atmospheric processes, hydrogeosciences and water resources management, and contaminant fate and resource recovery.

Environmental Engineering Requirements. The M.S. and the Ph.D. requirements in Environmental Engineering conform to Graduate School requirements. The specific requirements for coursework and research are described below. The Ph.D. in Environmental Engineering does not have a related area or foreign language requirement, unless one is specified by the advisory committee.

Environmental Engineering M.S. Plan A Requirements. A total of 30 credits are required for graduation, with a minimum of 21 credits of coursework in Environmental Engineering or related area and a minimum of nine credits of GRAD 5950. A student may enroll in GRAD 5950 credits at any time during the M.S. degree and it is their responsibility to coordinate with their research advisor and secondarily, with their research committee, on the research plan and requirements for graduation.

All M.S. students are required to take ENVE 5310 and 5320.

The remaining courses may be related to one of the three areas of specialization in consultation with the advisor.

A plan A M.S. requires the submission of an M.S. thesis, in the form of a submission-ready paper manuscript, and an oral defense for graduation. The oral defense fulfills the role of the final examination for the M.S. degree. The scope, content and length of the M.S. thesis results from the agreement between the research advisor and the student. An advisory committee of at least two additional faculty members will also weigh in on the originality and quality of the thesis prior to graduation. In general, the thesis should present the methodology and results of novel, independent research conducted by the student. Thus, plan A M.S. theses cannot be solely literature reviews or replicate research already published in the scientific literature. As a standard, the M.S. thesis should constitute the basis for a journal paper submission and may be structured as such.

Environmental Engineering M.S. Plan B Requirements.A total of 30 credits are required for plan B Master’s, with a minimum of 27 credits of coursework in Environmental Engineering or related area. The remaining credits may be used towards additional courses or towards a research project by taking ENVE 5020.

All M.S. students are required to take ENVE 5310 and 5320.

The remaining courses may be related to one of the three areas of specialization in consultation with the advisor.

The final examination for a plan B Master’s is an oral or written exam on three core courses of Environmental Engineering: ENVE 5310 and two additional ENVE courses selected by the student. The exam will take place in the final semester before graduation and it will be administered by the advisory committee that will sign the Plan of Study and the Report on the Final Examination.

#### Environmental Engineering Ph.D. Requirements

If a student is admitted to the Ph.D. program with only a B.S. degree, at least 30 credits of coursework are required. If the student has a M.S. degree, the minimum requirement is 15 credits. However, if the M.S. degree is in a field other than Environmental Engineering, the Environmental Engineering Graduate Admissions committee will determine the minimum number of credits required for coursework.

All Ph.D. students are required to take or demonstrate proficiency in the following courses prior to taking the General Examination: ENVE 5210, 5310, 5320, 5810, and (5821 or 5540).

The advisory committee may substitute the above with equivalent courses. The remaining credits may be taken in one of the three areas of specialization with courses selected in consultation with the advisory committee. In addition, all students must register in the seminar course, ENVE 5094, each semester it is offered.

The Qualifying Examination is taken after the student has completed at least 12 credits of coursework (with a M.S.) or 18 credits of coursework (with a B.S.) and is considered the first part of the General Examination. The program administers the examination twice a year, in January and in May. An approved Plan of Study must be filed with the Office of the Registrar before the Qualifying Examination can be taken. The Environmental Engineering Program administers the Qualifying Examination as both a written and an oral examination to test student mastery of core environmental engineering concepts and student ability to integrate concepts across disciplinary areas.

Part two of the General Examination is taken at most one year after the Qualifying examination. The student will prepare a dissertation proposal that outlines the proposed research for the dissertation. The student will defend their proposal in an oral examination to a minimum of five faculty, including all members of their advisory committee.

In addition to Graduate School requirements, the Environmental Engineering Program requires that a Ph.D. student must have three journal papers. One published or accepted for publication, one under review and one in the final stages of preparation. However, it is important that the three papers address a larger, coherent research question as outlined in the Dissertation Proposal and they are not isolated bodies of work.

## Exercise Prescription (M.S.)

The Master of Science in Exercise Prescription (M.S.E.P.) is an online, non-thesis, master’s degree program designed to provide the knowledge and critical thinking necessary to effectively prescribe exercise to a variety of populations. Admission to the graduate program in Exercise Prescription requires completion of an undergraduate degree in exercise science, or related health and science fields. Prior coursework in Exercise Physiology, Nutrition, and Psychology is encouraged. Students complete 30 credits, including 24 required credits and 6 elective credits.

**Required Courses:** KINS 5112, 5507, 5508, 5595, 5509, 5511, 5594, 5596.

**Electives:** Six credits of related graduate-level coursework from any of the following departments chosen in consultation with a student’s advisor: AH, KINS, or NUSC.

## Financial and Enterprise Risk Management (M.S.)

The Master of Science in Financial and Enterprise Risk Management (MSFERM) degree prepares students to develop and direct investment strategies and manage the financial risk of firms, institutions, and private clients. Many students completing the MSFERM degree program look for positions in finance or risk management upon graduation. Students may elect to continue their studies and complete the Concentration in Quantitative Methods in Risk Management (QRM). Some graduates choose to pursue a Ph.D. in areas such as finance, mathematics or economics. The optional concentration in QRM is coursework-based and provides deeper training in programming and financial modelling with computer and software applications. Students must complete a minimum of 33-36 credits. The program may be completed part-time or full-time. Students must complete an Experiential Learning Requirement prior to graduating.

Required courses:FNCE 5310\*, 5312, 5313, 5321, 5322, 5323, 5331, 5332, 5333, 5334, 5341, 5343, and 5344.

\* This course is waived if a student has previously taken FNCE 4306 or equivalent.

Experiential Learning Requirement. Students are required to complete an Experiential Learning Requirement (ELR).

Accelerated track.Undergraduate students enrolled in Finance or other related majors (including other business majors, Economics, Actuarial Science, and Mathematics) may apply for the Accelerated track during their junior year. Students must go through a competitive admissions process, and if accepted into the track, will have to take and pass both FNCE 5323 and FNCE 5333 as undergraduate students.. This allows Accelerated students to complete the MSFRM program within one additional year of study after completing their undergraduate degree, with 30 credit hours of graduate work if exempted from FNCE 5310, or 33 credit hours otherwise.

Concentration in Quantitative Methods in Risk Management (QRM).The concentration in QRM requires students to complete an additional nine credits beyond the requirements for an FRM degree. The Concentration includes two courses on advanced and quantitative applications in Financial Modelling and Financial Engineering and a comprehensive course on Enterprise Risk Management (ERM). The following courses are required to complete the concentration: FNCE 5351, 5352, and 5353.

## Financial Technology (M.S.)

The Master of Science in Financial Technology (M.S. Fintech) is designed to meet the growing demand for professionals who can harness advanced business analytics, technology solutions and financial services skills to address existing business problems. Skills developed in the program will allow students to create new opportunities for small to global enterprises in information-rich environments including Fintech, Insurtech, Medtech, and Regtech. Students must complete 36 credits to fulfill all degree requirements. The program will be in-person and can be completed on a full-time or part-time basis.

**All students must take the following required courses:** FNCE 5710, 5711, 5712, 5720; OPIM 5512, 5513, 5603, 5604.

The remaining credits come from electives. The following electives have been approved for meeting degree requirements: FNCE 5352, 5353, 5721, 5722, 5757; OPIM 5272, 5501, 5509, 5514, 5671. Additional courses may be used to meet degree requirements with the consent of the program director.

**Accelerated Master of Science in Financial Technology (FinTech)**

Prospective undergraduate UConn students must apply to the Accelerated Master of Science in Financial Technology Program through the online pre-graduate application through the Graduate School once they have successfully completed 54 undergraduate credits. The pre-graduate application is in addition to The Graduate School's formal application process and does not guarantee admission.

Undergraduate students receiving a grade of B or better in FNCE 5711 and OPIM 5603 who are admitted into the UConn Graduate School may apply these six credits toward both the undergraduate and M.S. plans of study. To complete the M.S. FinTech degree, students admitted to the Accelerated Masters are required to complete 30 credit hours, having completed six of the required credits to attain admission to the M.S. FinTech program.

## Genetic Counseling (M.S.)

The Institute for Systems Genomics under the authority of The Graduate School at the University of Connecticut offers a Master’s Degree in Genetic Counseling. The mission of the Genetic Counseling Professional Science Master’s degree program is to prepare the next generation of diverse genetic counseling professionals who can foster innovation, advocacy, and leadership in a technologically dynamic discipline for improved health care outcomes and lifelong learning. The program is accredited by the Accreditation Council for Genetic Counseling, not offered on a part-time basis, and includes required summer components. The program is delivered in a hybrid model wherein the didactic classes are offered in an asynchronous online format and the fieldwork/practical training requires travel to external affiliated hospitals, centers, and clinics. The Genetic Counseling curriculum meets the Accreditation Council for Genetic Counseling (ACGC) requirements in that student training supports the 22 practice‐based competencies within four domains: Genetics Expertise and Analysis; Interpersonal, Psychosocial and Counseling Skills; Education; and Professional Development and Practice. Programmatic student learning outcomes are designed to meet the genetic counseling Professional Based Competencies and the American Board of Genetic Counseling National Certification Examination.

The Genetic Counseling Program is an Affiliate of the National Professional Science Master’s (PSM) Association. PSM programs are those which provide interdisciplinary scientific learning, with an emphasis on professional development training and supervised internships, in addition to other standards. Graduates of the Genetic Counseling Professional Science Master’s Degree Program will receive a Master’s Degree in Genetic Counseling and a National Professional Science Master’s Association Certificate of completion.

**Program Requirements.** Except in special cases, genetic counseling students will complete 43 credits of required didactic coursework and clinical rotations within 24 months. In addition, the student will complete three pre-approved courses; statistics, research methods, and an elective. The successful graduate student under the supervision of a three-faculty member Advisory Committee will complete the requisite number of academic credits inclusive of course work, professional development, clinical rotations, comprehensive examinations, and a capstone project as outlined in an approved plan of study.

**Didactic Coursework:** ISG 5100, 5102, 5103, 5140, 5141, 5142, 5200, 5203, 5601, 5715, 5730 (three credits), and as pre-approved by Program Director one course in statistics, research methods, and one elective.

**Clinical Rotations:** ISG 5091 (five credits)

**Capstone:** ISG 5099 (three credits)

## Geography (M.A., Ph.D.)

The Department of Geography offers programs leading to two graduate degrees: Master of Science (M.A.) and Doctor of Philosophy (Ph.D.). (The department also offers a Graduate Certificate in Geographic Information Systems). The M.A. can be earned in course-intensive programs and in programs requiring evidence of meaningful research in the form of a thesis. It provides students with sufficient skills to be successful in private industry, government, and further graduate education. The Ph.D. in Geography provides students with an advanced understanding of theory and techniques required to execute significant research in the contemporary discipline of Geography. The Ph.D. is awarded only after the successful completion of a series of comprehensive examinations and the successful defense of a doctoral dissertation that makes a significant contribution to geographical research. The Ph.D. in geography provides its holders with opportunities for academic, government, and increasingly, private industry research positions.

Requirements: The M.A. and Ph.D. requirements in Geography conform to the Graduate School requirements as outlined in the Academic Regulations section of this catalog. The M.A. can be earned under either Plan A or Plan B. Plan A (thesis option) requires a master’s thesis, including a thesis defense, while Plan B (non-thesis option) requires a comprehensive final examination. Specific plans of study for each student’s degree objective are determined in consultation with their advisory committees, and in conformance to the Graduate School requirements. Ph.D. plans of study must fulfill a foreign language requirement or have a related area of at least six credits of course work as designated by the student’s advisory committee. Each graduate student normally takes GEOG 5000, 5010 and 6000 in the first year of study. Students can expect their programs to take two years for the M.A. and three to five years for the Ph.D., depending upon preparation and interests.

## Geological Sciences (M.S., Ph.D.)

The Department of Geosciences offers two graduate degrees in the field of Geological Sciences: Master of Science (M.S.) and Doctor of Philosophy (Ph.D.). The M.S. in Geological Sciences may be either a coursework or research-based degree. The M.S. prepares students to pursue a Ph.D. or for careers in government, industry, teaching, or the non-profit sector. The Ph.D. prepares students for research and teaching careers in academia, as well as for research and leadership positions in government, industry, and the non-profit sector. Students may choose Geology or Geophysics as an area of concentration.

Requirements: The M.S. and the Ph.D. requirements in Geological Sciences conform to the Graduate School requirements as outlined in the Academic Regulations section of this catalog. All M.S. and Ph.D. students are required to pass ERTH 5000 (Geoscience Core Course); additional course requirements are determined by the student’s advisory committee consistent with the minimum requirements specified by the Graduate School. There are no specific requirements for the areas of concentration beyond advisor approval.

## Health Care Genetics (M.S.)

Recent milestones in genome-based technologies and genetic research have realized novel approaches to clinical diagnostic testing, health promotion, and individualized health care. The Department of Allied Health Sciences, under the umbrella of the College of Agriculture, Health and Natural Resources and the Institute for Systems Genomics, offers an innovative Professional Science Master’s Degree in Health Care Genetics.

A Professional Science Master’s Degree in Health Care Genetics is a science degree “plus” experiential and professional development training designed to increase knowledge and prepare leaders in health care genetics who translate discoveries in genetic sciences to products, policies, and practices. A Professional Science Master’s Degree is an excellent option for professionals allowing them to pursue cutting-edge, relevant training and excellence in science without a Ph.D., while simultaneously developing highly-valued workplace skills.

Requirements.The successful graduate student will have established a three-faculty member Advisory Committee, completed a minimum of at least 33-credits and demonstrated passing performance on an exit examination. The typical plan of study includes 17 credits of conceptual coursework, eight credits of practical coursework (laboratory or research experience) and eight credits of professional master’s cohort courses, including an internship. Didactic, practical and professional cohort courses are selected from a menu of classes in consultation with the students’ academic advisor and advisory committee. The plan of study will be designed and individualized based on a student’s prior experience, career goals and those needed to gain mastery of the body of knowledge of the field. Coursework is selected to assure students can apply knowledge of genetic principles and genomic technologies to improve quality of health-care through the diagnosis, screening, intervention or prevention of disease and the maintenance of health. Laboratory training provides hands-on experience and case analyses in basic molecular biology techniques, chromosome testing, and next generation technologies. Skills development in scientific communication, ethical considerations, laboratory regulations, literature appraisal, and leadership assures graduates are effective, productive, and compassionate professionals. There is no specific required sequence of courses, unless a course has a specific pre-requisite course indicated in the course description. The Program may be completed on a part-time basis, does not include required summer components with the exception of directed study/internship that maybe scheduled during the summer months. The final requirement for the Professional Science Master’s Degree is passing performance on an exit exam, the format of which may include, but is not limited to, a written and/or oral scholarly piece of work. The exit exam timing and format are determined and designed by the Advisory Committee and internship supervisory personnel to reinforce the discipline-specific competency and provide an evaluation tool for relevant problem-solving abilities.

## Health Promotion Sciences (M.S., Ph.D.)

The Graduate Program in Allied Health (G.P.A.H.) offers two graduate degrees in health promotion sciences: Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) in Health Promotion Sciences. Graduates of our programs acquire the knowledge and skills to advance our understanding of the role of behavioral, social, and environmental influences in chronic diseases and conditions and to apply the principles and practices of health promotion, health equity, and health behavior change to create innovative solutions for current and emerging health challenges. The graduates of the M.S. program are employed in public health, community-based treatment and health care, worksite, and research settings. In addition, students can earn the M.S. as part of a 4+1 program in Dietetics that prepares students for the Commission on Dietetic Registration’s National Registration Examination. The graduates of the Ph.D. program are trained in more research-focused careers in academic settings but could also be leaders in a variety of professional settings, including industry, public health, work-site, and non-profit settings. The graduate programs offer students competitive graduate research and teaching assistantships, individualized programs of study, and opportunities for expanded roles in health promotion, health care, and research. Courses included on the approved program of study must achieve a grade of “B-” or higher. Students must maintain an overall grade point average (GPA) of 3.0 per term to be in good standing. In addition to the Graduate School requirements, the graduate programs in Health Promotion Sciences have the following requirements listed below.

### M.S. in Health Promotion Sciences

May be earned under either of two plans. Both meet the minimum requirement of 30 credits completed. Plan A (Thesis track) emphasizes research and requires at least 24 credits of advanced course work and completion of a master’s thesis. Plan B (Project and Practicum Track) requires a comprehensive understanding of the subject matter, at least 26 credits of advanced course work, and completion of a project and a practicum. Students in both plans work with their major advisor to assemble a graduate advisory committee and develop the plan of study and research agenda culminating in the writing and oral defense of a thesis (Plan A) or in the project/practicum (Plan B). Students must satisfy the University standards and degree requirements, and pass a comprehensive examination administered under the auspices of the advisory committee.

Requirements: A minimum of 30 credits in the following domains.

Health Promotion:AH 5319, 6305, and 6324, totaling nine credits.

Research:AH 5005, 6306, and one research-based elective with advisor approval; totaling nine credits.

**Elective Requirements:** Students complete 12 credits from Allied Health Sciences and other schools or colleges across campus chosen in consultation with the student’s advisory committee to develop depth in an area of health promotion sciences (e.g., statistical modeling/evidence-analysis, behavioral and environment change interventions, health equity, genetics and diagnostics).

### 4+1 FastTrack Dietetics B.S./Health Promotion Sciences M.S.

The FastTrack (4+1) B.S. in Dietetics and M.S. in Health Promotion Sciences is a program that is available for highly motivated UConn undergraduate students. The FastTrack allows students accepted into the Undergraduate Coordinated Dietetics Program in Allied Health Sciences at UConn to complete the baccalaureate degree in Dietetics, the Plan B M.S. degree in Health Promotion Sciences, and the hours of supervised practice approved by the Accreditation Council for Education in Nutrition and Dietetics (ACEND), all within five years plus an externship. When all requirements are successfully completed the student may sit for the Commission on Dietetics Registration National Registration Examination.

Students are accepted into the program as early as their 5th semester of undergraduate study based on their academic performance and the completion of prerequisite courses, as well as personal background and/or experiences revealing a commitment to dietetics and health promotion sciences.

**Requirements:** While fulfilling requirements of their B.S. degree, FastTrack students simultaneously complete a maximum of 12 credits of coursework toward the M.S. (AH 5005, 5351, 6305, 5319 or 6306) which may be applied to both undergraduate and graduate plans of study.

**Requirements for the 5th Year of Study:** AH 6324, 5335, 5314, 5317 for five credits, and three credits of a graduate level elective (which could include AH 5319 or 6306), and DIET 4315 and 4335.

### The following courses are required to meet ACEND requirements and be eligible to take the national dietetics registration exam, NOT for the M.S. degree: Spring semester: DIET 4435, 4455, 4470, and summer a non-degree externship DIET 4991. These courses must be completed with a grade of “C” or higher in the 5th year to meet ACEND accreditation standards. Grades below “C” in any course require a remediation plan approved by a student’s major advisor and Program Director. Ph.D. in Health Promotion Sciences

A four-year advanced, applied and research-oriented degree based on synergy between major areas - behavioral and environmental change interventions, diet and physical activity across the lifespan, genetics/diagnostics and statistical modeling sciences—to promote health, health equity, and prevent diseases in a variety of settings and for diverse individuals. Doctoral students normally enter in the fall semester.

Requirements: A minimum of 48 credits in the following domains.

Health Promotion Core: AH 6181, 6305, 6324, and two health promotion or health equity based electives with advisor approval; totaling 15 credits.

Methodology and Statistics: AH 5005, 6306, and one methodology based elective with advisor approval; totaling nine credits.

Cognate Courses Supportive of Knowledge/Skills and Dissertation Research: Elective courses from Allied Health Sciences and other schools or colleges across campus are selected to develop depth in an area of health promotion sciences related to the student’s dissertation research (e.g., statistical modeling/evidence-analysis, behavioral and environment change interventions, genetics and diagnostics), totaling nine credits.

Developing Research and Academic Teaching Skills and Competence: AH 6184, and 6422, totaling six credits.

The student and their doctoral committee jointly determine the specific program of doctoral study in health promotion science. This process allows for designing plans of study uniquely suited to each person’s particular needs and career goals.

Doctoral General Exam/Dissertation. The goal of the general examination is to assure that all students have acquired and can effectively communicate the breadth and depth of the field. The general examination contains a written component and oral examination of the written component as well as the dissertation proposal and oral defense of the dissertation proposal.

## Higher Education and Student Affairs (M.A.)

The Master of Arts in Higher Education and Student Affairs (HESA) is designed to prepare students for professional careers in higher education and student affairs positions. This full-time, two-year, cohort-based academic program combines traditional instruction with graduate assistantships and practica experiences. Students complete a total of 36 credit hours for the HESA degree program, which includes a variety of foundational and professional content courses as well as elective graduate courses offered throughout the university.

1st Semester Required Courses:EDLR 5102, 5105, 5122, 5092.

2nd Semester Required Courses:EDLR 5092, 5103, 5117.

3rd Semester Required Courses:EDLR 5092, 5107, 5119.

4th Semester Required Courses: EDLR 5118, 5126, one elective.

Students take three credits of electives and successfully complete and pass their comprehensive examination, which consists of an oral presentation.

## History (M.A., Ph.D.)

The University of Connecticut offers both the Master of Arts (M.A.) and the Doctor of Philosophy (Ph.D.) in History. Small seminars comprise the bulk of course work in both M.A. and Ph.D. programs to provide maximum interaction between faculty and students. Students may also design special courses with individual professors and take a limited number of advanced undergraduate courses.

### Master of Arts Requirements

The program is designed to give general training at the graduate level in preparation for doctoral study or work in schools, government service, law, or the private sector; it is broadly concerned with skills development (written and oral) and advanced learning. While the master’s program does prepare students for entry into the doctoral program, it is equally aimed at enhancing the skills and historical perspective of teachers, museum and archive professionals, editors, lawyers, journalists, and others in the public and private sectors. Upon admission to the program, the student is assigned a major advisor to chair an advisory committee. At least two associate advisors, chosen by the student, also serve on the committee. In consultation with this committee, the student plans a program that meets individual needs and satisfies the requirements of the Graduate School and the Department of History. This advisory committee will supervise the completion of either a thesis or a master’s examination, depending on the option chosen by the student. Students elect one of two programs in pursuing the Master’s degree. Both require a total of 30 credits.

Plan A: Thesis Plan Requirements. HIST 5101, 5102; 15 credits or more of additional course work; nine credits of Master’s Thesis Research (GRAD 5950 or 5960). Students may take up to six credits of 3000-4000 level course work, with special permission. Up to six credits of independent studies HIST 5199 may be taken. In exceptional circumstances, students may petition the Graduate Advisory Committee for permission for additional independent studies. In addition, students must complete and successfully defend a master’s thesis.

Plan B: Non-thesis Plan Requirements.HIST 5101, 5102 and 24 credits of additional coursework. Students may take up to six credits of 3000-4000 level course work, with special permission. Up to six credits of independent studies HIST 5199 may be taken. In exceptional circumstances, students may petition the Graduate Advisory Committee for permission for additional independent studies. In addition, students must successfully pass a master’s examination, usually in their fourth semester.

### Doctor of Philosophy Requirements

The objective of the Ph.D. in History program is primarily, though not exclusively, the training of academic scholars for college, university, and government service, with an additional focus on the practices of public history. Through a mixture of seminars, independent study, field examinations, language requirements, and a doctoral dissertation closely supervised by an advisor and faculty advisory committee, students develop the highest level of skills and command of information required for research scholarship and advanced teaching. Students will choose to focus their doctoral studies in a particular field, such as Medieval European, Early Modern and Modern European, United States, Latin American, Asian, or African history. Supporting work in other disciplines is recommended.

In order to develop teaching skills beyond the level of seminar presentations and oral examinations, Ph.D. students normally work as supervised teaching assistants and/or lecturers for several semesters. There are ongoing workshops on pedagogical techniques for all graduate assistants, and a highly recommended seminar on teaching history at the university level, HIST 5103, taken towards the end of coursework. By the time a student completes a Ph.D., they will normally have presented papers at scholarly meetings, written grant applications, submitted articles for publication, and engaged actively in teaching. Upon admission to the program, the student is assigned a major advisor to chair an advisory committee. At least two associate advisors, chosen by the student, also serve on the committee. In consultation with this committee, the student plans a program that meets individual needs and satisfies the requirements of the Graduate School and the Department of History. The major advisor who counsels the student through the general examination process ordinarily, but not necessarily, becomes the dissertation advisor. The amount of coursework required for the doctorate depends on whether students completed their M.A. at the University of Connecticut or another institution.

Doctor of Philosophy Course Requirements:HIST 5101, 5102; 30 credits of additional coursework or 18 credits of additional coursework if the student enters the doctoral program holding a M.A. from another university. Doctoral students who have received a M.A. from the History Department at the University of Connecticut must complete a minimum of 15 credits of coursework. Students may take up to six credits of graduate courses offered by other departments. In exceptional circumstances, students may petition the Graduate Affairs Committee for permission for additional studies outside the department. Up to six credits of independent studies HIST 5199 may be taken. In exceptional circumstances, students may petition the Graduate Affairs Committee for permission for additional independent studies. Up to six credits of 3000-4000 level coursework may also be taken with special permission.

Foreign Language Requirement.All students must satisfy the foreign language requirement prior to passing the general examination. The specific language(s) in which each student is to establish reading competency are to be determined in consultation with the student’s advisor.

General Examinations.The Ph.D. general examinations are intended to assess the development of doctoral students into professional historians who are familiar with the knowledge, literature, interpretations, and theories of their fields, and who demonstrate the substantive knowledge and analytic skills necessary for teaching at the college level and for conducting original research and scholarly analysis.

Three fields will be examined jointly in an oral examination. The fourth field consists of the dissertation prospectus. Students may not take the examination until all previous courses have been successfully completed, and all language requirements fulfilled. In recognition of the importance of students being in regular contact with their examiners while preparing for the examination, students should register for directed readings courses with committee members during the semester prior to the examination. Full-time students should complete the oral examination covering the first three fields no later than February 15th of the year following the completion of regular course work. (Part-time students should consult the Graduate Director concerning appropriate deadlines). If after the oral examination the student is judged by the committee to have failed in only one field, final judgment will be reserved, and the student must take an additional one-hour oral examination in that field by May 15th of the same academic year. If the student is judged to have failed the field a second time, or if the student fails more than one field initially, the student will not be continued in the program. If a student departing the program under these circumstances has not already earned the M.A., it may be conferred as a terminal degree.

The fourth field of the general examination is the dissertation prospectus. A completed prospectus should be submitted to the three core dissertation committee members within six months, and preferably sooner, of the successful completion of the oral examination. At the latest, the deadline for approval of the prospectus may be extended to August 15th of the year following the completion of regular coursework.

Dissertation Research.All doctoral students must enroll for at least 15 credits of GRAD 6950 (Dissertation Research) or GRAD 6960 (Full-Time Doctoral Dissertation Research) in the semesters after completion of regular coursework.

Residence Requirement.The doctoral student must complete a minimum of one year of full-time study in residence beyond the master’s degree, which consists of two consecutive semesters of a full-time graduate program at the Storrs campus. A graduate assistant, whose academic program normally proceeds at half the rate of the full-time student, ordinarily fulfills this residence requirement with two years of such service. (This requirement does not mean the student must live on or near campus for their year of full-time study).

Dissertation and Final Oral Examination. A dissertation that makes a significant contribution to the candidate’s field of specialization is a primary requirement for the doctorate. The final oral examination (dissertation defense) of approximately one to one-and-a half hours focuses on the dissertation.

## Human Development and Family Sciences (M.A., Ph.D.)

The Department of Human Development and Family Sciences (HDFS) offers two graduate degrees: Master of Arts (M.A.) and Doctor of Philosophy (Ph.D.). The M.A. degree is a coursework-based degree (Plan B) or a research-based degree (Plan A) depending on student’s goals. Master-level students who plan to pursue a Ph.D. should follow the research-based degree Plan of Study. The M.A. degree prepares students to work in non-profit organizations, foundations, state, local, or federal government, hospitals, and private corporations. The Ph.D. prepares students for research and teaching careers in human development, family sciences, and related fields such as psychology, education, sociology, anthropology, and social work or in leadership positions with non-profit organizations, private foundations, and local, state, or federal government agencies. The M.A. and Ph.D. degrees offer students the opportunity to focus on one of the following areas: Couple Relationships, Gerontology, Parenthood and Parent-Child Relationships, Health and Well Being, Prevention and Early Intervention.

Master of Arts Requirements

Satisfactory completion of at least 30 credits maintaining a “B” average throughout the course of study.

Master of Arts Required Courses: HDFS 5001, 5003, 5215, 5310, 5005; EPSY 5605; one human development course HDFS 5101, 5102, or 5103; or one course in adulthood or aging HDFS 5240, 5242, or 5248. In addition, all M.A. students must organize a practicum experience in collaboration with a research project or service agency and their Major Advisor or an appropriate other faculty member; enroll in HDFS 5030 or 5088, and complete additional HDFS courses in their areas of specialization. Courses for areas of specialization can be fulfilled with HDFS courses or any related discipline area approved by the advisory committee. All students must pass a final oral examination for both Plan A and Plan B.

Doctor of Philosophy Required Core Courses:Students are required to satisfactorily complete 19 total credits of HDFS 5001, 5215, 5310, 5311, 5340; one course in child or adolescent development HDFS 5101, 5102, or 5103; one course in adulthood or aging HDFS 5240, 5242, or 5248.

Methodology Courses:12-15 credits selected fromHDFS 5003, 5004, 5005; EPSY 5605, 5607, or appropriate advanced research courses with focus on quantitative or qualitative methods (with approval of advisory committee).

Area of Specialization or Thematic Courses:21-24 creditscan be fulfilled with HDFS courses or any related discipline area approved by advisory committee. This requirement can include practicum Experiences and/or Apprenticeships listed below; and 15 Graduate Dissertation credits (GRAD 6950).

Practicum Experiences/Apprenticeships: Credits determined by advisory committee; approximately three to six credits.This requirement includes some combination of teaching, applied research/policy, service/outreach, and basic research apprenticeships as appropriate for the student’s plan of study HDFS 5010, 5030, 5088, 5099.

Comprehensive Examination. Ph.D. Students are required to complete a Comprehensive Examination, which consists of a comprehensive, critical review of the literature in a substantive area of the student’s scholarly area of interest.

The Ph.D. does not have a related area or foreign language requirement.

## Human Resource Management (M.S.)

The Master of Science in Human Resource Management (MSHRM) is designed to build the skills needed for Human Resource leaders. This part-time program is offered in a distinctive format that combines the best of on-campus and online learning enabling students to focus on one course at a time and complete the degree in 22 months. Students must complete 33 credits to fulfill all degree requirements; 27 of these credits are required core courses and six credits are electives. The program is designated as a preferred provider by the Society of Human Resource Managers.

Required Courses:MENT 5377, 5401, 5639, 5650, 5675, 5676, 5680, 5681, and 5805, totaling 27 credits.

Elective Courses: Six additional credits offered by the School of Business at the graduate level (i.e., course numbers of 5000 or higher in ACCT, BADM, FNCE, MENT, MKTG, or OPIM).

## Human Rights (M.A.)

The Human Rights Institute offers a Master of Arts (M.A.) in Human Rights. The Master’s Degree in Human Rights is designed to advance participants’ knowledge of human rights as both an academic and professional field, hone students’ critical inquiry skills, and ultimately enable students to develop as competitive candidates for professional positions in industry, government, education, and non-profit sectors. The Master’s Degree in Human Rights requires the completion of 30 credit hours of graduate coursework, up to 12 of which can be earned during the student’s senior year. Up to 12 credits of approved graduate coursework included on the student’s undergraduate plan of study can also be used toward both the B.A. and M.A. plans of study. The required 30 credit hours include 12 Common Core credits and a required three-credit practicum (200 hours), at least six Foundational Elective credits, and nine additional elective credits drawn from either the Foundational Elective or Supplementary Elective lists. Other elective options may be approved by the Graduate Education Director after consultation with the Graduate Education Committee.

**Common Core Courses:** HRTS 5282, 5301, 5351\*, 5401, and 5600.

**Foundational Electives:** EDCI 5847; HRTS 5055, 5095\*, 5351\*, 5428, 5450, 5460, 5499, and 5899\*; HRTS/HIST 5270; HRTS 5390/ECON 5128/POLS 5390; LAW 7878; SWEL 5385.

**Supplementary Electives:** ALDS/GERM/CLCS 5324, 5325; ANTH 5325; ENGL 6540; HRTS/ANTH 5327; LAW 7380, 7653, 7695, 7814, 7876, 7883, 7914; POLS 5115, 5322; PUBH 5460/LAW 7592; SOCI/HRTS 5825; SOCI 5515.

*\*May be repeated for a total of nine credits with a change in subject matter.*

## Intersectional Indigeneity, Race, Ethnicity, and Politics (M.A.)

The Master of Arts (M.A.) in Intersectional Indigeneity, Race, Ethnicity, and Politics (IIREP M.A.) seeks to offer interested students, especially UConn undergraduates seeking a 4+1 or 3+1 B.A./M.A. and working public sector professionals seeking an independent M.A., opportunities to learn how critically to explore the relationships among indigeneity, race, ethnicity, and politics in ways that can inform their work and practice.

The IIREP M.A. Plan of Study requires a minimum of 30 credits, including POLS/ANTH/LLAS 5800; POLS 5000, 5605, 5615, 5625, and the one-semester POLS 5620 Master's Project course. In POLS 5000, students must conduct independent research related to IIREP under the supervision of their major advisor. In addition, students must take four elective three-credit 5000/6000-level courses with significant IIREP content. At least two, but no more than three, of the IIREP electives must be taken in POLS. At least one of the four elective courses must have a U.S. focus while at least one must be global in scope.

In each year that they are enrolled, students in the IIREP M.A. must participate in one reading group session in which core IIREP faculty, all enrolled IIREP Graduate Certificate, and all IIREP M.A. students read and discuss one non-course book of relevance to IIREP. IIREP M.A. students must also participate in either one UConn-based graduate student conference or one state, regional, or national conference, sharing research undertaken in their Master’s Project course.

## Integrative Studies (Ph.D.)

The Graduate School offers Ph.D. students whose dissertation research integrates two or more distinct fields of study the opportunity to earn a Ph.D. in Integrative Studies. The program is intended for students who have already enrolled in a Ph.D. program at the University of Connecticut, and it is aimed at students whose research interests cannot be accommodated within an existing field of study. The Ph.D. in Integrative Studies will allow students to acquire and demonstrate a large degree of disciplinary skills across fields that may not often intersect. Students considering a Ph.D. in Integrative Studies should be aware, however, that this degree may not allow them to qualify for employment in positions that require advanced degrees in a specific discipline.

### Requirements for the Ph.D. in Integrative Studies

Specific course requirements for the individualized Ph.D. in Integrative Studies are determined by the student’s Advisory Committee. Students without a master’s degree must complete a minimum of 36 credits of graduate-level coursework. Students with a master’s degree must complete a minimum of 21 credits of graduate-level coursework. This coursework must include at least six credits of graduate-level coursework from each of two different departments. In addition, all students must complete at least 15 credits of GRAD 6950 or 6960. Students are required to have a minimum GPA of 3.5 to be admitted and to maintain a 3.5 GPA to remain in good standing. The individualized Ph.D. in Integrative Studies does not have a related area or foreign language requirement, unless one is specified by the Advisory Committee.

## Kinesiology (M.S., Ph.D.)

The Department of Kinesiology offers a Master of Science (M.S.) and a Doctor of Philosophy (Ph.D.) in Kinesiology with a concentration in Exercise Science, as well as a M.S. in Athletic Training and a Doctor of Physical Therapy (D.P.T.). The M.S. is a research-based master’s degree aimed at students pursuing careers in exercise and sport science, clinical exercise physiology, or, with additional training, academia and research. The Ph.D. prepares students for research and teaching careers in exercise science, including research and leadership positions with academic, corporate, community and government organizations.

Requirements: These academic degree programs follow the Graduate School requirements outlined in the Academic Regulations section of this catalog for completion of M.S. and Ph.D. degrees. The Master of Science is a thesis degree program.

## Latina/o and Latin American Studies (M.A.)

*Formerly offered as International Studies*

The Master of Arts (M.A.) in Latina/o and Latin American studies is administered by El Instituto. In this program, students engage in interdisciplinary study and research related to Latina/o, Caribbean, and Latin American studies and can focus their work in one of three broad areas: U.S. Latina/o Studies, Latin American and Caribbean Studies, and Comparative Transnational Latin(o) American Studies. The core faculty in the program hold joint appointments between El Instituto and seven other academic departments. El Instituto is also supported by over 70 affiliated research faculty and scholars across disciplines and departments throughout the university. El Instituto’s courses and faculty examine a wide array of local, hemispheric, and global dimensions of the Latina/o, Caribbean, and/or Latin American condition. Graduates go on to work in education, administration, cultural, business, government, and not-for-profit organizations. Many go on to pursue a Ph.D. and other advanced degrees.

Requirements:At least 30 credits maintaining at least a “B” average. The required courses for the M.A. degree are LLAS 5000, 5100, and 5890 (Thesis Writing, last semester of study). Another course in methodology might be substituted for either LLAS 5000 or 5100 if necessary, with the approval of El Instituto’s Director or Associate Director. Students are required to focus their studies in a core discipline (e.g. Anthropology, Economics, Sociology, Spanish) and take at least one methodology course in that discipline. They must also take courses in two additional disciplines. Students will prepare an M.A. paper or comparable project during their final semester with guidance from a faculty advisor of their choosing. Students must complete all requirements for the M.A. degree and must demonstrate proficiency sufficient to participate in scholarly conversations and research in one language of the region related to their program of study (other than English).

## Learning, Leadership and Education Policy (Ph.D.)

The Learning, Leadership, and Education Policy Doctor of Philosophy (Ph.D.) program offers four concentrations: Adult Learning, Higher Education Racial Justice and Decolonization, Leadership and Education Policy, and Sport Management. These four concentration areas provide Ph.D. students with the opportunity to link their professional and academic goals to scholarship, faculty resources, and curriculum that are designed to meet their interests in adult learning, educational leadership, education policy, higher education, and sport management. With one concentration primarily focusing on learning theory, one on theories of policy and leadership, one on higher education racial justice and decolonization theories, and one on management theories, students can maintain distinct academic identities while simultaneously applying lenses of social justice and organizational change to their work in and with complex organizations. The Ph.D. program is foremost a research degree designed for those who aspire to conduct and critically apply research in their careers. Students pursuing this degree take on roles as faculty members, researchers, government employees, policy scholars, or organizational leaders. The Ph.D. in Learning, Leadership and Education Policy does not have a related area or foreign language requirement.

Adult Learning Requirements.The Adult Learning Concentration Plan of Study includes 15 credits of core coursework, 12 or more credits in area of concentration and electives, nine or more credits in research design and methods, 15 credits of Doctoral Dissertation credits, completion of general examinations, completion of a successful defense of the dissertation proposal, and successful dissertation defense.

**Higher Education Racial Justice and Decolonization Requirements.** TheHigher Education Racial Justice and Decolonization Concentration Plan of Study includes 15 credits of core coursework, 12 or more credits in area of concentration and electives, nine or more credits in research design and methods, 15 credits of Doctoral Dissertation credits, completion of general examinations, completion of a successful defense of the dissertation proposal, and successful dissertation defense.

Leadership and Education Policy Requirements. The Leadership and Education Policy concentration Plan of Study includes 15 credits of core coursework, 12 or more credits in the concentration, nine or more credits in research design and methods, 15 credits of Doctoral Dissertation preparation credits, completion of a comprehensive examination, completion of a successful defense of the dissertation proposal, and successful dissertation defense.

Sport Management Requirements. The Sport Management concentration Plan of Study includes 15 credits of core coursework, nine credits in the concentration, nine or more credits in research design and methods, nine or more credits in a cognate area, 15 credits of Doctoral Dissertation preparation credits, completion of general examinations, completion of a successful defense of the dissertation proposal, and successful dissertation defense.

## Linguistics (M.A., Ph.D.)

The Department of Linguistics offers the graduate degree of Doctor of Philosophy (Ph.D.). The Ph.D. program in linguistics involves coursework and independent research in a wide variety of areas of generative linguistics, including theoretical and experimental approaches. The aim of the program is to prepare students for all aspects of an internationally successful academic career. The Ph.D. program is strongly oriented towards academic careers, but may also provide an excellent background for non-academic, language-related careers. Although the Department of Linguistics only admits graduate students into the Ph.D. program, a Master of Arts degree can be awarded to students in the Ph.D. program when the requirements have been met (see M.A. requirements below).

### Doctor of Philosophy Requirements

The Ph.D. program in Linguistics conforms to the Graduate School requirements as outlined in the Academic Regulations section of this catalog. Specific course requirements for the Ph.D. in Linguistics are determined by the student’s advisory committee consistent with the minimum requirements specified by the Graduate School. The program is designed to be completed in five years. Due to course sequencing, students are normally only admitted for the Fall semester. The Ph.D. in Linguistics does not have a related area or foreign language requirement. The specific requirements for obtaining a Ph.D. in Linguistics are listed below.

Required Courses. Students must complete a total of 40 credits in accordance with a plan of study approved by their advisory committee.

General Examination. Students satisfy the general examination requirement by completing two research papers of publishable quality, each building on a proposal that has been approved by the faculty of the Department of Linguistics. The student is examined on the content of each completed paper.

Dissertation Proposal. Students must submit a dissertation proposal in accordance with the rules specified in the Graduate Catalog.

Doctoral Dissertation. Students must complete a doctoral dissertation and defend it in the course of a public oral examination.

### Master of Arts Requirements

An M.A. degree can be awarded after the completion of 30 credits of coursework on an approved plan of study in connection with the Thesis or Non-Thesis plan as outlined in the Academic Regulations section of this catalog.

## Literatures, Cultures, and Languages (M.A., Ph.D.)

The Department of Literatures, Cultures, and Languages offers two programs at the graduate level. The Master of Arts (M.A.) and Doctor of Philosophy (Ph.D.) programs. Both the M.A. and the Ph.D. programs offer seven areas of concentration: Applied Linguistics and Discourse Studies, Comparative Literary and Cultural Studies, French and Francophone Studies, German Studies, Hebrew and Judaic Studies, Italian Literary and Cultural Studies, and Spanish Studies. The M.A. program prepares students for doctoral work in Literatures, Cultures, and Languages, and equips them to teach a range of languages and cultures in private and public schools. The Ph.D. program prepares students for college-level teaching and academic work in a number of fields within Literatures, Cultures, and Languages, as well as for a wide array of professional careers beyond the traditional academic pathway.

### **Master of Arts Requirements**

Students must complete CLCS 5302 and LCL 5030, and earn a minimum of 30 credits above the B.A. Additionally, students should pass an M.A. examination or write a Master’s thesis depending on the requirements of each specific area of concentration and whether the student is applying to continue in the Ph.D. program or receiving the M.A. as a terminal degree.

### Doctor of Philosophy

First-year students in the Ph.D. program will have an assigned temporary advisor in their specific area of concentration. A definitive major advisor according to the student’s area of specialization has to be chosen by the end of the first year in the Ph.D. program. The major advisor and the student will choose two associate members for the dissertation committee. Every plan of study is individually structured by a committee chosen by the student in consultation with their main advisor.

Doctor of Philosophy Requirements. At least 24 credits in coursework and a minimum of 12 credits in the chosen area of concentration; second language teaching methods course (not necessary if taken at the M.A. level); literary theory course (not necessary if taken at the M.A. level); research methodologies and professionalization course LCL 6030; successful completion of the Ph.D. comprehensive examinations; successful completion and approval of a dissertation prospectus; successful defense of a dissertation; and competence in reading scholarly material in one language besides English and the language connected to the area of concentration.

Students who are accepted in the Ph.D. program with an M.A. from another university will need advisory committee approval of satisfaction of equivalents for Literary Theory (CLCS 5302) and Methods and Approaches to Second Language Acquisition (LCL 5030). If Ph.D. students with external M.A. degrees receive a grade of “B+” or lower during their first semester, they are required to take a Qualifying Examination (QE), which will be administered by a committee chosen by the Ph.D. and M.A. advisors during the second semester. The QE will test aptitude for literary and cultural criticism and general knowledge in the chosen field of concentration. Students who do not pass the QE on their first attempt will not be allowed to continue in the program beyond the first year.

## Materials Science (M.S., Ph.D.)

*Jointly offered by the College of Agriculture, Health, and Natural Resources, College of Liberal Arts and Sciences, College of Engineering, School of Pharmacy, and UConn Health.*

The Institute of Materials Science offers programs leading to Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees in the area of Material Science. All programs include training in synthesis, characterization, and applications of materials, and give students sufficient flexibility to pursue their special interests as well as time to take courses in other departments at the University of Connecticut.

Master of Science in Materials Science

The program normally requires 30 credits. While it is possible to complete the M.S. degree within a year, most students will need three to four semesters. The courses of the program cover synthesis, characterization, and applications of materials. The plan of study for the M.S. degree may be formulated with related work in almost any area, e.g., Biology, Chemistry, Physics, Economics, Business, Biomedical Engineering, Chemical Engineering, Mechanical Engineering, Civil Engineering, Electrical engineering, and Materials Science and Engineering. Students are encouraged to participate in research projects done by members of the department.

Requirements: There are no specific required courses. All students must choose a committee for the M.S. degree and that committee must approve all courses. Typical courses are any of the 5000-level courses in Biology, Chemistry, Physics, Economics, Business, Biomedical Engineering, Chemical Engineering, Mechanical Engineering, Civil Engineering, Electrical Engineering, and Materials Science and Engineering. The final requirement is passing the Master’s Exam which has two parts. One is a written test concerning basic understanding of course materials. The second requirement is a final oral exam which includes course work, and any research done by the student. For a course work master’s degree there is no thesis requirement. For a research based Master’s degree, there is a requirement of a Master’s thesis. All students are encouraged to follow the research degree route.

In order to be considered for a possible switch to the Ph.D. program or for financial support, a student with an M.S. degree in Materials Science or someone showing great promise during the M.S. program needs to apply to the Ph.D. Program.

### Ph.D. Program

Emphasizes development of the ability to generate novel research results in Materials Science. Individuals with a Bachelor’s degree in any major, with an interest in Materials Science are encouraged to apply. The course work typically consists of a minimum of 30 credits that cover a wide range of topics, including Biology, Chemistry, Physics, Economics, Business, Biomedical Engineering, Chemical Engineering, Mechanical Engineering, Civil Engineering, Electrical Engineering, and Materials Science and Engineering. After completing the necessary course work and a sequence of examinations, a Ph.D. candidate must complete a dissertation that makes an original contribution to the field of Materials Science.

Requirements: The Ph.D. in Materials Science requires a minimum of 30 credits of content coursework beyond the baccalaureate or at least 15 credits of content coursework beyond the master’s degree. An individual plan of study is developed by the student and their Advisory Committee. Courses in the following departments are considered: Biology, Chemistry, Physics, Economics, Business, Biomedical Engineering, Chemical Engineering, Mechanical Engineering, Civil Engineering, Electrical Engineering, and Materials Science and Engineering.

In general, Ph.D. students must take graduate level courses that are approved by the major advisor of a student, as well as the student’s advisory committee. The materials science program has no requirement on foreign languages.

The first formal requirement for the Ph.D. degree is passing the General Examination. The general examination consists of a written exam that is an original proposal. If the student passes the written exam, they are then asked to prepare for an oral examination. The oral exam consists of any aspect of course work, the written exam, the proposal, research progress, or combinations of these. The preparation of a dissertation then follows, where the student must present an original contribution to the general area of Material Science. The final requirement is a defense of the Ph.D. dissertation before the Ph.D. Advisory Committee, students and anyone else interested in attending. The exam consists of a presentation by the student, questions of the students and audience, and then a closed session of questions from the Advisory Committee.

## Materials Science and Engineering (M.S., Ph.D.)

The goal of the graduate program in Materials Science and Engineering (MSE), through its coursework and research programs, is to provide students with a comprehensive understanding of modern materials and to prepare them for positions of leadership in engineering, research and development. Graduate instruction is offered which leads to the degrees of Master of Science (M.S.) and Doctor of Philosophy (Ph.D.). Emphasis is placed on the relationships between structure, properties, processing, and performance of materials. In addition, several departments in the University offer relevant courses in related disciplines; students are encouraged to include one or more of these courses in their plan of study. Any courses at the 3000 or 4000 level must be approved in advance by the Major Advisor; not more than six such credits may be accepted towards a Masters or Ph.D. degree.

M.S. Requirements

Students may pursue either a Plan A (thesis-based) or a Plan B (coursework-based) M.S. degree. For both Plan A and Plan B, students are required to complete all of the MSE graduate core courses (MSE 5301, 5309, and 5334).

For Plan A, the student must successfully complete at least 21 credits of coursework (including the core courses), maintaining a cumulative GPA of 3.0 or above. At least 12 of these credits must be MSE courses, with the remainder approved by the Major Advisor. The student must also complete at least nine credits of GRAD 5950, ultimately preparing and publicly defending the M.S. thesis.

For Plan B, the student must successfully complete at least 30 credits of coursework (including the core courses), maintaining a cumulative GPA of 3.0 or above. At least 18 of these credits must be MSE courses, with the remainder approved by the Major Advisor. The 30 credits must also include three credits of independent study in MSE culminating in a final project, and the student must pass a comprehensive oral examination conducted by the advisory committee based on this project.

Ph.D. Requirements

Students are required to complete all of the MSE graduate core courses (MSE 5301, 5309, and 5334), and maintain a cumulative GPA of at least 3.0 in these courses. Suitable courses may be substituted for core courses if equivalent topical competency can be demonstrated. The Ph.D. in Materials Science and Engineering does not have a related area or foreign language requirement.

Ph.D. students must also maintain a cumulative GPA of at least 3.0 for a minimum of 30 overall course credits, including the core courses. A maximum of 12 credits may be taken in fields of study other than MSE with Major Advisor approval. For those already entering with a master’s degree in the same or a closely related field of study, a minimum of 15-credits of content coursework are required with a maximum of six credits in a related field.

All Ph.D. students must also complete at least 15 credits of GRAD 6950, for a total number of credits not less than 45, 30 if matriculating with a related master’s degree. All resident full-time MSE Ph.D. students must enroll in the one credit seminar course, MSE 6401, every term, and all Ph.D. students must pass a Qualifying Examination administered by the MSE graduate faculty.

Ph.D. candidates must prepare and orally defend a dissertation proposal. At this oral defense, the students must also complete the General Examination covering broader aspects of materials science and engineering. Ultimately, the candidate must prepare and publicly defend the Ph.D. dissertation. The dissertation research must be deemed by the Examination Committee as publishable in a refereed journal in the field.

## Mathematics (M.S., Ph.D.)

The Department of Mathematics offers two degrees in Mathematics, Master of Science (M.S.) and Doctor of Philosophy (Ph.D.). The M.S. degree can be pursued with a concentration in Actuarial Science. The M.S. degree provides general training in mathematics suitable as preparation for a Ph.D. program or for a career in education or industry. The M.S. degree with concentration in Actuarial Science is more narrowly focused to prepare students for careers as practicing actuaries in the insurance, pension, financial or consulting industries. The specific requirements, in addition to the Graduate School requirements, for each degree and concentration are listed below.

### Master of Science

Non-thesis students must either pass two written preliminary examinations at the level of a master’s from a list of examination topics approved by the department, or pass an oral examination. Thesis M.S. students may choose the thesis option and write a master’s thesis under the direction of a member of the Graduate Faculty in Mathematics.

Master of Science with concentration in Actuarial Science. Students must pass at least five core courses from among MATH 5620, 5630, 5631, 5637, 5638, 5639, 5640, 5641, 5650, 5660 and 5661. The remaining coursework must come from a list of elective courses approved by the department. In addition, the student must either pass two written preliminary examinations at the level of a master’s from a list of examination topics approved by the department or pass two actuarial examinations given by the Society of Actuaries or the Casualty Actuarial Society. The actuarial examinations may be passed prior to admission.

### Doctor of Philosophy

In addition to the Graduate School requirements (including the foreign language or related area requirement), the Ph.D. requires that the student pass three preliminary examinations at the Ph.D. level from a list of examination topics approved by the department. A student typically takes the associated preliminary course before the examination, but this is not required. In addition, the student must pass two core courses with a grade of “B” or better. The chosen core courses must be different from the graduate courses associated with the three preliminary examinations passed by the student. The list of core courses depends on the student’s research focus: for a pure math focus, MATH 5111, 5120, 5160, 5210, 5211, 5260, 5310 and 5360; for an applied math focus MATH 5111, 5120, 5160, 5310, 5410, 5440, 5510 and 5520; for an actuarial science focus, MATH 5111, 5120, 5161, 5210, 5211, 5310, 5360, 5410, 5440, 5510 and 5520. Students do not need to satisfy the Graduate School foreign language/related area requirement.

## Mechanical Engineering (M.S. and Ph.D.)

The School of Mechanical, Aerospace and Manufacturing Engineering offers degree programs leading to Master of Science (M.S.), and Doctor of Philosophy (Ph.D.) degrees. Students in the M.S. and Ph.D. programs may elect to complete their degree with a concentration in Systems and Mechanics or Thermal and Fluid Sciences.

**Concentration Requirements:**

**Systems and Mechanics:** ME 5105, 5150, 5155, 5160, 5180, 5190, and 5420.

**Thermal and Fluid Sciences:** ME 5110, 5120, 5130, 5140, 5311, and 6170.

### M.S. in Mechanical Engineering

The M.S. degree may be earned under either Plan A (thesis option) or Plan B (non-thesis option). Plan A emphasizes problem-solving through research, and involves close interactions with mechanical engineering faculty members, while Plan B focuses on graduate-level coursework in mechanical engineering topics. The plan of study must be approved by the advisory committee, the Director of Graduate Studies, and the Executive Committee of the Graduate Council. Students in either plan may take the courses specified above to graduate with a concentration in Systems and Mechanics or Thermal and Fluid Sciences.

**M.S. Plan A Requirements (30 credits):** 21 credits of coursework, nine credits of GRAD 5950, ME 6340 (two semesters, 0 credits), and successful completion of a Master’s thesis, with an oral defense. ME 5507 (or a similar course in mathematics, computer science, engineering analysis, or statistics, approved by the advisory committee) is required. At least 18 of the coursework credits must be in Mechanical Engineering courses (including ME 5507 if taken). A maximum of nine credits of independent study may count toward course requirements and only six credits can be taken with the student’s major advisor as the instructor. The student’s advisory committee must approve any additional courses beyond the required number of credits and any transfer credits that must be replaced with other UConn ME courses. With approval from the student’s advisory committee, at most three credits of non-SEMS (science, engineering, mathematics, or statistics) courses and at most three credits of 3000/4000-level courses can be taken. Courses specific to the Master of Engineering (MENG) program, including ENGR 5311, 5312, and 5314, may not be used toward the M.S. degree.

**M.S. Plan B Requirements (30 credits):** 30 credits of coursework, ME 6340 (two semesters, 0 credits), and successful completion of a final examination. ME 5507 (or a similar course in mathematics, computer science, engineering analysis, or statistics, approved by the advisory committee) is required. At least 24 of the coursework credits must be in Mechanical Engineering courses. The final examination must be taken after the completion of at least 24 credits. A maximum of six credits of independent study may count toward course requirements. The student’s advisory committee must approve any additional courses beyond the required number of credits and any transfer credits that must be replaced with other UConn ME courses. With approval from the student’s advisory committee, at most three credits of non-SEMS (science, engineering, mathematics, or statistics) courses and at most three credits of 3000/4000-level courses can be taken. Courses specific to the Master of Engineering (MENG) program, including ENGR 5311, 5312, and 5314, may not be used toward the M.S. degree.

### Ph.D. Degree Requirements

The Ph.D. is primarily a research degree and may be undertaken after the M.S. or following the B.S. Transfer credits (maximum six credits or two classes) and undergraduate credits (maximum three credits of University of Connecticut 3000-4000-level courses not used on the undergraduate degree plan of study and not open to sophomores) may be used on a Ph.D. plan of study if approved by the advisory committee, the Director of Graduate Studies, and the Executive Committee of the Graduate Council. The Ph.D. in Mechanical Engineering does not have a related area or foreign language requirement.

**For Students Holders of M.S. Degree**

**Requirements:** Minimum of 15 credit hours of content coursework, of which at least nine credits must be in ME courses, and an additional 15 credits of GRAD 6950.

* ME 5507 (or a similar course in mathematics, computer science, engineering analysis, or statistics, approved by the advisory committee; waived if taken while an M.S. student at UConn)
* At most three credits in non-SEMS programs, which must be approved in advance by the student’s advisory committee, can be taken to satisfy minimum coursework requirements.
* ME 6340 for at least three semesters enrolled in the Ph.D. program as a full-time student (part-time students must have attended and passed the ME 6340 course for a minimum of two semesters during their one-year residency period).
* Subject to advance approval by the student’s major advisor, a student may take SEMS courses beyond the required minimum coursework credits. Non-SEMS courses beyond minimum coursework requirements must be approved in advance by the student’s advisory.
* Courses specific to the Master of Engineering (MENG) program, including ENGR 5311, 5312, and 5314, may not be used toward the Ph.D. degree.
* At most two independent study courses can be applied toward coursework requirements and only one independent study course can be taken with the student’s major advisor as the instructor.
* See additional requirements for all Ph.D. students.

**For Students Holders of B.S. Degree**

**Requirements:** Minimum of 30 credit hours of content coursework, of which at least 21 credits must be in ME courses, and an additional 15 credits of GRAD 6950.

* ME 5507 (or a similar course in mathematics, computer science, engineering analysis or statistics, approved by the advisory committee)
* Three additional graduate-level credits of a mathematics, computer science, engineering analysis or statistics course
* ME 6340 Graduate Seminar for at least four semesters enrolled in the Ph.D. program as a full-time student (part-time students must have attended and passed the ME 6340 course for a minimum of two semesters during their one-year residency period).
* At most 6 credits in non-SEMS programs, which must be approved in advance by the student’s advisory committee, can be taken to satisfy minimum coursework requirements.
* Subject to advance approval by the student’s major advisor, a student may take SEMS courses beyond the required minimum coursework credits. Non-SEMS courses beyond minimum coursework requirements must be approved in advance by the student’s advisory.
* Courses that are specific to the Master of Engineering (MENG) program, including ENGR 5311, 5312, and 5314, may not be used toward the Ph.D. degree.
* At most two independent study courses can be applied toward coursework requirements and only one independent study course can be taken with the student’s major advisor as the instructor.
* See additional requirements for all Ph.D. students.

**Requirements For All Ph.D. Students:**

**Qualifying Exams:** The Mechanical Engineering Ph.D. general (also called qualifying) examination consists of an oral presentation and examination to the student’s Ph.D. advisory committee. The student must take the Ph.D. general examination for the first time during or immediately after their second semester of working under the supervision of their ME major advisor within the Ph.D. program at the University of Connecticut. In the event of an unsuccessful first attempt, the student must re-take the examination during or immediately after the following semester.

**Dissertation:** The most important part of the study for the Ph.D. degree is the dissertation. A dissertation must be an original and significant contribution to the field of engineering science. Before the Ph.D. dissertation is well underway, the student must file a prospectus (also known as dissertation proposal) of the proposed research. The student’s advisory committee and the Mechanical Engineering Director of Graduate Studies must approve the prospectus. The dissertation must be defended orally and made available to the advisory committee at least two weeks prior to the final examination.

The final examination, an oral examination often called the dissertation defense, deals mainly with the subject matter of the dissertation. At least five members of the faculty including all members of the advisory committee must be present for the final examination. The dissertation defense is open to the public. The decision as to whether the student passes the examination is based on a vote of the advisory committee.

**Minimum research publications:** The student must have submitted a minimum of two papers for publication in the archival literature (journals) and have at least one of these papers published or accepted for publication at the time of the Ph.D. defense. These papers must be based on the student’s dissertation research and must be co-authored by the student’s faculty advisor from the Mechanical Engineering Department.

## School of Mechanical, Aerospace and Manufacturing Engineering Medieval Studies (M.A., Ph.D.)

The Medieval Studies Program offers two graduate degrees: Master of Arts degree (M.A.), and Doctor of Philosophy (Ph.D.). The M.A. program provides preparatory training for a Ph.D. in a medieval field. Generally our M.A. students intend afterward to pursue a Ph.D. in Medieval Studies or in History, English, Romance Languages, or another field.

### Master of Arts in Medieval Studies

The M.A. degree should be completed within two years, though the Graduate School sets a six-year maximum on completion from the date of initial matriculation. M.A. students are required to complete 31 credits, usually in this pattern: seven credits in the first semester taking ENGL 5100 and 5182; and a three credit graduate course of their choice; nine credits in the second semester; six credits in the third semester; and nine credits in the fourth semester.

Required Courses:ENGL 5100, 5182, 5315, 6315; HIST 5316; and six additional three credit courses.

Four courses should form a major concentration in one field, and three courses should form a minor concentration in another field; these courses may overlap with the core distribution requirements.

Students must also pass the M.A. written examination, which may be taken any time after the first two semesters of coursework and before April of the second year of study: the timing is decided on an individual basis. Students should create a major and minor field reading list in consultation with the advisor, and answer one question about each list within a four hour examination period. Students must also demonstrate competence in Latin (either through coursework or a written examination).

### Doctor of Philosophy in Medieval Studies

Requirements for the Doctoral degree should ordinarily be completed in five years for Ph.D. students, but work for the Ph.D. degree must be completed within eight years of the beginning of the student’s matriculation. Ph.D. students are ordinarily required to complete 25 credits of coursework at UConn for the Ph.D., and at least 40 credits total of graduate work.

Required Courses: ENGL 5100, 5182, 5315, 6315; HIST 5316; four additional three credit courses. Four courses should form a major concentration in one field, and a minimum of two courses each should form two minor concentrations in two other fields. Students must demonstrate competence in Latin and in two modern languages, either through coursework or by examination. Students must also complete four preliminary examinations (4 hours each) followed by an oral examination, a dissertation prospectus, and a dissertation and defense.

Students who feel they have fulfilled any of the requirements listed above at another institution may petition the graduate program office to have those requirements waived at UConn. Students who previously took the M.A. in Medieval Studies at UConn will not be required to take ENGL 5100 and 5182 again.

## Molecular and Cell Biology (M.S., Ph.D.)

The Department of Molecular and Cell Biology offers Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees in Molecular and Cell Biology. Modern molecular and cell biology is an interdisciplinary field that overarches classic research disciplines. Upon admission to the Molecular and Cell Biology Field of Study, students pursuing a Ph.D. or M.S. degree focus on one of four Areas of Concentration: Cell and Developmental Biology; Genetics and Genomics; Microbiology; and Structural Biology, Biochemistry and Biophysics. The M.S. in each of the Areas of Concentration may be either a coursework or research-based degree. Students enrolled in the program will develop competencies in critical thinking, hypothesis design and testing, and technical expertise required to conduct research as an independent scientist in molecular and cell biology. In addition to formal courses and laboratory research, training includes the development of skills in scientific writing and communication, and mentoring others in scholarly and research activities.

Requirements: The M.S. and the Ph.D. requirements in Molecular and Cell Biology conform to the Graduate School requirements as outlined in the Academic Regulations section of this catalog. Specific course requirements for the M.S. and PhD in Molecular and Cell Biology are determined by the student’s advisory committee consistent with the minimum requirements specified by the Graduate School. Ph.D. students are required to take section 01 of MCB 5884; section 02 of MCB 5884; and MCB 6000, unless they were enrolled in an MCB Master’s program prior to entering the Ph.D. program. In special circumstances the advisory committee may waive some of these requirements. The Ph.D. in Molecular and Cell Biology does not have a related area or foreign language requirement, unless one is specified by the advisory committee.

## Music (M.Mus., M.A., D.M.A., Ph.D.)

The Department of Music offers four degrees: Master of Music (M.Mus.), Master of Arts (M.A.), Doctor of Musical Arts (D.M.A.), and Doctor of Philosophy (Ph.D.). The Department of Music also offers a Performer’s Certificate. The M.Mus. and D.M.A. degrees may be awarded in Performance or Conducting. The M.A. degree may be awarded in Historical Musicology or Music Theory. The Ph.D. may be awarded in Music Theory and History. The M.Mus. and M.A. degrees prepare students for teaching at public and private institutions, including some college and university-level teaching as well as for further study at the doctoral level. The D.M.A. and Ph.D. degrees prepare students for college and university teaching, performance, and/or research. In addition to the Graduate School requirements outlined in the Academic Regulations section of this catalog, the graduate programs in Music have the following requirements.

### **M.Mus. and M.A. Requirements**

Satisfactory completion of at least 30 credits is required for the M.Mus. degree, and at least 33 credits for the M.A. degree, with a minimum GPA of 3.0 required for students in either program. Students in the M.Mus. and M.A. programs are required to take MUSI 5302 and 5391. Students in the M.Mus. program are required to present one recital, MUSI 5397. Students in the M.A. program are required to submit a thesis that represents an original contribution to research in the field and must demonstrate reading knowledge of at least one foreign language. All Master’s degree students must also pass a comprehensive oral Master’s Degree Final Examination. Additional discipline-specific course requirements are listed below.

M.Mus. in Performance Requirements:MUSI 5323 for 14 credits, Music Electives (Music History, Theory, or Literature) for three credits, and six credits of other electives. Students with an emphasis in voice must demonstrate proficiency in foreign languages and diction.

M.Mus. in Choral Conducting Requirements:MUSI 5305 for two credits, 5323 (conducting) for three semesters (six credits total), 5323 or 3222 (secondary, voice or piano) for two credits, 5330, 5365, 5366, 5367; One course from: MUSI 6411, 6412, or 6413; Electives for two credits. In addition, students are expected to participate in MUSI 5331 each semester of residence.

M.Mus. in Instrumental Conducting Requirements:MUSI 5305 for two credits, 5323 for six credits, 5364, 5372, 5373; one course from: MUSI 6411, 6412, or 6413; Electives for four credits. In addition, students are expected to participate in MUSI 5331 each semester of residence.

M.A. in Historical Musicology Requirements:MUSI 5319, 5348, 5353, 5354, 5379, 6411, 6412, 6413; Electives for three credits; GRAD 5950 for nine credits. In addition, attendance and participation in the Music History/Theory Colloquium is expected during each semester of residence.

M.A. in Music Theory Requirements:MUSI 5354; two courses from: MUSI 5348, 5353, 5356, 5359, 5379 for six credits total; two courses from: MUSI 6411, 6412, or 6413 for six credits total; Electives for three credits; GRAD 5950 for nine credits. In addition, attendance and participation in the Music History/Theory Colloquium is expected during each semester of residence.

### D.M.A. and Ph.D. Requirements

The D.M.A. and Ph.D. degrees each require satisfactory completion of at least 60 credits, with a minimum GPA of 3.0 required for students in either program. Students in the D.M.A. and Ph.D. programs are required to take MUSI 5391. Students in both doctoral programs must demonstrate reading knowledge of at least one foreign language and must pass the Doctoral General Examination. Following the Doctoral General Examination, students are required to submit a dissertation proposal for approval by the student’s Advisory Committee, the Graduate Studies Committee of the Department of Music and by the Graduate School. Upon completion of the dissertation, which must present an original contribution to research in the field, students are required to present and pass a Doctoral Dissertation Defense, which includes an oral final examination by the student’s Advisory Committee. Additional discipline-specific course requirements are listed below.

D.M.A. in Performance Requirements:MUSI 5323 for four semesters (16 credits total); four semesters of ensemble, chosen from: MUSI 5305, 5324, or 5325 for four credits; Theory or History minor, with four courses chosen from: MUSI 5302, 5319, 5348, 5353, 5354, 5356, 5359, 5379, 6411, 6412, or 6413 for 12 credits total; Directed Electives for seven credits (in consultation with the Major Advisor and the Advisory Committee); MUSI 5397 three recitals (three credits total); GRAD 6950 for 15 credits.

D.M.A. in Conducting Requirements: MUSI 5323 for four semesters (16 credits total); two semesters of ensemble (observer/assistant conductor role, two credits each semester) registered under MUSI 6400 Tutorial (four credits total); Theory or History minor, with four courses chosen from: MUSI 5302, 5319, 5348, 5353, 5354, 5356, 5359, 5379, 6411, 6412, or 6413 for 12 credits total; Directed Electives for seven credits (in consultation with the Major Advisor and the Advisory Committee); MUSI 5397 one recital (one credit) plus two (non-credit) large ensemble conducting appearances; GRAD 6950 for 15 credits.
In addition, students are expected to participate in MUSI 5331 during each semester of residence.

Ph.D. in Music Theory and History Requirements:MUSI 5302, 5319, 5348, 5353, 5354, 5359, 5379, 6411, 6412, 6413, 6491; Directed Electives for nine credits (in consultation with the Major Advisor and the Advisory Committee); GRAD 6950 for 15 credits. In addition, attendance and participation in the Music History/Theory Colloquium is expected during each semester of residence.

## Natural Resources: Land, Water, and Air (M.S., Ph.D.)

The Department of Natural Resources and the Environment offers two graduate degrees in Natural Resources: Land, Water, and Air, Doctor of Philosophy (Ph.D.) and Master of Science (M.S.). The Department offers advanced study in the following areas: Conservation and Management of Forests, Wetlands, Fisheries and Wildlife, Climate, and Water Resources; Ecosystem Science and Management; Geospatial Analysis such as Remote Sensing of the Environment/GIS; Landscape Ecology; and Human Dimensions of Natural Resources. The purpose of the M.S. program is to provide advanced study. The M.S. degree may be awarded as Plan A or Plan B. The Plan A M.S. is a research-based master’s degree whereas the Plan B M.S. is a coursework-based master’s degree. The M.S. program prepares students for Ph.D. programs (Plan A) or for careers in natural resources science and management with local, state, and federal government agencies, environmental consulting firms, or non-profit organizations (Plan A and Plan B). The Ph.D. program is designed to educate scientists with a broad experience in natural resources and to prepare them to do independent research. The Ph.D. program prepares students for careers in research and teaching in natural resources, including academia, non-profit organizations, industry, and government. Full-time students are expected to complete their Ph.D. degree work in three to five years and part-time students in five to seven years.

Requirements.The Plans of Study for Ph.D. and M.S. students in Natural Resources are determined by the student’s advisory committee consistent with the minimum requirements specified by the Graduate School in addition to departmental guidelines and requirements described below.

### Master of Science

Students can pursue an M.S. degree by either of two plans as determined by their advisory committee. Plan A requires a written thesis that summaries findings from an independent research project and a final oral examination. Plan A conforms to the Graduate School requirements for a Thesis Master’s Degree. Plan B requires a final examination but no thesis. Plan B conforms to the Graduate School requirements for a Non-thesis Master’s Degree. Both M.S. degree plans require 30-credits following the Graduate School guidelines.

### Doctor of Philosophy

Ph.D. students are required to successfully complete NRE 6000, 6500; and any additional course work as approved by the candidate’s advisory committee as part of the Plan of Study.

## Nursing (D.N.P., M.S., Ph.D.)

The School of Nursing offers study leading to the Master of Science (M.S.), Doctor of Nursing Practice (D.N.P.), and Doctor of Philosophy (Ph.D.) degrees in nursing.

### **Master of Science Requirements**

The purpose of the Master’s program is to prepare nurses for advanced practice with specialized knowledge, skills, and values. Graduates assume leadership roles in the health care system and the discipline of nursing by applying existing knowledge and using a spirit of inquiry to examine and test knowledge. Areas of Concentration include the following: Adult-Gerontology Acute Care Nurse Practitioner, Adult-Gerontology Primary Care Nurse Practitioner (this program is not currently accepting new students), Family Nurse Practitioner, Neonatal Nurse Practitioner, Nurse Leader, and Nurse Educator. The Commission on Collegiate Nursing Education accredits the program. The plan of study includes online nursing and related courses according to the requirements for each area of concentration. Part-time and/or full-time plans of study are available. Each student completes a core curriculum in theory, statistics, research, evidence-based practice, and legal, regulatory and policy aspects of advanced nursing practice. Additional courses in the areas of concentration are also required. For candidates applying to the Adult Gerontology Acute Care Nurse Practitioner, Family Nurse Practitioner, Adult Gerontology Primary Care Nurse Practitioner, and Nurse Educator concentrations, documentation of a minimum of 2,080 hours of clinical experience as a Registered Nurse (RN) providing direct patient care must be provided in the admission application. For candidates applying to the Neonatal Nurse Practitioner Program, a minimum of two years of full-time, RN-level practice experience in a Level III neonatal intensive care unit is required prior to enrolling in NURS 5369. All Master’s programs are delivered fully online.

No student may take more than 12 credits in the master’s degree as a non-matriculated student. No student may transfer in more than 25% of course credits required for the master’s degree plan of study. The M.S. program requires a cumulative grade point average of 3.0 or above to earn the Master of Science degree in Nursing. Students must earn a “B” (83%) or better in all graduate courses with a NURS prefix in order to earn credit toward graduation. A student may only repeat one course with a NURS prefix throughout their graduate study. If a student earns a B- they may repeat that course, one time. If a student earns a “C+” or below on the first try, a collaborative decision between the advisor and the student will determine if a repeat of the course is appropriate. M.S. APRN programs require a summative clinical performance evaluation. The M.S. Advanced Nursing Practice programs do not require a final comprehensive exam.

Nurse Practitioner Required Core Courses:NURS 5012, 5020, 5030, 5035, 5060, 5870.

Adult Gerontology Acute Care Nurse Practitioner Track:NURS 5500, 5550, 5559, 5560, 5562, 5569, 5570, 5579, 5590.

Adult Gerontology Primary Care Nurse Practitioner Track (This program is not currently accepting new students):NURS 5062, 5400, 5405, 5409, 5410, 5419, 5420, 5429, 5470.

Family Nurse Practitioner Track:NURS 5062, 5400, 5405, 5409, 5410, 5420, 5430, 5439, 5449, 5470.

Neonatal Nurse Practitioner Track:NURS 5350, 5362, 5365, 5369, 5370, 5375, 5379, 5385, 5389.

Nurse Educator and Nurse Leader Required Core Courses: NURS 5012, 5020, 5030, 5035, 5235, 5249, 5870.

Nurse Educator: NURS 5060, 5062, 5470 or 5590, 5700, 5710, 5720.

Nurse Leader: NURS 5230, 5240, 5245, 5865.

**Credit requirements for each M.S. track:**

Adult Gerontology Acute Care Nurse Practitioner: 45 credits

Adult Gerontology Primary Care Nurse Practitioner: 45 credits (This program is not currently accepting new students)

Family Nurse Practitioner: 48 credits

Neonatal Nurse Practitioner: 44 credits

Nurse Educator: 39 credits

Nurse Leader: 33 credits

### Doctor of Nursing Practice Requirements

The Doctor of Nursing Practice (D.N.P.) Program offers a terminal degree in nursing for those interested in an advanced nursing practice role. The D.N.P. prepares nurses to assume leadership roles as providers and administrators in healthcare settings or as clinical faculty in educational settings. The D.N.P. program focuses on education in the scholarship of application and integration. This program has two entry/matriculation points: post-Bachelor’s degree (B.S.-D.N.P.) and post-Master’s degree entry for those already holding RN or APRN licensure and certification with Master of Science (M.S.) preparation. The B.S. - D.N.P. Program includes four Nurse Practitioner concentrations (Adult Gerontology Acute Care Nurse Practitioner, Adult Gerontology Primary Care Nurse Practitioner (this program is not currently accepting new students), Family Nurse Practitioner, and Neonatal Acute Care Nurse Practitioner) as well as a concentration for a Nurse Leader. These concentrations require students to complete the coursework for the associated concentration for the M.S. in Nursing and lead to the conferral of an M.S. degree as part of the B.S.-D.N.P. Program. This option allows students to begin advanced practice while continuing their doctoral studies. The B.S.-D.N.P. Program options range in credits from 84-92 in total (dependent on area of concentration), as well as a D.N.P. Project and evidence of a minimum of 1,000 supervised clinical hours. The Post-M.S. Program of Study requires a minimum of 30 credits, a D.N.P. Project, and evidence of a minimum of 1,000 supervised clinical hours post-baccalaureate. A scholarly portfolio, a general exam and a D.N.P. project are required for graduation.

Required Core Courses:NURS 5845, 5850, 5855, 5860, 5865, 5869, 5870, 5879, 5885, 5889, 5895, and GRAD 5910.

Optional Related Area Certificates. Health Professions Education Graduate Certificate: NURS 5700, 5710, and 5720. Holistic Nursing Online Graduate Certificate: NURS 5001, 5002, and 5003. Pain Management Online Graduate Certificate: NURS 5101, 5102, 5103, and 5104. Healthcare Innovation Online Graduate Certificate: NURS 5111, 5112, 5113, 5114.

### Requirements for Clinical Practice

In addition to academic qualifications, UConn nursing students must possess the ability to consistently demonstrate a proficiency in five core areas for nursing students: motor, sensory, communication, behavior and critical thinking skills. These areas reflect the reasonable expectations of a nursing student performing the common functions of a registered nurse or an advanced practice nurse.

The ability to consistently demonstrate these personal and professional competencies are essential from admittance to graduation. Students must be capable of performing the skills of a nursing student.

Therefore, each nursing student must have the ability to learn and perform the following competencies and skills:

**Motor:** The student must possess sufficient motor capabilities to execute the movements and skills required to provide safe and effective nursing interventions. These include, but are not limited to:

1. Coordination, speed and agility to assist and safely guard (protect), with safe and proper body mechanics, patients who are ambulating, transferring, or performing other activities.
2. Ability to adjust and position equipment and patients, which involves bending or stooping freely to floor level and reaching above the head.
3. Ability to move throughout the classroom or clinical site, and sit and stand for long periods of time to carry out patient care activities.
4. Ability to perform patient care duties for up to 12 hours at a time, day or night.
5. Ability to move or position patients and equipment, which involves lifting, carrying, pulling up to 30 pounds.
6. Ability to guide, resist, and assist patients, or to provide emergency care, which involves standing, kneeling, sitting, or walking.
7. Ability and dexterity to manipulate the devices used in giving nursing care.
8. Ability to administer CPR without assistance.

**Sensory:** The student must be able to obtain information in classroom, laboratory, or clinical settings through observation, auscultation, palpation and other measures, including but not limited to:

1. Visual ability (corrected as necessary) to recognize and interpret facial expressions and body language, identify normal and abnormal patterns of movement, to read or set parameters on various equipment, to discriminate color changes, and to interpret and assess the environment.
2. Auditory ability (corrected as necessary) to recognize and respond to soft voices, auditory timers, equipment alarms, call bells, and to effectively use devices for measurement of blood pressure, breath sounds, etc.
3. Tactile ability to palpate a pulse and to detect changes or abnormalities of surface texture, skin temperature, body contour, muscle tone, and joint movement.
4. Sufficient position, movement and balance sensations to assist and protect patients who are ambulating, transferring, or performing other activities.

**Communication:** The student must be able to communicate effectively with peers, faculty, patients and their families, and other health care providers. This includes, but is not limited to:

1. Ability to read at a competency level that allows one to safely carry out the essential functions of an assignment (examples; handwritten chart data, printed policy, and procedure manuals).
2. Ability to effectively interpret and process information.
3. Ability to effectively communicate (verbally and in writing) with patients and their families, health care professionals, and others within the community.
4. Ability to access information and to communicate and document effectively via computer.
5. Ability to recognize, interpret, and respond to nonverbal behavior of self and others.

**Behavior:** The student must be capable of exercising good judgment, developing empathic and therapeutic relationships with patients and others, and tolerating close and direct physical contact with a diverse population. This will include people of all ages, races, socioeconomic and ethnic backgrounds, as well as individuals with weight disorders, physical disfigurement and medical or mental health problems. This also includes, but is not limited to:

1. Ability to work with multiple patients, families, and colleagues at the same time.
2. Ability to work with classmates, instructors, health care providers, patients, families and others under stressful conditions, including but not limited to providing care to medically or emotionally unstable individuals, situations requiring rapid adaptations, the provision of CPR, or other emergency interventions.
3. Ability to foster and maintain cooperative and collegial relationships with classmates, instructors, other health care providers, patients and their families.

**Critical Thinking:** The student must possess sufficient abilities in the areas of calculation, critical problem solving, reasoning, and judgment to be able to comprehend and process information within a reasonable time frame as determined by the faculty and the profession. The student must be able to prioritize, organize and attend to tasks and responsibilities efficiently. This includes, but is not limited to:

1. Ability to collect, interpret and analyze written, verbal, and observed data about patients.
2. Ability to prioritize multiple tasks, integrate information, and make decisions.
3. Ability to apply knowledge of the principles, indications, and contraindications for nursing interventions.
4. Ability to act safely and ethically in the college clinical lab and in clinical placements within the community.

If a nursing applicant or student is unable to meet one or more of these areas due to a long-term or short-term disability, they may request consideration for an accommodation through the Center for Students with Disabilities. Prompt notice is essential for full consideration. The requirements for clinical practice apply for all programs which include a clinical component.

### Doctor of Philosophy Requirements

The purpose of the Doctor of Philosophy (Ph.D.) Program is to prepare nurse leaders who will advance the scientific body of knowledge that is unique to professional nursing practice. Educational experiences offered in nursing theory development, philosophy of nursing science, qualitative, quantitative and mixed research methods, and in advanced statistics. Study in specialty areas further supports the individual’s area of clinical interest. A general exam (publishable manuscript), a scholarly portfolio (minimum of one published paper, one external podium or poster presentation), submission of one peer-reviewed grant application, and a dissertation (traditional five chapter or three manuscript based (excluding general exam) five chapters) are required for graduation.

Required Core Courses:GRAD 5910; 15 credits of GRAD 6950; NURS 6100, 6101, 6122, 6123, 6125, 6130, 6135, 6160, 6165, 6175; six credits in courses supportive of the dissertation area.

## Nutritional Sciences (M.S., Ph.D.)

The Department of Nutritional Sciences offers Master of Science and Doctor of Philosophy degrees. University of Connecticut undergraduates can pursue a fast track pathway (4 + 1 program) that allows them to earn both a Bachelor of Science degree and a Master of Science degree in 5 years. Students elect to emphasize one of three overlapping areas in human nutrition: Molecular Nutrition, Metabolism, and Community Nutrition. Each emphasis area is interdisciplinary in approach and is supported by a broad range of local, national, and international collaborations. The Master’s program usually requires a thesis and the Ph.D. program requires a dissertation. Students interested in pursuing a master’s degree in personalized nutrition as their primary graduate program are encouraged to apply to the Department’s stand-alone Master of Science in Personalized Nutrition (MSPN) online program.

### Master of Science

There are two options for the Master’s degree Program: Plan A (thesis option) and Plan B (non-thesis option). All M.S. students are required to take a minimum of 30 credits.

Requirements: GRAD 5910; NUSC 5100, 5200, 5300, 5394; three credits of statistics, and three additional graduate credits constitute the core requirements. A minimum of 21 course credits is required for the thesis option, in addition to nine thesis credits. Students earning the Master of Science degree are required to complete an examination process that consists of two parts. Part one is a written general knowledge examination with a closed book. Part two is an oral presentation and defense of the thesis research.

### Doctor of Philosophy

All Ph.D. students are required to take GRAD 5910\*; NUSC 5100, 5200, 5300; two credits of NUSC 5394; three credits of statistics, and a minimum of six additional credits of graduate courses plus 15 credits of research for the dissertation (GRAD 6950). \*Students may also satisfy the Responsible Conduct in Research (RCR) requirement by completing a two-day RCR workshop offered by the Office of the Vice President for Research. However, this workshop is not offered for academic credit; therefore, the one credit from GRAD 5910 must be replaced with an additional graduate credit from another course.

In addition to the requirements listed in the Graduate Catalog, Ph.D. students in Nutritional Sciences are expected to present a seminar on a topic close to their area of research to the whole department. Ph.D. students are required to take the pre-doctoral examination. Once the written exam is completed, the oral examination follows. During the oral examination the student will be asked questions that cover multiple areas of nutrient metabolism, physiology and other nutrition-related topics that the advisory committee finds pertinent. The exam generally takes no more than two hours. The Ph.D. in Nutritional Sciences does not have a related area or foreign language requirement.

## Oceanography (M.S., Ph.D.)

The Department of Marine Sciences offers graduate studies in the field of oceanography, leading to the degrees of Doctor of Philosophy and Master of Science. The Master’s degree is offered as a research-oriented Plan A (thesis) program, and as a course-based Plan B program. The Plan B program includes an accelerated (4+1) program for UConn undergraduates majoring in Marine Sciences. Entry into the Ph.D. program usually requires a Master’s degree, but particularly well-prepared students may enter directly from a Bachelor of Science program.

The curriculum for the Plan B master’s degree includes coursework in biological, chemical, physical and geological oceanography and an examination in the final year. Potential employers include non-governmental organizations, state and federal agencies, secondary and postsecondary educational institutions, and environmental consulting firms. This program may also provide preparation for more advanced graduate studies, although students interested in research are encouraged to apply for the Plan A (thesis-based) M.S.

### **Master of Science Plan A**

Requires 21 credits of advanced coursework, including at least 12 credits of graduate MARN coursework, nine GRAD 5950 credits, and completion of a research project, the results of which are reported in a thesis.

### **Master of Science Plan B**

Requires 30 credits of advanced coursework, including at least 12 credits of graduate MARN coursework, and a final examination. No research project is required.

Although students decide on their coursework in consultation with their major advisor based on their academic background and research goals, the coursework is typically built around a two-tiered structure: four courses MARN 5010, 5030, 5050, and 5065, designed to provide a core understanding of the basic sub-disciplines of the field of oceanography, followed by a series of more specialized courses offered to meet the individual needs of the student.

#### Accelerated (4+1) Master of Science Plan B

Students pursuing a UConn undergraduate Bachelor of Science degree in Marine Sciences can apply to use up to 12 credits of graduate coursework taken as an undergraduate towards both their B.S. and their M.S. For students in the accelerated program, the Master of Science Plan B degree can be earned in a single year after finishing the B.S.

**Required Core Courses:** All students in the accelerated program must take four core courses: MARN 5010, 5030, 5050, and 5065. To finish the combined program in five years, MARN 5010 and 5050 should be taken in Year Four as an undergraduate student and MARN 5030 and 5065 should be taken in Year Five as a graduate student.

Students are also required to take at least six credits from the following list: MARN 5012, 5015, 5017, 5032, 5812, 5505, 5018, 5066, 5052, 5210. Six of these credits should be taken in Year Four (as an undergraduate) and can be used for both the B.S. and the M.S. degrees. The remainder of the required 30 credits must be selected from MARN courses, based on the interest of the student and approval of the student’s major advisor. However, no more than six credits can be at the 3000-4000 level, no more than three credits of MARN 5893 and three credits of MARN 5899 are allowed, and no more than three credits of MARN 4893, 4895, 4896W, or 4898 are allowed.

**Final Examination:** The students in the accelerated program will be responsible for the material in the four core courses and must pass a final examination based on these courses.

### Doctor of Philosophy

Requires 30 course credits plus 15 credits of GRAD 6950 or 6960 in addition to six related area credits. Doctoral students who have already earned a Master’s in the field of study or closely related field must earn 15 credits beyond the Master’s plus 15 credits of GRAD 6950 or 6960 in addition to six related area credits.

## Pathobiology (M.S., Ph.D.)

The Department of Pathobiology offers two graduate degrees: Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) in Pathobiology, with areas of concentrations in Bacteriology, Virology, and Pathology, as well as an M.S. degree in Pathobiology with an area of concentration in Veterinary Anatomic Pathology. Faculty research focuses on infectious diseases of animals and humans, vaccines, veterinary pathology, and wildlife diseases. Many faculty are members of the Center of Excellence for Vaccine Research (CEVR), which provides a unifying consortium for vaccine research at the University of Connecticut. The department also provides service to the University and citizens of the State of Connecticut through integration with the Connecticut Veterinary Medical Diagnostic Laboratory. The Veterinary Anatomic Pathology M.S. program is open only to students with the D.V.M/V.M.D. degree.

### Master of Science

For the areas of concentration in Bacteriology, Pathology, and Virology, students can follow either Plan A (thesis) or Plan B (non-thesis) options. For the Plan A, Master of Science degree, 21 credits of coursework and nine credits of GRAD 5950 or 5960 are required. For the Plan B, Master of Science degree, 30 credits of coursework followed by a comprehensive exam are required. All courses used to meet the degree and concentration requirements must be approved by the student’s major advisor. For the M.S. degree with an area of concentration in veterinary anatomic pathology, students must take the following courses: PATH 5300, 5303, 5392, 5394, and 5594.

### Doctor of Philosophy

For all areas of concentration, a total of 30 credits of coursework are required. All courses used to meet the degree and concentration requirements must be approved by the student’s major advisor. The Ph.D. in Pathobiology does not have a related area or foreign language requirement. In addition, students will give at least three seminar presentations during their tenure (prospectus seminar, near midpoint of their research and dissertation defense). The General Exam should be taken within one semester after completing course work. A Dissertation Proposal is to be written in the form of an NIH grant proposal and presented in the form of a seminar. This is to be completed within six months of passing the general exam. Students must at a minimum have one first author publication before completion of their degree. The student must present at research seminars once per year.

## Personalized Nutrition (M.S.)

The Department of Nutritional Sciences offers an online Master of Science in Personalized Nutrition (MSPN). The MSPN program is a professional degree that uniquely combines courses in nutrigenomics, clinical nutrition, and nutritional biochemistry to provide a foundation of knowledge and skills for Personalized Nutrition professionals.

#### Master of Science in Personalized Nutrition Requirements: NUSC 5200, 5280, 5300, 5325, 5410, 5600, 5700, 6311, 6313, and 6410.

## Pharmaceutical Sciences (M.S., Ph.D.)

The School of Pharmacy’s Program in Pharmaceutical Sciences offers graduate degrees in three areas of concentration: Medicinal and Natural Products Chemistry, Pharmacology/Toxicology, and Pharmaceutics.

### **Medicinal and Natural Products Chemistry**

The Division of Medicinal and Natural Products Chemistry in the Department of Pharmaceutical Sciences offers a Ph.D. in Medicinal and Natural Products Chemistry. The Division also offers a Master of Science (M.S.) degree in Medicinal and Natural Products Chemistry; however, the Division does not admit students to the University for the specific purpose of earning an M.S. degree. The Ph.D. program in Medicinal and Natural Products Chemistry is focused on research and education in all areas of drug discovery and development. The program prepares students for a wide-range of careers in academics, industry, and government. The M.S. and Ph.D. degrees in Medicinal and Natural Products Chemistry require a defined set of core courses, related area courses, electives, and research as outlined below.

M.S./Ph.D. Core Requirements: GRAD 5910; PHAR 5297, 5301, 5302, 5303.

Seminar Requirement: Ph.D. students are required to enroll in PHAR 5393 for a minimum of six credits. M.S. students are required to enroll in PHAR 5393 for a minimum of four credits. Each student will register for 5393 each semester and is expected to attend all Medicinal and Natural Products Chemistry and Pharmaceutical Sciences Departmental seminars. Each student will present a seminar once per year.

Elective Requirement:Ph.D. students are required to complete at least 11 credits of elective coursework. The elective coursework can be from the Department of Pharmaceutical Sciences or from an area related to Medicinal and Natural Products Chemistry. Courses are chosen by the student in consultation with their dissertation advisor. This requirement may be waived for students with a prior Master’s degree in a related area. M.S. students must meet the requirements of the UConn Graduate School in regards to total credit hours earned. These credits can be earned through coursework or lab research.

Research Requirement: Ph.D. students are required to take a minimum of 15 credits of GRAD 6950.

Advancement to Candidacy. There are two requirements for advancement to doctoral candidacy: passing the general examination and satisfying a third year progress review.

Dissertation Proposal: Submission of the dissertation proposal is required for Ph.D. students by the end of the second semester of the third year.

### **Pharmacology and Toxicology**

The Division of Pharmacology and Toxicology is one of the three core disciplines within the Department of Pharmaceutical Sciences. Scholarly laboratory research and the education of graduate students in all aspects of drug and chemical action are paramount activities of the pharmacology and toxicology faculty. Therapeutic and toxic reactions to drugs and chemicals and their physiological and biochemical mechanisms of action are emphasized in this program. Emphasis is also placed in the areas of biochemical toxicology, inhalation toxicology, molecular toxicology, molecular pharmacology of nuclear receptors, hepatotoxicology, and immunology. The Division of Pharmacology and Toxicology grants Ph.D. degrees under two tracks: Pharmacology and Toxicology. The course and scholarly requirements for the Ph.D. degree are described in detail below. In addition, the Division offers a thesis-based master’s degree, which requires 30 credits in total, to include at least 21 credits of advanced graduate coursework.

Requirements:Students pursuing the Ph.D. or M.S. degrees offered within the Division of Pharmacology and Toxicology must meet all requirements as stipulated by the Department of Pharmaceutical Sciences and the University of Connecticut Graduate School. Requirements for graduate studies in the Discipline of Pharmacology and Toxicology are summarized below.

Core Requirements.The following courses must be completed by all doctoral and master’s graduate students enrolled in the Division of Pharmacology and Toxicology: 12 - 16 Credits of: GRAD 5910; PHAR 54032, 5297, 5454, 5471, 5472; PNB 53021.

1 This course may be waived for students who have received an M.D., D.V.M., or Pharm.D. degree from an accredited U.S. institution. Students with a B.S. degree in Pharmacology and Toxicology and/or relevant course work from a U.S. institution may receive a comparable waiver.

2 Must be taken twice, ordinarily in first and second years.

Research Requirement:Plan A M.S. students are required to take a minimum of nine credits of GRAD 5950. Ph.D. students are required to take a minimum of 15 credits of GRAD 6950.

Additional Core Requirement for Toxicology Track:PHAR 6455; PATH 3100.

**Seminar Requirement:** Two to four credits of PHAR 5475 and 5493. Seminars meet on a regular schedule, weekly or as announced, throughout the academic year and are required of all students. Students are expected to attend and to present seminars in every year of their graduate program. Up to four credits of seminar may be earned toward the Ph.D. PHAR 5493 is required for all students.

Pharmacology/Toxicology Electives.Each faculty member offers one or more specialty courses in their area of research specialization. Each graduate student in a Ph.D. program will take at least two of these specialty courses, one of the courses being given by faculty other than the student's major advisor, totaling four credits.

Special Topics Electives.Special topics elective courses are offered from time to time for variable credit by special arrangement with the faculty to provide a means to cover new topics not otherwise available in the regularly scheduled courses. These courses may be repeated for credit, as long as the content is not repeated.

Statistics Requirement.Students must complete a three credit graduate level course in statistics. Ordinarily this requirement will be met by completing a course in the Statistics Department. STAT 5605, 5625, or ANSC 5601 are statistic courses taken most commonly by graduate students in the program.

Biochemistry Electives.All Ph.D. students will complete electives from other departments on campus, with at least six credits in courses with significant biochemistry content. This requirement is typically met by courses offered through Molecular and Cell Biology and/or Biology or Chemistry Departments. MCB 5217, 5280, and 5427 are recommended.

Academic Standards. All graduate students in the Pharmacology/Toxicology program are expected to achieve a grade of “B” or better in all core courses. A grade below “B” in one or more core courses may subject the student to dismissal from the program.

Qualifying Examination. A written qualifying examination covering comprehensive content in Pharmacology must be passed by all doctoral and master’s students.

General Examination in Pharmacology/Toxicology. A general examination is required for doctoral, but not master’s students.

Publications.Ordinarily, it is expected that each student will have one or more publications accepted and one or more publications submitted at the time of the Ph.D. dissertation defense.

### **Pharmaceutics**

Pharmaceutics is a highly multi-disciplinary field requiring expertise in chemistry, engineering, pharmacy, materials science, mathematics, and the biological sciences. The area of research ranges from fundamental studies of the physicochemical properties of drugs and related molecules to dosage forms and delivery systems. The Division of Pharmaceutics in the Department of Pharmaceutical Sciences offers the Doctor of Philosophy (Ph.D.) in Pharmaceutics. The Division also offers a Master of Science (M.S.) degree in Pharmaceutics; however, the Division does not admit students to the University for the specific purpose of earning an M.S. degree. Students may obtain an M.S. degree and must meet the Graduate School minimum requirements, including 30 credits approved by the major advisor. All students in the Ph.D. program are expected to complete at least 44 credits beyond the baccalaureate or its equivalent including at least 15 credits of GRAD 6950. Students are expected to undertake an industrial internship for one or two summers. In addition, students must pass the qualifying examination in their first year, submit a plan of study in their second year, and pass a general examination in their third year. The final requirements for graduation are the completion of original research normally leading to the publication of several manuscripts and defense of a doctoral dissertation comprised largely from the manuscripts describing the original research.

Prerequisites/Requirements for Incoming Students. Students have succeeded in the Pharmaceutics Graduate program with backgrounds in Pharmacy, Chemistry, Chemical Engineering, Bioengineering, Polymer Science, Biology, Biochemistry and related fields. Students entering without four semesters of calculus and two semesters of physical chemistry are expected to complete these within their first year of graduate study. Other background courses may also be required by individual faculty members depending upon the nature of the student's prior education and future research direction. **A** qualifying examination will be administered to all incoming Pharmaceutics graduate students, regardless of previous educational or professional background. The passing grade on each of the qualifying examinations is 70%. Students who do not achieve passing grades on specific sections of the examination will be required to earn a “B” or better in the course covering that section for which their background was inadequate. Failure to pass any part of the examination or earn a “B” or better in the corresponding course(s) will ordinarily be grounds for dismissal from the program.

Fundamental Course Requirements: (Prerequisites if not previously completed: MATH 1131\* and 1132\*, 2110\*, and 2410\* or three credit equivalent). CHEM 3463; GRAD 5910; PHAR 5293\*\*, 5297.

Core Requirements: Choose at least four of five from PHAR 6234, 6285, 6286, 6288, or 6290.

\* Students will not receive graduate credit for this course.

\*\* Students should register for Seminar in the Spring of their 2nd and 4th years in the program.

Elective Requirements: PHAR 5297 and 6242. Students also take other electives outside of the discipline.

Industrial Internships.Students are expected to undertake an industrial internship for at least one summer, usually the summer between their first and second years in the program.

**Seminars.** While students are expected to attend the Pharmaceutics seminar each semester, students are only required to register for the seminar PHAR 5293 in the Spring of their 2nd and 4th year in the program.

General Examination in Pharmaceutics. The general examination in Pharmaceutics will be comprised of evaluation of the written Dissertation Proposal and an oral defense thereof.

Academic standards. Wherever a student’s cumulative average falls below a 3.0 or if they receive a grade of “C” more than once, the student’s progress will be reviewed by the Pharmaceutics faculty to determine whether or not the student shall be permitted to continue graduate study.

Publications.Ordinarily, it is expected that each student will have one or more publications accepted and one or more publications submitted at the time of the Ph.D. dissertation defense. Accepted and submitted publications are often included as chapters in the graduate student’s Ph.D. Dissertation.

#### Timeline Guidance for Graduate Students:

|  |  |
| --- | --- |
| First year | Complete qualifying examinations and/or prerequisites, submit Plan of Study |
| Second year | Present first seminar |
| Third year | Complete general examination, data review session with committee and present research seminar  |
| Fourth year | Present research seminar and schedule additional committee meetings |
| Fifth year | Seminar and dissertation defense |

## Philosophy (M.A., Ph.D.)

The graduate program in Philosophy at the University of Connecticut enables students to earn a Master of Arts (M.A.) in the process of obtaining the Doctor of Philosophy (Ph.D.). We also enable students to earn an M.A. without being enrolled in the Ph.D. program, but such cases are not common and we generally admit only those students intending to obtain the Ph.D. Most students enter the Ph.D. program with at least a B.A. in Philosophy (or related field) and obtain the M.A. in the first two years of the Ph.D. program, proceeding from that point to the Ph.D. Students who are admitted to the Ph.D. program with an M.A. in Philosophy from another program have the option of accelerating their progress toward the Ph.D. In addition to those imposed by the Graduate School, the graduate program in Philosophy has additional requirements listed below.

### Master of Arts in Philosophy in the process of obtaining the Doctor of Philosophy

Requires a minimum of 30 credits of Philosophy coursework.

Required Courses:PHIL 5301 and 5307.

**Masters Exam:** Students must submit two essays in any area(s) of Philosophy demonstrating mastery in one or more subjects in the field.

Research Proposal: Students must demonstrate ability to formulate an original and defensible line of philosophical research.

### Doctor of Philosophy

For students who enter the Ph.D. program with a B.A., the Ph.D. requires an additional 15 credits beyond the 30 credits required for M.A. degree above, for a total of 45 credits of content coursework, plus 15 credits of GRAD 6950 (Dissertation Research). The Ph.D. in Philosophy does not have a related area or foreign language requirement.

For students who enter the Ph.D. program with an M.A. in Philosophy from a different institution, the Ph.D. requires a minimum of 30 credits of content coursework, plus 15 credits of GRAD 6950 (Dissertation Research).

Required Courses:

1. PHIL 5301
2. PHIL 5307
3. One course in Ethics and Social Political Philosophy: either PHIL 5302, or PHIL 5315, or PHIL 5350, or PHIL 5380. Substitutions can be made and require the permission of the Director of Graduate Studies.
4. One course in Metaphysics and Epistemology: either PHIL 5312, or PHIL 5330, or PHIL 5331, or PHIL 5340, or PHIL 5342. Substitutions can be made and require the permission of the Director of Graduate Studies.
5. One course in History of Philosophy: either PHIL 5320, or PHIL 5327. Substitutions can be made and require the permission of the Director of Graduate Studies.

General Examination:Students must submit three essays, one of which demonstrates mastery in Ethics, Social and Political Philosophy; one of which demonstrates mastery in Metaphysics and Epistemology; and one of which demonstrates mastery in History of Philosophy.

Dissertation Proposal:Students must complete a dissertation proposal, which includes submitting a written proposal and passing a formal dissertation proposal evaluation.

Dissertation:The dissertation has both a written and oral component.

### Master of Arts in Philosophy without admission to the Ph.D. program

Requires a minimum of 30 credits of Philosophy coursework.

**Required Courses:** PHIL 5301 and 5307.

**Masters Exam:** Students must submit two essays in any area(s) of Philosophy demonstrating mastery in one or more subjects in the field.

## Physical Therapy (D.P.T.)

The Department of Kinesiology offers a Doctor of Physical Therapy (D.P.T.) as well as a Master of Science in Athletic Training (M.S.A.T.), Master of Science (M.S.) in Kinesiology (Exercise Science concentration) and Doctor of Philosophy (Ph.D.) in Kinesiology (Exercise Science concentration). The Doctor of Physical Therapy is a professional doctorate leading to licensure as a physical therapist and practice in hospital, rehabilitation, outpatient and community-based care settings to provide care to patients with neurological and musculoskeletal disorders across the life span. It is a three-year, eight semester, post-bachelor’s program that prepares physical therapists who are well-equipped for contemporary practice and career-long learning to assure patient benefit from advances in healthcare.The first year consists of coursework in basic and clinical sciences, as well as health care practices. During the second through fourth semesters, students participate in clinical experiences that are integrated into the curriculum. During the third year, students complete three, full-time, off-campus, clinical practicums. Successful applicants to the D.P.T program meet or exceed the University of Connecticut Graduate School admission standards and have completed (generally “B” average or better) the prerequisite coursework prior to matriculation. The required courses include: Biology, General Chemistry I and II, Pre-Calculus or higher, General Physics I and II, Human Physiology and Anatomy I and II, Psychology (six credits), and Statistics. Submission of Graduate Record Examination scores is required.

Required courses:Completion of the Doctor of Physical Therapy degree requires the completion of each of the following courses and one, three-credit elective, approved by the Program Director (for a total of 121 credits): PT 5410, 5412, 5414, 5416, 5418, 5420, 5422, 5424, 5430, 5431, 5432, 5433, 5434, 5437, 5438, 5440, 5446, 5448, 5450, 5451, 5452, 5453, 5454, 5455, 5456, 5458, 5460, 5461, 5462, 5463, 5464, 5465, 5466, 5467, 5469, 5480, and 5481.

**Required Health-Related Community Service:** All Doctor of Physical Therapy Students must complete 30 hours of Health-Related Community Service. Types of service that qualify and final approval of hours must be obtained from the Program Director.

## Physics (M.S., Ph.D.)

The Department of Physics offers two graduate degrees: Master of Science (M.S.) and Doctor of Philosophy (Ph.D.). The M.S. degree is aimed at students pursuing careers in industry, state or federal government or science/physics education. The M.S. in Physics may be either a completely coursework based degree or it may have a thesis component as described later. The Ph.D. in Physics prepares students for research and teaching careers in physics and engineering disciplines, including research and leadership positions with non-profit organizations, industry, universities, private foundations, and state or federal government agencies.

### Master of Science in Physics

Students follow an individual plan of study arranged jointly by the student and an advisory committee, based on the student’s career goals as well as prior preparation. Candidates for the master’s degree without thesis are required to complete 30 credits of courses. Candidates for the master’s degree with thesis are required to complete 21 credits of courses and nine credits of thesis research, as stipulated in the Academic Regulations of this catalog.

Master of Science without Thesis Course Requirements:PHYS 5101, 5201, 5301, 5401, 5402, and 5500 totaling 18 credits. The remaining 12 credits could be 5000 or higher level courses from Physics, Mathematics, Biology, Chemistry, or College of Engineering.

Master of Science with Thesis Research Course Requirements:PHYS 5101, 5201, 5301, 5401, 5402, 5500 totaling 18 credits, and nine credits of thesis research GRAD 5950. The remaining three credits could be 5000 or higher level courses from Physics, Mathematics, Biology, Chemistry or College of Engineering.

### Doctor of Philosophy in Physics Course Requirements

PHYS 5302 and 5403. The rest of the credits necessary for a Ph.D. (on the Plan of Study) are determined by the student’s advisory committee. These credits could be 5000 or higher level courses from Physics, Mathematics, Biology, Chemistry or College of Engineering.

General Examination. Oral examination, short (~30 minutes) oral presentation on a research topic chosen in consultation between the student and their advisory committee, followed by an oral exam probing the student’s physics knowledge underlying their presentation. Students must satisfy the core coursework requirement before taking the Ph.D. General Examination (i.e. obtain a grade of B or better in four courses from the core course list). The general examination committee consists of the student’s three-person advisory committee, plus two other faculty members from a different research field.

Dissertation Proposal. By the end of their third year, all Ph.D. students must have an Advisory Committee and must complete their Dissertation Proposal (details and form at the Graduate School website). The written proposal must be approved by the student’s Advisory Committee, including an oral defense of the proposal before a committee composed of their Advisory Committee and two other faculty examiners.

Additional General Requirements.In addition, the following requirements apply to all students entering the Physics graduate program. Each year, each student must complete, in consultation with their faculty advisor, a Physics Graduate Student Progress Form. A Plan of Study must be completed by M.S. students no later than the beginning of the final semester, and for Ph.D. students no later than when 18 credits of course-work have been completed. All Physics graduate students are expected to attend the Departmental Colloquium, and to participate in the regular research seminars in the department. A Safety Examination is required of all graduate students; a Shop Course is required for use of the Physics Machine Shop, and Laser Safety Training for students using lasers. All beginning graduate students are required to attend the Computer Information Workshop and Orientation on Computer Use and Security. There is no foreign language requirement for the Physics M.S. and Ph.D. degrees.

## Physiology and Neurobiology (M.S., Ph.D.)

The Department of Physiology and Neurobiology (PNB) offers Doctor of Philosophy (Ph.D.) as well as Plan A (Thesis) or Plan B (Coursework) M.S. degrees in Physiology and Neurobiology. Possible areas of focus include molecular, cellular, and systems level neurobiology, endocrinology, reproductive physiology, or liver biology. The PNB graduate program offers opportunity for intellectual growth through learning and discovery, development of technical and problem-solving skills, critical thinking, and effective scientific communication.

Requirements. The Ph.D. and M.S. degree requirements in Physiology and Neurobiology conform to the Graduate School requirements. Ph.D. and M.S. degrees in PNB require completion of a set of four core graduate courses from the PNB department, chosen from a list of approved courses (see below). Ph.D. students will generally complete an additional two to four advanced courses from inside or outside of PNB chosen in consultation with the student’s advisory committee. The Ph.D. in PNB does not have a related area or foreign language requirement. Research activities for Ph.D. students are primarily credited as PNB 5396 but must also include 15 credits of GRAD 6950. M.S. students will complete a minimum of 30 credits, including nine credits of GRAD 5950 for the Plan A M.S. All graduate students are required to register for PNB 6405 and 5395 each semester.

M.S. and Ph.D. Required Core Courses: at least one three-credit neurobiology course; at least one three-credit physiology course; and two additional three-credit PNB graduate level courses chosen in consultation with the student’s advisory committee. Students are expected to pass all four core courses with a grade of “B-“or better. Course offerings that fulfill the core course requirements with an emphasis in Neurobiology include PNB 6417, 6418, 6426, and 5700. Core courses that fulfill an emphasis in Physiology include PNB 5302, 5270, and 5350. No more than two of PNB 5700, 5270, or 5350 can be used to fulfill the core course requirements.

## Plant Science (M.S., Ph.D.)

The Department of Plant Science and Landscape Architecture offers two graduate degrees: Master of Science (M.S.) and Doctor of Philosophy (Ph.D.). The M.S. and Ph.D. degrees may be awarded with a concentration in Agronomy, Horticulture, Landscape Architecture, Plant Biotechnology, Plant Breeding, Plant Environment, Plant Health, and Soil Science

Requirements. In addition to the Graduate School requirements outlined in the Academic Regulations section of this catalog, students take one PLSC 5897 seminar course for the M.S. and two PLSC 5897 seminar courses for the Ph.D. One oral or poster presentation at a national or international professional meeting in your field of study may substitute for one PLSC 5897 seminar course requirement for Ph.D. degrees. The M.S. degree requires the student to take an M.S. final examination. The Ph.D. in Plant Science does not have a related area or foreign language requirement.

The programs are offered by the College of Agriculture, Health and Natural Resources.

## Political Science (M.A., Ph.D.)

The Department of Political Science offers a graduate program leading to the Doctor of Philosophy (Ph.D.) and the 5th Year Master of Arts (M.A.). Only UConn undergraduates are eligible to enter the Master’s program. The graduate curriculum is designed to serve the individual needs of students as they prepare for the variety of opportunities that the field offers for teaching, research and administrative positions in the public and private sectors. Emphasis is placed on developing an understanding of the dynamics and institutions of political life and learning the methods necessary for empirical and qualitative research and analysis. The Ph.D. program is designed to be completed in five years, with the first four-five semesters focused on coursework, the third year devoted to preparing for and passing qualifying examinations and preparing the dissertation prospectus, and the final one-two years on research and completion of the dissertation. In addition to the Graduate School requirements, the graduate programs in Political Science have the following requirements.

### 5th Year Master of Arts

Up to 12 credits of approved graduate coursework included on the student’s undergraduate plan of study can also be used toward both the B.A. and M.A. Plans of Study.

Required Courses: All 5th year students must take POLS 5000 (for three credits), 5605, 5615, 5620, and 5625. In addition, students are required to take at least two courses in one of the five POLS subfields (American Politics, Comparative Politics, International Relations, Political Theory, and Public Law). Finally, students must take three other courses of their choosing that are approved by their major advisor.

Research Presentation: All 5th Year POLS Master’s students must present the research conducted in POLS 5000: Independent Study in Political Science before a three-person faculty committee before the end of their final semester.

### Doctor of Philosophy

All students are required to take and pass examinations in two of the five subfields (American Politics, Comparative Politics, International Relations, Political Theory, and Public Law). The Ph.D. in Political Science does not have a related area or foreign language requirement. The course requirements are listed below.

American Politics: POLS 5406, 5407, 5408, and 5409.

Comparative Politics: POLS 5200; and at least four additional graduate-level courses in Comparative Politics.

International Relations: POLS 5300; and four other graduate-level International Relations courses.

Political Theory: POLS 5100; and at least four graduate courses in political theory.

Public Law: POLS 5505, 5510, and 5515; and either POLS 5010 or 5010.

Additional Doctor of Philosophy Requirements. In addition, all Ph.D. students must successfully complete POLS 5600, 5605, 5615; and one advanced methods elective approved by their major advisor. Finally, all POLS Ph.D. students must enroll in GRAD 6950-003 in their first, second, third, and fourth semesters. Students must earn an average grade of “B” in their coursework.

Qualifying Examinations.Students must take and pass examinations in two subfields, one of which is also their dissertation subfield.

Dissertation Prospectus. The prospectus will be developed in conjunction with and approved by the student’s dissertation committee, which must include at least three members of the Political Science graduate faculty. Students must defend their prospectus orally to their dissertation committee. The Graduate School requires that a total of five people must approve the prospectus document, signing off on its acceptability. These five people should be a combination of committee members and/or external reviewers. Students are expected to defend the prospectus within six months of passing their Ph.D. examinations. Students who fail to do this will be notified by the Director Graduate Studies, alerting them that they are in violation of this policy while the Department Head will notify their major advisor. Reason(s) for the student’s non-adherence to the timeline will be identified for the purpose of legitimizing the delay and/or devising and implementing measures to expedite progress. Two-month extensions may be granted in the event that reasonable progress is being made towards completion of the prospectus. If a student does not complete the prospectus in a timely manner, their standing in the program will have to be considered, which may entail losing their funding in the department’s graduate program.

Dissertation. When the major advisor and student agree that the dissertation is complete, the major advisor will organize a public defense. The full dissertation committee and any external readers must be present.

## Politics and Popular Culture (M.A.)

The Master of Arts (M.A.) in Politics and Popular Culture (PPC) requires 30 credits. All MPPC students take the following:

* Required Core Course (three credits): POLS 5700.
* Required Course (at least one): POLS 5100, 5200, 5300, or 5400.
* Required Core POLS Sequence (six credits): POLS 5600, 5605, or 5615.
* Required Master’s Project I POLS 5620, and Master’s Project II POLS 5621, totaling six credits.

MPPC students will then take the remaining credits from POLS classes with substantial PPC content. Preapproved classes are POLS 5710, 5720, 5105, 5100\* (Special Topics, repeatable with different content) POLS 3426, 3822. Students are encouraged to take at least one class with PPC content in a department other than POLS, with M.A. coordinator advice and consent. (\* or other core DHMS equivalent).

## Polymer Science (M.S., Ph.D.)

 *Jointly offered by the College of Agriculture, Health, and Natural Resources, College of Liberal Arts and Sciences, College of Engineering, School of Pharmacy, and UConn Health.*

The Institute of Materials Science Polymer Program serves as the sole center in the State of Connecticut for graduate research and education programs focusing on polymer science and engineering. The program is a nationally and internationally recognized center of excellence for interdisciplinary research and education in the fields of polymer science and engineering. The program is dedicated to meeting the educational needs of its graduate and professional students; providing lifelong learning opportunities in the study of polymeric materials; to assisting Connecticut industry in developing polymer technology; and to expanding and disseminating the global knowledge base regarding polymeric materials.

Master of Science Program

Other than the GRE General Test scores, there are no special requirements for admission to the master’s program beyond those of the Graduate School. Selection of Plan A (thesis) or Plan B (non-thesis) is made after consultation with the Advisory Committee. For Plan A, the student must successfully complete no fewer than 21 credit hours and no fewer than nine additional credits of Master’s Thesis Research by taking GRAD 5950 or 5960, as well as the writing an oral defense of a thesis. For Plan B, the student must successfully complete no fewer than 30 credits of advanced course work and a comprehensive final examination, but no thesis is required.

Doctor of Philosophy Program

Admission to the doctoral program is based upon a careful assessment of the student’s potential for creative research in polymer science. There are no special requirements for the doctoral program beyond those of the Graduate School, other than the GRE General Test scores.

Requirements: No fewer than 30 credit hours of advanced coursework, including POLY 5351, 5352, 5380, 5381, 5382, 5384, 6001; and at least 15 additional credits of Doctoral Dissertation Research GRAD 6950. The General Exam, which consists of two parts: a written portion and an oral portion. The written portion is a comprehensive cumulative four-part exam. The oral portion is the writing and oral defense of a dissertation proposal. The Doctoral Dissertation, which consists of two parts: a written dissertation, and an oral defense of the dissertation before a committee of faculty and the general public. The Polymer Science Program does not have a foreign language or related area requirement.

## Psychological Sciences (M.S., Ph.D.)

The Department of Psychological Sciences offers two graduate degrees: a Master of Science (M.S.) and a Doctor of Philosophy (Ph.D.). The Department has six Divisions with Ph.D. Programs offered in the following eight areas of concentration: Behavioral Neuroscience (Behavioral Neuroscience Division); Clinical Psychology (Clinical Division); Developmental Psychology (Developmental Division); Ecological Psychology (Perception, Action, Cognition Division); Industrial and Organizational Psychology (Industrial and Organizational Division); Language and Cognition (Perception, Action, Cognition Division); Neurosciences (Behavioral Neuroscience Division); Social Psychology (Social Division).

### Master of Science

The M.S. in Psychological Sciences is available to students enrolled in the Psychological Sciences Ph.D. program as well as to qualifying UConn undergraduate psychology majors who are admitted into an accelerated program that allows completion of all undergraduate and Master’s degree requirements within five years. Ph.D. students are typically required to complete a Plan A (Thesis) Master’s. In some situations, students may be allowed to complete a Plan B Master’s, but only if they will not continue in the Ph.D. program. Students in the Accelerated M.S. program can choose to complete a Plan A (Thesis) Master’s or a Plan B Master’s. This decision is up to the discretion of the Major Advisor and Division Head.

Students are typically admitted to the accelerated program at the end of the junior year of their undergraduate studies. A total of 12 credits from the Bachelor years can be included. The 12 credits could be a combination of:

* Up to 12 credits of approved required graduate courses from the student’s Undergraduate Plan of Study can be listed on the student’s Graduate Plan of Study.
* Up to six credits of approved undergraduate and graduate courses not used in the student’s Undergraduate Plan of Study.

The accelerated Master of Science in Psychological Sciences is only offered in one of the following six areas of concentration: Developmental Psychology, Ecological Psychology, Industrial/Organizational Psychology, Language and Cognition, Neuroscience and Social Psychology.

Master of Science Requirements

The Master of Science requires a minimum of 30 credits. For Ph.D. students pursuing a Plan A Master’s, these credits cannot include any credits used to meet the program requirements as listed on the Ph.D. Plan of Study.

**Quantitative Methods Requirements.** All students are required to take PSYC 5104. Each student must earn a grade of at least “B-” to meet Department requirements for the M.S. Any student with no previous statistics experience or who has a need to review undergraduate statistics should take STAT 1100Q on an audit basis before taking PSYC 5104.

Research and Final Exam Requirements: Plan A (Thesis). This plan emphasizes research activities and requires a minimum of 30 course credits which must include: PSYC 5104; GRAD 5950 or 5960 for a minimum of nine credits. Students must complete a Master’s thesis, following the rules specified by the Graduate School. In addition, near the close of the candidate’s period of study for the M.S. degree, normally not later than one year after the completion of the M.S. coursework, the student must pass a final examination under the jurisdiction of the advisory committee. This will be an oral examination (defense) based on the candidate’s thesis and issues relevant to the thesis.

Research and Final Exam Requirements: Plan B (Non-Thesis). This plan emphasizes comprehensive understanding of a more general character than the thesis plan and requires a minimum 30 credits of advanced coursework, which must include: PSYC 5104 and a minimum of three credits of PSYC 5800. The PSYC 5800 research project must be approved by the student’s Advisory Committee. In addition, near the close of the candidate’s period of study for the M.S. degree, and not later than one year after the completion of the M.S. coursework, the student must pass a final examination under the jurisdiction of the Advisory Committee. The examination is arranged by the Major Advisor with the assistance of the Associate Advisors.

Concentration Requirements: In addition to the general departmental requirements, each concentration has its own course requirements, which can vary depending on whether the student is in the accelerated master’s program or pursuing a master’s while in the Ph.D. program. The general requirements for a master’s for each area of concentration are listed below, with more specific requirements for Ph.D. students pursuing a master’s degree listed in the description of the divisional Ph.D. programs.

**Developmental Psychology Concentration**

**Required Core Class**: PSYC 5410.

**Required graduate courses, at least three from the following:** PSYC 5410, 5420, 5425, 5440, 5450, 5460, or 5470.

**Elective Undergraduate courses:** In addition, up to six credits of the following undergraduate courses not used in undergraduate plan of study can be used toward the M.S.: PSYC 3300, 3302/W, 3405, 3440, 3470, 3450W.

**Ecological Psychology Concentration**

**Required graduate courses, at least four from the following:** PSYC 5171, 5424, 5445, 5513, 5514, 5515, 5516, 5553, 5554, 5564, 5567, 5568, 5570, 5571, 5572, 5574, or 5583.

**Elective Undergraduate courses:** In addition, up to six credits of the following undergraduate courses not used in undergraduate plan of study can be used toward the M.S.: 3500, 3501, 3550W, 3551W, or 3552.

**Language and Cognition Concentration**

**Required graduate courses, at least four from the following:** PSYC 5171, 5424, 5445, 5513, 5514, 5515, 5516, 5553, 5554, 5564, 5567, 5568, 5570, 5571, 5572, 5574, or 5583.

**Elective Undergraduate courses:** In addition, up to six credits of the following undergraduate courses not used in undergraduate plan of study can be used toward the M.S.: 3500, 3501, 3550W, 3551W, or 3552.

**Neuroscience Concentration**

**Required Core Class (total three credits):** three semesters of: PSYC 5200.

**Required graduate courses, at least three from the following:** PSYC 5140, 5150, 5270, 5270, 5228, 5251, or 5285.

**Elective Undergraduate courses:** In addition, up to six credits of the following undergraduate courses not used in undergraduate plan of study can be used toward the M.S.: 3501, 3250W, 3251, 3252, or 3253.

**Social Psychology Concentration**

**Core Classes (six credits):** PSYC 5701, 5703. Required graduate courses, at least two from the following: PSYC 6782, 5770, 6750, 6732, or 6733.

**Elective Undergraduate courses:** In addition, up to six credits of the following undergraduate courses not used in undergraduate plan of study can be used toward the M.S.: PSYC 3405, 3102, 3106, 3105.

**Industrial/Organizational (I/O) Psychology Concentration**

**Required Core courses (nine credits):** PSYC 5123, 5614, 5615.

**Required graduate courses, at least one from the following:** PSYC 5105, 5611, 5612, 5613, 5616, 5617, 5619, 5620, 5670, 5671, 5701.

**Elective Undergraduate courses:** In addition, up to six credits of the following undergraduate courses not used in undergraduate plan of study can be used toward the M.S.: PSYC 3101, 3600, 3601, 3644, 3620, COMM 3110, BADM 3740, WGGS 3264.

### Doctor of Philosophy Program Divisions

The Psychological Sciences Department has six Divisions with Ph.D. Programs are offered in the following areas of concentration: Behavioral Neuroscience (Behavioral Neuroscience Division); Clinical Psychology (Clinical Division); Developmental Psychology (Developmental Division); Ecological Psychology (Perception, Action, Cognition Division); Industrial and Organizational Psychology (Industrial and Organizational Division); Language and Cognition (Perception, Action, Cognition Division); Neurosciences (Behavioral Neuroscience Division); Social Psychology (Social Division).

General Requirements for Ph.D. Plan of Study.For all divisions, the Department requires 15 credits of Doctoral Dissertation Research (GRAD 6950 or 6960); plus 15 credits of Ph.D. content coursework, which must include nine credits of breadth courses and course requirements that vary with the student’s chosen area of concentration and division (see details below). In addition to those requirements, all Ph.D. students must complete two statistical courses: PSYC 5104 and 5105. The Ph.D. in Psychological Sciences does not have a related area or foreign language requirement.

Ph.D. Plan of Study Psychological Sciences Department Requirements. Predissertation Research:at least one completed research project. This requirement can be met by a Master’s thesis or by a minimum of six credits of PSYC 5800 when appropriate.

Department Breadth Requirements.In order to expand the student’s knowledge beyond their specific area of study, a minimum of nine credits (typically three courses) of graduate work outside the student’s Division required. Usually any graduate class outside the student’s Division or the department will count as breadth, assuming it meets the following guidelines: PSYC 5104 and 5105 may not be used to fulfill the breadth requirement; no more than two quantitative courses, defined as courses that count for the Graduate Certificate Program in Quantitative Research Methods, may be used for breadth. No more than one breadth course may be taken with any one instructor, aside from the following classes: a course in grant writing; PSYC 5100, 5140, 5285; COGS 5001; three credit hours of PSYC 5801, taken with a faculty member outside the student’s Division, will meet Department breadth requirements as one course. (However, the Head of that faculty member’s Division must consent to this.) Students in the Perception, Action, Cognition Division who are in the Language and Cognition Concentration may use courses given by the Ecological Psychology faculty as breadth courses. Students in the Ecological Psychology program may, likewise, take courses offered by the Language and Cognition faculty to fulfill the breadth requirement. Upper level undergraduate classes in other departments and other courses may be considered for breadth on a case-by-case basis. Courses in other departments that are cross-listed as PSYC courses will not count towards the departmental breadth requirement if the PSYC version of the course is in the student’s Division, even if the student registers for the course under the external department course number. (BME 6086, cross-listed as PSYC 5270 will not count for BNS students). Students entering the program with a master’s from a different (Psychology or non- Psychology) department or division may have up to six breadth credits waived (up to two classes). A grade of at least “C+”must be earned in all courses elected for the purpose of meeting the departmental breadth requirement. If, in undertaking to meet the breadth requirement, a student fails to earn a grade of at least “C+”in any one course, but earns an overall average grade greater than “C+”, that student may submit a request to the Associate Department Head/Coordinator of Graduate Studies for a review of their case. The breadth requirement should ordinarily be completed in or before the semester in which the student takes the General Examination.

Quantitative Methods Requirements.All graduate students are required to take (or be exempted from) PSYC 5104 and 5105. Each student must earn a grade of at least “B-” in both courses to meet Department requirements for the Ph.D. Any student with no previous statistics experience or who has a need to review undergraduate statistics should take STAT 1100Q on an audit basis before taking PSYC 5104. Note that the six required credits of Quantitative Methods should be listed on the Ph.D. Plan of Study in the “Related Area” section and do not count towards the breadth requirement or minimum number of required Ph.D. credits and should not be listed in the Ph.D. Plan of Study “Coursework” section on page 2. Students who have taken statistics coursework prior to their enrollment in the Ph.D. program, may be eligible for a waiver of one or both of the Quantitative Methods courses.

Licensure Requirement.Students interested in licensure should contact their program for details on American Psychological Association recommendations and relevant courses offered by the department.

General Examination. Students must pass a General Examination. Details may vary across divisions.

Dissertation Proposal. Before dissertation research is undertaken, a research proposal must be approved.

Dissertation and Final Ph.D. Oral Defense.Students must pass an oral defense and submit an approved thesis.

Degree Milestones.In addition to these general requirements, students within a given Division must satisfy the following division-level requirements: **Master's Thesis and Defense (not required for** Ecological Psychology Concentration); Ph.D. Qualifying Examination; Ph.D. Prospectus; Ph.D. Dissertation Document and Defense.

Behavioral Neuroscience Concentration Required Courses. PSYC 5104, 5105; four semesters of Behavioral Neuroscience (BNS) seminars; two graduate-level BNS courses from two different areas of expertise, taught by different BNS psychology professors; at least six credits of graduate research; for the Ph.D., students must obtain at least 24 total credits in addition to any credits going towards the master’s degree.

Behavioral Neuroscience Concentration, Master’s Only Option Required Courses.At least 30 total credits including no more than six at the undergraduate level; PSYC 5104; two to four semesters of Behavioral Neuroscience (BNS) Seminar, for terminal master’s students two semesters are required, but it is recommended that the student enroll each semester in the program up to the fourth semester. For Ph.D. students who are initially obtaining a master’s, four semesters are required; two BNS courses with at least one graduate content course from each of two different areas of expertise (i.e., taught by different BNS psychology professors; at least six credits of graduate research.

“Plan A” Additional Requirements.A master’s thesis, with oral defense and a committee of three faculty members. At least three to four semesters in the program are recommended.

“Plan B” Additional Requirements.A written master’s examination is required, consisting of either: three questions from different faculty members (at least two in Behavioral Neuroscience), which each serve as the basis for a 10-15 page paper to be completed in 7-10 days; or a research report or literature review, which is reviewed by the master’s committee.

Clinical Psychology Concentration 1st Year Required Courses: GRAD 5950; PSYC 5104, 5105, 5300, 5301, 5302, 5303, 5304, 5305, 5307, 5399; PSYC 6301 and 6302 the Practicum in Adult/Child Psychotherapy (observation only).

Clinical Psychology Concentration 2nd Year+ Required Courses:GRAD 5950, and 6950 (once master’s is completed); PSYC 5300, 5332, 5306, 5140, 5399, 6301, 6302; an additional three related classes, totaling nine credits.

Clinical Competence. To receive the Ph.D. in Clinical Psychology, students must demonstrate clinical competence in training experiences in our training clinic and in off-site clinical placements, as well as a full-year internship.

Developmental Psychology Concentration Required Courses:five of these seven courses by degree’s end\*\*: PSYC 5410\*, 5420, 5425, 5440, 5450, 5460, 5470\*.

\* All students must take either PSYC 5410 or 5470.

\*\*A “developmental related course” from another division/department can substitute for one of these courses (other than PSYC 5410 or 5470), as per list of pre-approved courses or by permission of Developmental Psychology faculty.

Pre-Master’s Required Courses: GRAD 5950, 5960; PSYC 5104, 5105, 5400\*, 5499\*; PSYC 5800\* or 5801\*.

\* To be taken each semester.

Post-Master’s Required Courses:GRAD 6950, 6960; PSYC 5400\*, 5499\*; PSYC 5800\* or 5801\*.

\* To be taken each semester.

Industrial and Organizational Psychology Concentration M.A. Required Courses:Nine credits of GRAD 5950; PSYC 5104, 5105, 5123, 5600, 5614, 5615, 5699, 5701; MENT 6203.

Doctor of Philosophy Required Courses:Four courses in Industrial and Organizational Specialization Seminars by degree’s end; nine credits in Departmental Breadth Seminars; 15 credits of GRAD 6950; GRAD 6930; PSYC 5600, 5699; and Field Research Experience or equivalent.

Doctor of Philosophy Degree Milestones:Master’s Defense; General Examination; Dissertation Proposal; and Dissertation Defense.

Ecological Psychology Concentration Required Courses:PSYC 5104, 5553, 5554, 5571, 5574; STAT 5665; and one of the following courses: PSYC 6505; PSYC 5570 when taught as Current Topics in Cognitive Science: Developmental Systems, or Introduction to Complex Systems, or Longitudinal Data Analysis; or STAT 5825.

Language and Cognition Concentration Required Courses:PSYC 5567, 5568; four courses taught by the Language and Cognition faculty; three breadth courses taught outside the Language and Cognition division; a two course sequence in statistics, including PSYC 5104 or 5105.

Neuroscience Concentration Required Courses: PSYC 5104, 5105; four semesters of Behavioral Neuroscience (BNS) seminars; two graduate-level BNS courses from two different areas of expertise, taught by different BNS psychology professors; at least six credits of graduate research. For the Ph.D., students must obtain at least 24 total credits in addition to any credits going towards the master’s degree.

Neuroscience Concentration, Master’s Only Option Required Courses.At least 30 total credits, including no more than six at the undergraduate level; PSYC 5104; two to four semesters of Behavioral Neuroscience (BNS) Seminar; for terminal Master’s students, two semesters are required, but it is recommended that the student enroll each semester in the program up to the fourth semester. For Ph.D. students who are initially obtaining a master’s, four semesters are required; two BNS courses with at least one graduate content course from each of two different areas of expertise taught by different BNS psychology professors; and at least six credits of graduate research.

“Plan A” Additional Requirements.A master’s thesis, with an oral defense and a committee of three faculty members. At least three to four semesters in the program are recommended.

“Plan B” Additional Requirements.A written master’s examination is required, consisting of either three questions from different faculty members (at least two in Behavioral Neuroscience), which each serve as the basis for a 10-15 page paper to be completed in 7-10 days.; or a research report or literature review, which is reviewed by the master’s committee.

Social Psychology Concentration Requirements.Students must take at least one seminar from three different social psychology faculty members across their tenure in the program.

Pre-Master’s Required Courses:PSYC 5104, 5105, 5700, 5701, 5703, 5799; at least one of the following each semester: PSYC 5800; GRAD 5950, 5960.

Post-Master’s Required Courses:PSYC 5770, 5799, 6790; at least one of the following each semester: GRAD 6950, 6960; PSYC 5800.

Post-Master’s Social Breadth Requirement. Students select three courses from PSYC 5101, 5120, 5170, 5770, 6730, 6731, 6732, 6733, 6750, 6753, or 6771.

## Public Administration (M.P.A.)

The School of Public Policy offers a graduate program leading to a Master of Public Administration (M.P.A.). The M.P.A program provides students with a dynamic and integrated approach to the field of public management. It prepares students for leadership positions in the public, nonprofit and private sectors. It is accredited by the Network of Schools of Public Policy, Affairs, and Administration (NASPAA). A Fast-Track to the M.P.A. program is also available to currently enrolled University of Connecticut undergraduate students; this program enables students to take graduate level courses while completing their undergraduate degree. Fast-Track students can take enough credits as an undergraduate student to complete the M.P.A. degree in one year. Up to 12 credits of approved graduate coursework included on the student’s undergraduate plan of study can also be used toward the master’s degree as part of the Fast-Track.

### Master of Public Administration Requirements

The M.P.A. degree is comprised of 42 credits. These credits include 24 credits of core coursework (eight courses), 12 credits of electives (four courses), six credits of internship and a zero credit professional development course.

Master of Public Administration Fellows Track. The Fellows track within the M.P.A. degree program is designed specifically to develop sophisticated and conscientious managers who have the needed skills and competencies to be effective leaders. Individuals in public, nonprofit or private sector organizations with at least three years of professional experience are eligible for the Fellows program. Students earn an M.P.A. degree. The Fellows track of the M.P.A. program consists of 36 credits: eight core M.P.A. courses (24 credits), elective credits (12 credits), and a capstone portfolio (zero credit). The M.P.A. program’s internship requirement and the required zero credit professional development course are waived for M.P.A. Fellows.

Master of Public Administration Required Core Courses:PP 5340, 5345, 5361, 5364, 5365, 5370, 5375, and 5376 to total 24 credits.

Focus Area. Students complete 12 credits of electives in areas that support their career goals. Nine credits of electives are used toward a focus area. M.P.A. focus areas include executive leadership (Fellows track only); law and public policy; nonprofit management; public financial management; public policy; state and local government management; social policy; public policy, diversity, and inclusion; survey research; and urban planning. Working with their advisor, students may choose to pursue a more generalist approach and select electives across multiple areas or to create their own focus area.

Internship. Six credits of PP 5390.

## Public Health (M.P.H., Ph.D.)

The Department of Public Health Sciences at UConn Health offers the Master of Public Health (M.P.H.) and Doctor of Philosophy (Ph.D.) degrees. The M.P.H. focuses on Interprofessional Public Health Practice for students anticipating careers working with local Governmental or non-Governmental agencies in delivering essential public health services. The M.P.H. degree integrates coursework on foundational topics in public health and experiential requirements that demonstrate competency as a public health practitioner with elective options on substantive areas of study (e.g., epidemiology, behavioral science, health systems administration, etc.). The Ph.D. degree focuses on the Social and Behavioral Determinants of Health and rigorously prepares individuals for careers in academic and research institutes, federal agencies and private sector business and industry.

Requirements: The M.P.H. and Ph.D. degree requirements conform to all the Graduate School requirements, as well as standards specified by the Council on Education for Public Health (CEPH), an independent agency recognized by the U.S. Department of Education to accredit public health schools and programs.

### Master of Public Health (M.P.H.)

The M.P.H. degree requires completion of 48 graduate credits comprised of 30 required credits for foundational (i.e., required) courses in Public Health. In consultation with program advisors, students will complete three PUBH-elective courses to reflect a topical area of student interest, and either an Integrative Learning Experience consisting of either nine credits of GRAD 5950 or two additional electives along with three credits of PUBH 5499. Students must maintain a cumulative grade point average (GPA) of 3.0. Grades below “B” in any foundational course or “C+” in any elective represent academic deficiencies that require a remediation plan approved by a student’s major advisor and Program Director.

Required courses: PUBH 5403, 5404, 5405, 5406, 5408, 5409, 5411, 5431 and two semesters of 5407.

Substantive Areas of Focus. Elective courses should be selected in consultation with program advisors and reflect a substantive focus on Epidemiology and Biostatistics, Health Administration and Policy, Environmental and Occupational Health or Health Promotion/Disease Prevention.

### Master of Public Health FastTrack (M.P.H.)

A FastTrack (4+1) B.A./B.S. and M.P.H. option is available for highly motivated UConn undergraduate students. The FastTrack allows students to complete their baccalaureate degrees in any UConn-approved discipline and all M.P.H. degree requirements within five years. The FastTrack program is a 14 course, 42-credit opportunity that utilizes distance learning/video conferencing technologies (e.g., iTV) to synchronously link undergraduates with graduate courses offered on the Farmington campus.

Students are accepted into the program as early as their 5th semester of undergraduate study on the basis of their academic performance (a minimum GPA of 3.25), personal background and/or experiences revealing a commitment to the health communities.

While fulfilling requirements of their B.A./B.S. degree, FastTrack students simultaneously complete a maximum of 12 credits of coursework toward the M.P.H. (PUBH 5408, 5409, 5411 and 5431) that may be applicable to both undergraduate and graduate plans of study. During a 5th year of study, students will complete remaining foundational course requirements (PUBH 5403, 5404, 5405, 5406 and two semesters of 5407). In addition, through consultation with program advisors, students will elect to complete either, one PUBH-elective course and GRAD 5950, or three PUBH-electives and PUBH 5499. Students must maintain a cumulative grade point average (GPA) of 3.0. Grades below “B” in any foundational course or “C+” in any elective represent academic deficiencies that require a remediation plan approved by a student’s major advisor and Program Director.

### Doctorate in Public Health (Ph.D.)

This program rigorously prepares public health professionals, scholars, and research scientists needed in a wide variety of settings to meet the health challenges of the 21st century. The degree reinforces foundational principles of public health with theoretical underpinnings and methodological techniques of population health research. The Ph.D. degree requires completion of 60 credits beyond the Master’s degree, consisting of 45 credits in coursework and 15 credits of Doctoral Dissertation Research. The Ph.D. in Public Health does not have a related area or foreign language requirement. Options for focused work in Public Health are many, although the areas of research listed below are emphasized.

Social and Behavioral Health Sciences. Explores interpersonal and institutional influences on individual and community health, with attention to design and evaluate of interventions for improving health outcomes.

Occupational Health Sciences. Offers students grounding in theory and methodology as well as specialized instruction that builds knowledge of the broad range of occupational exposures and their influences on health, illness and injury, and interventions to improve these outcomes.

Chronic Disease Epidemiology. Develops expertise in cancer epidemiology and prognosis, public health genetics, and psychiatric epidemiology.

Foundational Knowledge:PUBH 5406 or 5460; 5434 or an advanced statistical elective; 5436 or an advanced epidemiology elective; 5453; and 6496. A student must maintain a cumulative grade point average (GPA) of 3.0 with no grade below a “B-.”

Population Research Methods: With permission of a student’s advisory committee.

Biostatistics Electives.With permission of a student’s advisory committee.

Epidemiology Electives.With permission of a student’s advisory committee.

Doctoral Dissertation Research: 15 credits of GRAD 6950 or 6960.

## Public Policy (M.P.P.)

The School of Public Policy offers a graduate program leading to the degree of Master of Public Policy (M.P.P.). The M.P.P. program provides students with the analytic and quantitative skills necessary to design, analyze, and evaluate the success of policies. The M.P.P. program is centered on the analysis of real-world problems, combining theory, quantitative methods, and practical applications in policy analysis and program evaluation. A Fast-Track to the M.P.P. program is also available to currently enrolled University of Connecticut undergraduate students; this program enables students to take graduate level courses while completing their undergraduate degree. Fast-Track students can take enough credits as an undergraduate student to complete the M.P.P. degree in one year. Up to 12 credits of approved graduate coursework included on the student’s undergraduate plan of study can also be used toward the master’s degree as part of the Fast-Track.

### Master of Public Policy Requirements

The M.P.P. degree is comprised of 42 credits. These credits include 24 credits of core coursework (eight courses), 12 credits of electives (four courses), six credits of internship and a zero credit professional development course. The curriculum is outlined below.

Required Core Courses: PP 5314, 5331, 5340, 5342, 5345, 5347, 5375, and 5376 to total 24 credits.

Focus Area. Students complete 12 credits of electives in areas that support their career goals. Nine credits of electives are used toward a focus area. M.P.P. focus areas include law and public policy; leadership and public management; nonprofit management; public financial management; public policy, diversity, and inclusion; social policy; state and local government management; survey research; and urban planning. Working with their advisor, students may choose to pursue a more generalist approach and select electives across multiple areas or to create their own focus area.

Internship. Six credits of PP 5390.

## Quantitative Economics (M.S.)

The Department of Economics offers a Master of Science in Quantitative Economics (MSQE). The MSQE program is a professional degree that combines training in economic theory with training in quantitative methods/tools that can be used to analyze economic and other data, including “big data.”

### Master of Science Requirements

At least 30 credits maintaining at least a “B” average. These 30 credits must come from required MSQE core courses.

Required Core Courses: ECON 5201, 5202, 5301, 5311, 5312, 5317, 5318, 5321 as well as two graduate courses in Economics from the following list: ECON 5314, 5315, 5322, 5323, 5326.

Optional Courses: ECON 5501 and 5502.

##  Regenerative Engineering (M.S.)

The Master of Science (M.S.) in Regenerative Engineering program is intended to train a new transdisciplinary workforce for Regenerative Engineering. Regenerative Engineering is a new field defined as the convergence of advanced materials science, stem cell science, physics, developmental biology and clinical translation for the regeneration of complex tissues and organ systems. The master program is administrated by the Department of Chemical and Biomolecular Engineering and the Department of Materials Science and Engineering at the University of Connecticut.

**Requirements:** The M.S. in Regenerative Engineering requires a minimum of 30 credits. The credits include: 21 credits of advanced course work and successful completion of a thesis research (Plan A). Thesis research is equivalent to nine credit hours. The thesis must be an original and significant contribution to the field of regenerative engineering and related science and must be defended orally according to Graduate School requirements.

**Core Courses (15 credits):** CHEG 5013, 5352, 5373; MSE 5001, 5700.

**Elective Courses:** A total of six elective credits are required. Students will choose from a list of approved courses including, but not limited to: BME 5000, 6086; CHEG 5358, 5395; CSE 5800, 5810, 5815; MSE 5322, 5336. Students may request permission from the Advisory Committee and the Program Director to enroll in an elective that is not on the list of approved courses.

## Social Work (M.S.W., Ph.D.)

The School of Social Work offers two graduate degrees: A Master of Social Work (M.S.W.) and a Doctor of Philosophy in Social Work (Ph.D.). The education program leading to the M.S.W. degree covers two academic years beyond the bachelor’s degree. A minimum of 60 credits are required for the degree, 42 of which are obtained in classroom courses and 18 of which are in the form of field education. Courses and fieldwork are taken concurrently. The curriculum of the School is formed by an integrated sequence of foundation and advanced content, taken both in the classroom and field education. Upon application to the program, applicants must choose from three concentrations, Community Organizing (CO), Individuals, Groups and Families (IGFP), or Policy Practice (POPR), one of which will be the focus of the advanced content. The goal of the doctoral program in Social Work is to equip future social work leaders with the expert scholarly and research skills needed to provide intellectual leadership and direction to the profession. The program provides a rigorous curriculum designed to prepare social workers for careers as faculty in colleges and universities and as researchers. The curriculum reflects the particular attention given to the unique role of theory and research in the traditions of professional social work in relation to applied practice and to knowledge building.

### Master of Social Work Degree Requirements

Foundation courses required of all students: BASC 5300, 5333, 5350, 5362, 5390, 5391; FED 5301, 5302, 5351, 5352. Below are the advanced content by concentration requirements.

Community Organizing Concentration Requirements:CORG 5300, 5301, 5353, 5354, 5370; FED 5310, 5311; POPR 5310, 5312; RSCH 5341 or 5342; six credits of electives.

Individuals, Groups and Families Concentration Requirements: FED5310,5311**;** IGFP 5301, 5302, 5303; IGFP 5345, or 5346, or 5342, or SPTP 5318; IGFP 5353, 5354; RSCH 5341 or 5342; nine credits of elective courses.

Policy Practice Concentration Requirements:FED 5310, 5311; POPR 5300, 5301, 5302, 5310, 5311, 5312; RSCH 5341 or 5342; six credits of electives.

Advanced Standing.Candidates accepted as Advanced Standing students will have to complete 35 credits as a full-time matriculated student. Course requirements are listed below. This program begins in mid-July where a total of five credits are completed. After completion of the summer courses students will complete an internship and field seminar (560 hours, nine credits) as part of the advanced year, along with required courses and electives.

**Advanced Standing Summer Session Requirements:** Three credit Advanced Concentration course; one credit Skills Laboratory; one credit Special Populations course.

**Advanced Standing Fall and Spring Semester Requirements:** Nine credits IGFP; nine credits CORG and POPR; three credit Additional Research course; eight credits Advanced Field Education; one credit Advanced Field Advising Seminar; nine credits IGRP electives; six credits CORG and POPR electives, totaling 35 credits**.**

**Community Organizing Concentration Advanced Standing Requirements.** Summer Session:BASC 5301; CORG 5300, 5340. Fall and Spring: CORG 5301, 5353, 5354, 5370; FED 5310, 5311; POPR 5310, 5312; RSCH 5341 or 5342; six credits of electives.

**Individuals, Groups, and Families Concentration Advanced Standing Requirements.** Summer Session: BASC 5301; IGFP 5301, 5340. Fall and Spring: FED 5310, 5311; IGFP 5302, 5303, 5353, 5354; one of IGFP 5342, 5345, 5346, or 5365; RSCH 5341 or 5342; six credits of electives.

**Policy Practice Concentration Advanced Standing Requirements.** Summer Session: BASC 5301; POPR 5300, 5340. Fall and Spring: FED 5310, 5311; POPR 5301, 5302, 5310, 5312, 5353, 5354; RSCH 5341 or 5342; six credits of electives.

**Advanced Standing Courses Waived:** BASC 5333, 5350, 5362, 5390, 5391; FED 5301, 5302, 5351, 5352.

**Bachelor of Social Work Exemption.** Students who received a Bachelor of Social Work (B.S.W.) within six years from an undergraduate school accredited by the Council on Social Work Education will be automatically exempt from up to six courses if a grade of “B” or better was earned and course content is equivalent.

### Joint Program with Yale Divinity School

In conjunction with the Yale University Divinity School in New Haven, Connecticut, the School of Social Work offers a program in which students may earn the MSW degree from UConn and the M.Div. degree from Yale in four years instead of the five years required when these programs are taken separately. Yale University will accept up to nine elective credits earned in UConn’s MSW program. Students in the joint program will have their MSW elective credits waived (six credits for CO and POPR students and nine credits for IGFP students), thereby reducing the required MSW credits from 60 to 54 for CORG and POPR students and from 60 to 51 for IGFP students. Students should consult with the School of Social Work Joint Degree liaison to discuss the approval of their Yale elective coursework. Students must be enrolled concurrently in both schools and earn both degrees simultaneously to benefit from this arrangement.

### Doctor of Philosophy Requirements

The course of study for the Doctor of Philosophy (Ph.D.) in Social Work consists of 56 graduate credits. Eleven required courses totaling 35 credits provide the students with competency in advanced research methods and statistics, and social science theories. The remaining courses include two elective courses totaling six credits in related disciplines and 15 credits of dissertation research.

**Doctor of Philosophy Required Courses:** SSW 6410, 6411, 6412, 6413, 6414, 6415, 6420, 6425, 6435, 6445, 6460.

## Sociology (M.A., Ph.D.)

The Department of Sociology offers both a Master’s of Arts (M.A.) degree and a Doctor of Philosophy (Ph.D.) degree. The M.A. degree can be earned under either Plan A (thesis) or Plan B (non-thesis) options. Students in the Ph.D. program enroll concurrently in the Plan A M.A. program, which is available only to these students. The Plan B M.A. is available only to UConn students who are admitted to the Department’s accelerated (4+1) program (and to Ph.D. students who do not wish to continue in the Ph.D. program).

###  Accelerated (4+1) Master of Arts in Sociology

The accelerated (4+1) M.A. in Sociology is designed for UConn undergraduates who want to develop the training and skills needed to pursue careers focused on social justice. The program allows students to specialize in one of four available tracks: (1) Gender, Sexuality, and Social Justice; (2) Racism Studies and Inequality; (3) Social Change and Social Justice; and (4) Research Methods. The program requires a total of 30 graduate credits. Up to 12 credits of the required graduate coursework may be used toward both the B.A. and M.A. Plans of Study.

**Requirements:** To earn the M.A. degree through the 4+1 program, a student must meet the following requirements.

**Required Core Graduate Courses:** 12 credits of core courses: SOCI 5201, 5203, 5231, and 5895.

**Track Courses:** nine credits (three courses) from one of the following tracks, chosen in consultation with the student’s major advisor.

Gender, Sexuality, and Social Justice: SOCI 5601, 5602, 5604, 5613, 5614, 5651.

Racism Studies and Inequality: SOCI 5501, 5505, 5515, 5421, 5613.

Social Change and Social Justice: SOCI 5801, 5806, 5809, 5821, 5825, 5829.

Research Methods: SOCI 5210, 6203, 6205, 6231.

**Electives:** nine additional credits of graduate-level courses in Sociology, at least three of which must be from one of the tracks above other than the student’s chosen track. In the student’s +1 year, they may, with the consent of their advisor, substitute an approved course in another department for three credits of elective sociology coursework.

### Master of Arts in Sociology (with concurrent enrollment in Ph.D. program)

Most Ph.D. students enter with a Bachelor of Arts (B.A.) and obtain the M.A. in Sociology in the first two years of the program, then proceed to the Ph.D. Students who are admitted with the M.A. in Sociology from another institution will typically finish the Ph.D. program in a shorter time. Students entering with the M.A. from other universities may have to take some required coursework in order to cover equivalent material as students who attained their degrees at the University of Connecticut. Students entering with graduate degrees in disciplines other than Sociology must fulfill the requirements of both the M.A. and Ph.D.

In addition to Graduate School requirements, when completed in conjunction with enrollment in the Ph.D. program, the M.A. in Sociology requires a minimum of 37 credits. Fifteen credits are Sociology graduate elective courses. Nine credits are GRAD 5950 Master’s Thesis Research. The other credits are from the following required courses.

Required Courses:SOCI 5001, 5201, 5203, 5231, and 5251.

Plan A.In addition to 37 Sociology credits, students must also complete a M.A. thesis, which includes submitting a written thesis and passing a formal M.A. thesis defense.

Plan B (Terminal). Students who do not wish to continue in the program may submit a portfolio instead of a M.A. thesis, which constitutes a final examination for Plan B students. This should consist of a minimum of three papers that together illustrate a command of sociological theory, research methods, and at least one substantive area. Students cannot move on to the Ph.D. phase of the program if they take the Plan B option.

### Doctor of Philosophy in Sociology

The Ph.D. requires a total of 33 credits beyond the Master’s in Sociology degree. These credits include: six credits of required Sociology courses (SOCI 6203, 6231), 12 credits of Sociology electives, and 15 credits of GRAD 6950 (Doctoral Dissertation Research). Students may also take up to six credits of seminars outside of the department, but these may not be used in place of the Sociology elective credits.

General Examination.Students must demonstrate mastery over a particular area of sociological expertise. The General Examination has both a written and oral component.

Dissertation Proposal.Students must also complete a dissertation proposal, which includes submitting a written proposal and passing a formal dissertation proposal defense.

Dissertation.The dissertation has both a written and oral component.

## Speech, Language, and Hearing Sciences (M.A., Ph.D., Au.D.)

The Department of Speech, Language, and Hearing Sciences (SLHS) offers three graduate degrees: Master of Arts (M.A.), Doctor of Audiology (Au.D.), and Doctor of Philosophy (Ph.D.). The M.A. and Au.D. degrees are professional degrees that prepare students for clinical certification and State licensure in the fields of speech-language pathology (SLP) and audiology. Also, through an arrangement with the Neag School of Education, students enrolled in the M.A. program in SLHS can fulfill requirements leading to certification as an SLP for employment in Connecticut’s public schools. The M.A. is a two-year program (four semesters plus one summer) with the option of a three-year program (six semesters plus one summer) for students without pre-professional undergraduate coursework in SLHS. The Au.D. degree is a four-year post-baccalaureate program that includes three years of coursework and clinical experiences plus a one-year equivalent full-time residency. The M.A. and Au.D. degrees are accredited by the Council on Academic Accreditation in Audiology and Speech-Language Pathology. The Ph.D. program prepares students for research and teaching careers in SLHS. Students can specialize in areas including normal processes of speech, language and hearing, disorders of speech, language and hearing both developmental and acquired, and the prevention, treatment or management of these disorders.

### Master of Arts Requirements

In addition to the Graduate School requirements, a M.A. degree in Speech, Language and Hearing Sciences requires satisfactory completion of a minimum of 47 credits and 375 hours of clinical practicum while maintaining at least a “B” in both academic coursework and clinical work. Students must complete all required courses and clinical practicum in order to obtain both their M.A. degree, and their Certificate in Clinical Competency through the American Speech-Language-Hearing Association. The first year of the two-year M.A. program consists of required graduate courses and clinical practicum, and the first year of the three-year M.A. program consists of required pre-professional undergraduate courses. During the final year, students complete the remaining required courses, and either GRAD 5950 or SLHS 5374. Students are also required to complete an additional six credits of course work in an area of interest. At least three of the credits must be from graduate courses taken within the SLHS department. The Master of Arts required courses are listed below.

Master of Arts Clinical Practicum. SLHS 5336 each semester and SLHS 5302 in May Term/Summer I.

Master of Arts Language Disorders Required Courses:SLHS 5342, 5343, 5348, 5349, and 5378.

Master of Arts Speech Disorders Required Courses:SLHS 5335, 5345, 5346, 5353, and 5359.

Master of Arts Speech Science and Research Required Courses:SLHS 5361, 5377, and 5374 or GRAD 5950.

Master of Arts Area of Interest Courses.In addition to the above courses, allstudents must take six credits of additional coursework in an area of interest as part of their degree requirement. These courses may vary in topics such as disabilities, diversity and multiculturalism, education, and medical speech language pathology to list a few. These courses are typically offered within the department (e.g., SLHS 5123, SLHS 5376, SLHS 5380).

### Doctor of Audiology Requirements

It is expected that students will earn a minimum of 1,820 clinical hours during full-time enrollment in the graduate program and a minimum of 75 credit hours. Didactic coursework and clinical experiences are designed to allow students to acquire knowledge and skills in six broad areas of audiology: foundations of practice, prevention/identification of hearing loss and balance disorders, assessment hearing and balance disorders, (re)habilitation of hearing and balance disorders, advocacy/consultation, and education/research/administration. Students are also required to complete a capstone research project and pass qualifying examinations in years one and three of the program.

**Doctor of Audiology Required Courses:** SLHS 5321, 5322, 5323, 5324, 5325, 5326, 5344, 5351, 5354, 5362, 5369, 5372, 5373, 5375, 5400, 5401, 6401, 6402, 6410. Students are required to take three credits of a graduate level statistics course such as EPSY 5309 and three elective credits also at the graduate level. Selection of the appropriate statistics and elective courses should be made in consultation with the major academic advisor.

Students are required to register for clinical practicum (SLHS 5337) for each semester of the first three years of the program beginning in the second semester of study. Students are required to register for GRAD 6930 or 6998 in their final year of study when they complete their clinical externship. Students are also required to complete a capstone research project taking a minimum of six credits of SLHS 6319 (Research Practicum) and pass qualifying examinations in years one and three of the program.

### Doctor of Philosophy

Specific course requirements for the Ph.D. in SLHS are determined by the student’s advisory committee consistent with the minimum requirements specified by the Graduate School and the Department as noted below. SLHS does not have a foreign language requirement. Doctor of Philosophy requirements are listed below.

Foundations Courses. Students are expected to take coursework in an area of concentration. The coursework will be selected in consultation with the academic advisor and the advisory team.

Research Methodology Required Courses:SLHS 6368 or EPSY 6103; nine credits in research design, statistics, and possibly computer programming. Courses may be taken in Educational Psychology, Psychology, Statistics or other departments. Each department has a recommended three-course sequence (e.g., EPSY 5605, 5607, 5610 or 5613; STAT 5505, 5605, 5665). In addition, students will enroll each semester for at least one credit of research practicum, SLHS 6319.

Laboratory Rotations.To obtain experience in different research methodologies, each student will be required to complete two laboratory rotations, lasting a minimum of one semester. During the rotation, students will enroll in SLHS 6319. The laboratory rotation must be approved by the student’s adviser.

Projects. Students will be required to complete two research projects during their first two to three years of the program (first and second projects) and may be connected with a laboratory rotation. These projects will involve experiment design, data collection, analyses, preparation of a potentially publishable manuscript or grant application, and an oral presentation of the research findings.

General Examination. The general examination may be taken when 75% of the content coursework is completed. The examination format may vary but it will consist of both written and oral components. Both portions must be passed within two attempts.

Prospectus. Students must submit a prospectus in the form of a grant application. This is typically done at the end of the third year of the program, after successfully passing the general examination.

Dissertation. Consists of written and oral components that reflect the student's focused area of research.

## Sport Management (M.S.)

The Master of Science (M.S.) in Sport Managementprepares students in the theoretical, research, and applied dimensions of this field of study. The M.S. degree requires students to select a thesis, capstone project or internship option. Students selecting to do a thesis must complete 24 credit hours (eight courses) of coursework and nine credit hours of thesis research. Students selecting the internship or capstone project options must complete 27 credit hours (nine courses), a comprehensive exam and a six credit internship or capstone project following the completion of all coursework.

Required Courses:Three hours of Research Methods taking EPSY 5601. (Additional research courses recommended only for students selecting the thesis option. These credit hours could count as electives). EDCI 6000, EPSY 5605, or EPSY 5607.

Sport Management Major Courses: EDLR 5300, 5315, 5325, 5380, 5385, totaling 15 credits.

Electives. Students earn six credits of two 5000 level or above courses, taken from outside the Sport Management Major courses, to be discussed with major advisor. EDLR 5518 may be taken as an elective.

Capstone Option One (Non-Thesis Option):EDLR 5091, Internship, for six credits, or EDLR 5085, Research Project, for six credits.

Capstone Option Two (Thesis Option):GRAD 5950, Thesis Research, for nine credits.

## Statistics (M.S., Ph.D.)

The Department of Statistics offers programs leading to Master of Science (M.S.) in Statistics and Doctor of Philosophy (Ph.D.) degrees. (The Department also offers a Professional M.S. in Biostatistics). All programs include training in statistical application and theory, and give students sufficient flexibility to pursue their special interests as well as time to take courses in other departments at the University of Connecticut.

### Master of Science

The M.S. in statistics program normally requires 31 credits. While it is possible to complete the M.S. degree within a year, most students will need three to four semesters. The core courses of the program cover mathematical statistics, linear models, design of experiments, and applied statistics. The program also requires one to two courses in areas of application. The plan of study may be formulated with related work in almost any area, e.g., Biology, Economics, Nutrition, and Psychology. Students are encouraged to participate in statistical consulting projects done by members of the Department. To make acceptable progress through the program, three semesters of calculus and a semester of linear algebra in college are necessary. A background in statistics will be helpful, but is not assumed.

**Master of Science Required Courses:** STAT 5505, 5605, 5585, 5685, 5725, 5515, and 5095. The elective courses normally should consist of four additional courses, two to three in statistics and one to two from other departments. The final requirement is passing the Master’s Examination which is a written test on basic understanding of course materials. There is no thesis requirement. In order to be considered for a possible switch to the Ph.D. program or for financial support, a M.S. in Statistics student must first clear the Ph.D. Qualifying Examination.

### Doctor of Philosophy

The Ph.D. program emphasizes development of the ability to generate novel results in statistical methods, statistical theory, or probability. Individuals with a Bachelor’s degree in any major, with a background in mathematics and statistics are encouraged to apply. The course work typically consists of at least 16 graduate level courses that cover a wide range of topics, including mathematical statistics, linear models, statistical inference, applied statistics, real analysis, and probability. After completing the necessary course work and a sequence of examinations, a Ph.D. candidate must complete a dissertation that makes an original contribution to the field of statistics or probability. The dissertation may be predominantly development of novel statistical methodology for an area of application.

Doctor of Philosophy Requirements. For students entering the program after a Bachelor’s Degree, typically 16 to 18 courses are required. An individual plan of study is developed by the student and their Advisory Committee. Knowledge of a sequence of core courses is required for all Ph.D. students. These courses are STAT 5095, 5505, 5515, 5585, 5605, 5685, 5725, 5735, 6315, 6325, 6515, and 6894, for a total of 33 credits for core courses. Additional credits can be earned from the list of elective courses. In general, Ph.D. students are required to elect one to two courses from other departments. However, it is sufficient to take one graduate level course from the Department of Mathematics. Each elected course must be approved by the major advisor of a student. Under certain circumstances, the major advisor can exempt the student from the above requirement, if the student has had internships or Research Assistantships in interdisciplinary areas. The Department has no requirement on foreign languages. The first formal requirement for the Ph.D. degree is passing the Ph.D. Qualifying Examination which is a written test on certain basic courses. The second requirement is passing the General Examination that consists of an oral test on aspects of Applied Statistics, Linear Models, Probability Theory and Statistics and a presentation of a thesis research proposal. The preparation of a dissertation then follows which must present an original contribution to the general area of Statistics and/or Probability. The final requirement is a defense of the Ph.D. dissertation before an audience of interested members of the Department. The Department expects every Ph.D. student to strive to finish their study within four years. For students arriving without a M.S. degree in Mathematics or Statistics, the Department may provide up to five years of financial support. For those arriving with such a degree, the Department may provide up to four years of financial support.

## Surgical Neurophysiology (M.S.)

The Master of Science in Surgical Neurophysiology is a one-year professional master’s program designed to provide students with the knowledge and clinical training required to become a board-certified Surgical Neurophysiologist. Courses in neuroanatomy, neurophysiology, neural signal acquisition, and the application of neurophysiological measurements in the surgical environment are covered in a year-long program of study, beginning in the summer. A total of 32 credits are required. In addition, students complete a clinical practicum. After completion of the program and participation in 100 surgical cases (during or after their clinical practicum), students will be eligible to participate in the national exam for Certification in Neurophysiologic Intraoperative Monitoring (CNIM Certification) conducted by the American Board of Registration of Electroencephalographic and Evoked Potential Technologists (ABRET).

### Program Requirements:

**Required Courses (20-26 credits):** PNB 5101, 5102, 5103, 5106, three to nine credits of PNB 5104, and four credits of PNB 5105.

**Electives (6-12 credits):** Students select the remaining required credits from the following: PNB 3251, 3275, 4400, or any PNB Graduate level courses; NURS 3100, 3110, 3120; PSYC 5228; and SLHS 5322, 5375; no more than six credits from courses at the 3000-4000 level. A minimum of 26 credits needs to be from PNB courses including the Required Courses.

Students must also complete a clinical practicum that includes a minimum of 250 clinical contact hours in mentored surgical cases.

## Survey Research and Data Analysis (M.A.)

The School of Public Policy offers an online Master of Arts (M.A.) in Survey Research and Data Analysis. The program prepares survey research professionals to gather data about attitudes, opinions, behaviors, or demographics and analyze that information to answer complex questions about society. The program delivers high-quality instruction in both traditional and cutting-edge methodologies, qualitative and quantitative data collection, and data analysis techniques through a robust online delivery platform.

### Master of Arts Requirements

Students take a total of 30 credits.

Required Core Courses (24 Credits): PP 5332, 5376, 5377, 5379, 5383, 5341 or 5385, 5386, and 5389\*.

**Electives (Six Credits):** Students without two years of relevant work experience must complete three-credits of PP 5390 Supervised Internship in lieu of three-credits of electives.

## Systems Genomics (Ph.D.)

The Institute for Systems Genomics offers a Doctor of Philosophy (Ph.D.) in Systems Genomics.\* A Ph.D. in Systems Genomics trains students to take leadership roles in basic research, clinical research, program management and consultation at the Ph.D. level in the areas of Genome Sciences and Personalized Genomic Medicine. Systems Genomics students will receive specialized training in one or more of the areas listed below.

**Integrated Life Sciences.** Mechanisms of inheritance; genetics and genomics of human disease; stem cell biology; molecular biology including genomic technology; neurobiology and behavioral genetics and genomics.

**Integrated Mathematics, Statistics and Computer Science.** Computational methods in systems biology; bioinformatics analysis of high-throughput data; such as Next-Generation Sequencing (NGS) or mass spectrometry data; facility with data bases relevant to systems genomics and network biology.

**Integrated Personalized Health Care and Ethical, Legal and Social Implications (ELSI).** Interdisciplinary competency in human genomic diagnostics, laboratory diagnostics, health care ethics, and regulatory issues in the clinical laboratory.

### Requirements for Ph.D. in Systems Genomics

Except in special cases, Ph.D. candidates will complete required coursework within the first two years of enrollment in the program. The first year of coursework will focus on “Foundations of Systems Genomics.” The second year will focus on “Advanced Topics in Systems Genomics.” Specific course requirements are determined by the student’s Advisory Committee consistent with the minimum requirements specified by the Graduate School. The Ph.D. in Systems Genomics does not have a related area or foreign language requirement, unless one is specified by the Advisory Committee.

\* Prior to submitting an application to this program, interested applicants should contact the Systems Genomics program administrator.