I. 500/600-level courses

New Courses

1) College of the Environment and Life Sciences

EVS 540X Exploring the Dimensions of Corporate Responsibility
This course explores how businesses address environmental and social issues, and addresses their environmental impact and practices through a multilateral assessment of a business's economic, environmental and social activities. Pre: Graduate standing.

Additional Curricular Matters

1) Interdisciplinary Neuroscience Program

Neuroscience – Proposed Requirements

M.S., Ph.D.
401.874.4233, uri.edu/gsadmis/inp
The Interdisciplinary Neuroscience Program involves faculty from the departments of Biological Sciences; Biomedical and Pharmaceutical Sciences; Chemistry; Cell and Molecular Biology; Communicative Disorders; Electrical, Biomedical, and Computer Engineering; Mechanical, Industrial, and Systems Engineering; Psychology; and Physical Therapy. It is administered by the Graduate School and an executive committee appointed by the dean of each participating college.

Executive Committee: Professor Zawia, *chair*, Professors Gabriele Kass-Simon, Lisa Weyandt, Associate Professors Besio, Mahler and Seeram, Adjunct Professor Mosley Austin.
Faculty: Professors Dufresne, Faghri, Faust, Hufnagel, Kass-Simon, Kay, Kumaresan, Ohley, Sun, Webb, Weyandt, Willis, and Zawia; Associate Professors Agostinucci, Besio, DeBoef, Goren, He, Kim, Kovoor, Mahler, Martin, Seeram, and Sun; Assistant Professors Leveilee and Worthen; Adjunct Professors Anagnostopoulos, DiCecco, and Mosley Austin.

Specializations
Dementia and aging; central nervous system disorders; vertebrate and invertebrate cellular, molecular, and behavioral neurobiology imaging; and neural engineering.

Master of Science
Admission requirements: GRE general test, a bachelor's degree in the sciences (or related disciplines), two letters of recommendation, a statement of purpose, and transcripts of all previous degrees are required. Applicants are encouraged to specify in their statement of purpose one or more faculty members with whom they are interested in working, and to explain why. Students with deficiencies in undergraduate courses relevant to their Program of Study may be required to take additional courses without program credit.
In general, students will be admitted if they meet the minimum GRE requirements (a combined verbal and quantitative score of 300 in the new system and 1,100 in the old system), a minimum GPA of 3.00, good letters of recommendation, and an acceptable statement of purpose. In exceptional circumstances, the student who falls short may still be considered for admission with further evaluation.

Program requirements: The program requires a minimum of 30 credits: 18-20 in required coursework, 6-9 in thesis research, and 1-6 in electives. Required courses include: NEU 502, 503, 504, PSY 532, as well as at least one credit of NEU 581/582. Two semesters (4-6 credits) of NEU 591 are required, one in the student's primary area of research, and one in a related discipline. Total research credits in NEU 591 and NEU 599 used towards the degree must not exceed 12 credits. Two semesters of journal club (NEU 587 or equivalent), a thesis proposal and successful defense of thesis are required.

Doctor of Philosophy
Admission requirements: Same as for master's degree.

Program requirements: Successful completion of a qualifying examination or an earned M.S. with thesis in an appropriate discipline, a comprehensive examination, and dissertation defense. As the qualifying exam is meant to be equivalent to the M.S. degree, the examination must be taken no later than the first semester following the completion of eighteen credits of coursework. This examination is intended to assess a student's potential to perform satisfactorily at the doctoral level. A minimum of 72 credits is required, 18 to 28 of which may be earned through dissertation research (NEU 699). Up to 30 credits will be accepted for students who have already earned an M.S. degree. Registration in NEU 581 and 582 is required for one year, and successful completion of NEU 502, 503, and 504 are required. PSY 532 (or equivalent) and one additional statistics or computational analysis course (e.g. STA 500, 502, 541, or 545) are required. Two semesters of NEU 591 are required, one in the student's primary area of research, and one in a related discipline. Doctoral students must enroll in journal club (NEU 587 or equivalent) each semester until completing comprehensive exams. In the final semester, a formal presentation of dissertation research is required in 581/582.

Postbaccalaureate Certificate in Neuroscience
A student who does not seek a neuroscience degree, but instead wants official recognition that he/she has specific training and instruction in neuroscience, can receive a Certificate in the Neurosciences.

Admission requirements: A bachelor's degree in any field with a 3.00 GPA or higher. Students already enrolled in a master's or doctoral degree at URI are eligible to apply. Students not in a graduate degree program may also apply.

Program requirements: Students will be required to successfully complete 12 credits of neuroscience coursework including NEU 503.

Neuroscience – former 2012 Requirements

M.S., Ph.D.
401.874.4233, uri.edu/gsadmis/inp
The Interdisciplinary Neuroscience Program involves faculty from the departments of Biological Sciences; Biomedical and Pharmaceutical Sciences; Chemistry; Cell and Molecular Biology; Communicative Disorders; Electrical, Biomedical, and Computer Engineering; Mechanical, Industrial, and Systems Engineering; Psychology; and Physical Therapy. It is administered by the Graduate School and an executive committee appointed by the dean of each participating college.

Executive Committee: Professor Zawia, *chair*, Professors Gabriele Kass-Simon, Lisa Weyandt, Associate Professor Besio, Assistant Professors Mahler and Worthen, Adjunct Professor Mosley Austin.
Faculty: Professors Faghri, Hufnagel, Kass-Simon, Kay, Kumaresan, Ohley, Parang, Sun, Webb, Weyandt, Willis, and Zawia; Associate Professors Agostinucci, Besio, DeBoef, Goren, Kim, Kovoor, Mahler, Martin, Seeram, and Sun; Assistant Professors He and Worthen; Adjunct Professors Anagnostopoulos, DiCecco, and Mosley Austin.

Specializations
Dementia and aging; central nervous system disorders; cellular, molecular, and behavioral neurobiology imaging; and computational intelligence.

Master of Science
Admission requirements: GRE general test, a bachelor's degree in the sciences (or related disciplines), two letters of recommendation, a statement of purpose, and transcripts of all previous degrees are required. Applicants are encouraged to specify in their statement of purpose one or more faculty members with whom they are interested in working, and to explain why. Students with deficiencies in undergraduate courses relevant to their Program of Study may be required to take additional courses without program credit.
In general, students will be admitted if they meet the minimum GRE requirements (a combined verbal and quantitative score of 300 in the new system and 1,100 in the old system), a minimum GPA of 3.00, good letters of recommendation, and an acceptable statement of purpose. In exceptional circumstances, the student who falls short may still be considered for admission with further evaluation.

Program requirements: The program requires a minimum of 30 credits: 18-20 in coursework, 6-9 in research, and 1-6 in electives. Required courses include: NEU 502, 503, 504; PSY 532; as well as at least one credit NEU 581/582. A thesis proposal and successful defense of thesis are required. In the final semester, a formal presentation of thesis research is required in 581/582.

Doctor of Philosophy
Admission requirements: Same as for master's degree.

Program requirements: Successful passage of a qualifying examination or an earned M.S. with thesis in an appropriate discipline, a comprehensive examination, and dissertation defense. As the qualifying exam is meant to be equivalent to the M.S. degree, the examination must be taken no later than the first semester following the completion of eighteen credits of coursework. This examination is intended to assess a student's potential to perform satisfactorily at the doctoral level. A minimum of 72 credits is required, 18 to 28 of which may be earned through dissertation research (NEU 699). Up to 30 transfer credits will be accepted for students who have already earned an M.S. degree. Registration in NEU 581 and 582 is required for one year, and successful completion of NEU 502, 503, and 504 are required. ~~Depending on a student's previous training and experience, certain requirements may be waived at the discretion of the student's dissertation committee and the Graduate School. Students may also be required to take PSY 532 to remedy deficiencies in background~~. In the final semester, a formal presentation of thesis research is required in 581/582.

Postbaccalaureate Certificate in Neuroscience
A student who does not seek a neuroscience degree, but instead wants official recognition that he/she has specific training and instruction in neuroscience, can receive a Certificate in the Neurosciences.

Admission requirements: A bachelor's degree in any field with a 3.00 GPA or higher. Students already enrolled in master's or doctoral degrees at URI are eligible to apply. Students not in a graduate degree program may also apply.

Program requirements: Students will be required to successfully complete 12 credits of neuroscience coursework including NEU 503.

Proposed changes
to the
Master's Degree and Ph.D. programs
in
Computer Science

Pages 2 and 3 of this document contain the proposed revision to the Master's Degree program and the Ph.D. program in Computer Science.

For convenience, pages 4 through 6 contain, side by side, the current version in these programs from the URI catalog (pp. 108-109), and the revised version of these same programs.

Rationale for the proposed changes

The last revision of our graduate programs goes back to more than 10 years. In a very fast-changing field, the intent of this latest revision of our graduate programs' requirements is to offer more flexibility to our graduate students.

The main change is in the grouping of the courses that are part of the distribution requirements. Our graduate students are required to take courses currently distributed in 7 groups. The largest one, the applications group, is the "catch-all" group. The remaining 6 groups are being reorganized into 3 areas, which include all of our core courses. With one exception, we have excluded from these 3 core areas all 400-level courses.

Another, simple, change in our Master's Degree program is to remove the current maximum of courses taken at the 400-level. This might, in the case of a program of study including exclusively 4-credit courses, allow a Master's Degree student to take up to one more course at 400-level. Arguably, this could lower the quality of our graduate programs. The elimination of 400-level courses from our core areas, however, will compensate for the possible addition of one 400-level course.

Yet another, minor, change will affect the admission requirement replacing MTH215 and MTH243, currently required, by any calculus-based MTH or STA course.

The remaining changes are mostly editorial to adjust for the changes in the distribution requirements from the original 7 groups to the proposed 3 core areas.

Proposed revision to the Master's Degree and Ph.D. programs in Computer Science

Computer Science

M.S., Ph.D. 401.874.2701

Faculty: Professor Peckham, *chair*; Associate Professor Baudet, *director of graduate studies*. Professors Fay-Wolfe and Lamagna; Associate Professors DiPippo, Hamel, and Hervé; Adjunct Assistant Professors Dickerman, Encarnação, Henry, Ravenscroft, and Stephenson; Professors Emeriti Carrano and Kowalski.

Specializations

Analysis of algorithms, artificial intelligence, bioinformatics, computer algebra, computer graphics, computers in education, cryptography, cybersecurity, databases, data mining, digital forensics, distributed computing, implementation and semantics of programming languages, logic-based programming, parallel computing, real time systems, simulation, sensor networks.

Core areas

For the purpose of describing graduate degree requirements, core computer science courses are grouped into the following core areas:

Mathematical Foundations: CSC 541, 542, 544, 550
Programming Languages: CSC 402, 501, 502
Architecture and Systems: CSC 511, 512, 519

Master of Science

Admission requirements: bachelors degree in computer science or a closely related field. Applicants with a bachelors degree in an unrelated field will be considered provided they have completed course work covering the material in CSC 211, 212, 301, 305, 340 and MTH 141, 142, plus one MTH or STA course for which calculus is a prerequisite. Students may be admitted who have completed only a part of the above course work but they will be required to complete the deficiencies before taking more advanced classes.

The GRE General test is required. A subject test in computer science or a related field is not required but may be considered by the admission committee.

Program requirements: The M.S. curriculum in computer science has three tracks: thesis, nonthesis, and applied nonthesis.

Program requirements for thesis option: 1) at least one course from each of the following core areas: mathematical foundations, programming languages, and architecture and systems; 2) at least five other courses chosen with the approval of the major professor (at least two of these must be approved CSC courses or equivalents); 3) eight credits of thesis.

Program requirements for nonthesis option: 1) at least two courses from mathematical foundations, one course from programming languages, and two courses from architecture and systems; 2) at least three more approved CSC courses or equivalents; 3) at least two more courses chosen with the approval of the advisor; 4) at least one of the ten courses listed above should include writing a substantial paper based on significant independent research; 5) passing a written comprehensive examination.

Program requirements for applied nonthesis option: 1) at least two courses from mathematical foundations, one course from programming languages, and two courses from architecture and systems; 2) at least two more approved CSC courses or equivalents; 3) at least one course should include writing a substantial paper based on significant independent research; 4) an approved concentration in another discipline consisting of a minimum of four graduate courses in the area of concentration; 5) passing a written comprehensive examination.

Approved applied nonthesis option concentrations exist for Computers and Business Management, Computers and Operations Research, and Computers and Statistics. Other concentrations are possible. Students should meet with their faculty advisors to discuss requirements. The department encourages other application areas in the physical, biological, mathematical, and social sciences. Students in the applied track will have an advisor in computer science and an advisor in their application area. Together, these advisors will approve the student’s program of study.

Doctor of Philosophy

Admission requirements: Bachelors degree in computer science or a closely related field. Applicants with a bachelors degree in an unrelated field will be considered provided they have completed course work covering the material in CSC 211, 212, 301, 305, 340 and MTH 141, 142, plus one MTH or STA course for which calculus is a prerequisite. Students may be admitted who have completed only a part of the above course work but they will be required to complete the deficiencies before taking more advanced classes.

The GRE general test is required. A subject test in computer science or a related field is not required, but may be considered by the admission committee.

Program requirements: The student must complete 54 credits of course work beyond the bachelors degree in addition to 18 credits for the doctoral dissertation. A student entering the program with an M.S. degree in computer science or a related area may be granted up to 30 credits toward the Ph.D. in computer science.

Students must complete two courses from mathematical foundations, one course from programming languages, two courses from architecture and systems, plus three more approved CSC courses or equivalents. Other courses must be selected in order to meet the 54-credit minimum and will be selected in consultation with the student's advisor or major professor.

Students must take a comprehensive examination, which is composed of a written examination and an oral examination. The written examination, which will be held at least once a year, covers the three core areas listed above. Success in the written examination is conditional upon obtaining passing grades in all areas, and is a prerequisite for taking the oral examination. Typically, a student would be expected to take the comprehensive examination within two years after joining the program. The objective of the oral examination is for the student to present an intended research program and demonstrate satisfactory knowledge and understanding of the scientific literature of the corresponding research domain. A candidate whose comprehensive exam performance is deemed as failing by the Computer Science Graduate Committee may, with the recommendation of the committee and the approval of the Graduate School, be permitted one re-examination, to be taken no sooner than four months and no later than one year after the initial examination.