

The Computer Science & Engineering Graduate Programs

Steven A. Demurjian, Director, Graduate Studies

Overview of the Computer Science & Engineering Graduate Programs

The Computer Science & Engineering Department offers MS and Ph.D. degrees for full-time and part-time students. Our graduate population currently numbers approximately 100 students, with 60 Ph.D. and 40 MS students pursuing their degrees. Since 1994, we have graduated 70 Ph.D. and 275 MS students. Our faculty have a broad range of research interests including: distributed computing, algorithms, theory, security, cryptography, performance modeling, reliability, networking, optimization, bioinformatics, data mining, databases, software engineering, computer architecture, computational geometry, image processing, artificial intelligence, etc.

The Applications Process

To be admitted to the MS program in Computer Science and Engineering at the University of Connecticut as a regular (i.e., non-provisional) student, the following basic requirements must be met: bachelor's degree; cumulative undergraduate record that is equivalent of at least a B average; and, General Test portion of the Graduate Record Exam (GRE). In addition, the applicant should possess the equivalent of an undergraduate CSE, CS, or CompE degree. Admission to the Ph.D. program in Computer Science and Engineering is normally open only to those students with an M.S. in CSE, CS, or CompE; a student with only a bachelor's degree will be considered if he/she has an outstanding/exceptional record. In both cases, the University requires TOEFL for international applicants. The admissions process is multiple phase. First, the CSE Graduate Program Committee reviews applications (around 200 per year) and identifies those that meet minimum standards (around 70-80 per year). Second, these applications are made available to CSE faculty for their review; a student must be accepted as an advisee by a CSE faculty member for admission. We accept approximately 25-30 new students each academic year.

The M.S. Program

The M.S. program in CSE (and at UConn, in general), has two options, Plan A (thesis) and Plan B (non-thesis). Each of these programs require a total of 27 credits, with the thesis counting for 9 credits in the Plan A program. The Plan A program allows a student to combine individual study with generalized course work. The requirements for this degree are: a minimum of six graduate courses (300-level courses); an oral presentation of a thesis research proposal; a master's thesis; and, an oral presentation of thesis work. The Plan B master's program is coursework based. The minimum requirements for this program are: nine graduate courses or the equivalent (see below), and a recommendation for project-based or independent work via CSE320 (independent study) and CSE367 (research laboratory in CSE). The selection of the courses that make up either program of study is the responsibility of the student and the student's advisory committee. Graduate courses taken outside of CSE are also allowed, and we have a number of student who have include business, math, and ECE courses for their programs.

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The Ph.D. Program

The Ph.D. program is designed to prepare a student for a career in teaching and research. As such, it requires a considerable amount of self-directed study and independent research. Only a limited number of students can be accepted into the program each year. Therefore, only those students who have demonstrated the potential to carry out a demanding program at this level are admitted. The Ph.D. program is individually designed for each student. It requires very close cooperation between the student and his or her research advisor. Therefore, to continue beyond the first year of the Ph.D. program, a student must define his or her area of research and obtain a faculty advisor who will agree to supervise the dissertation research. Doctoral study must represent a minimum of two years full-time study beyond the M.S. and at least one year of full-time study must be completed at the Storrs campus. A Ph.D. student (with an M.S. degree in Computer Science and/or Computer Engineering) will normally take eight graduate courses as part of the formal Plan of Study. The Ph.D. program requires that you successfully complete the following major milestones in CSE:

- **Ph.D. Paper Review Examination:** This examination requires the full-time doctoral student to select two papers (one journal, one conference), summarize them, and present a detailed discourse of their content which includes a critique of their work to demonstrate a understanding of research prior to continuing their studies.
- **Ph.D. General Examination:** The Ph.D. General Examination is made up of two major parts, written and oral examinations. The written exam is administered by the student's advisory committee, after the completion of all coursework, and in consultation with appropriate CSE faculty.
- **Ph.D. Dissertation Proposal:** The Ph.D. dissertation must make a significant contribution to the computer science and engineering discipline. The selection of a dissertation topic in consultation with the advisor who supervises the research effort is the most critical part of the Ph.D. program. A general area of research is usually selected during the first year of Ph.D. study. After selection of a research area has been approved, an initial investigation of the relevant literature in the area is undertaken to establish necessary background information and to define the exact problem to be studied. The initial investigation of the relevant literature in the area will culminate in the preparation of a dissertation proposal. It is expected that the student will work closely with his or her major advisor while preparing the proposal. Acceptance of this proposal by the student's advisory committee must be obtained before the student begins the proposed research.
- **Ph.D. Dissertation and Defense:** The final draft of the Ph.D. dissertation must be presented to the advisory committee at least one month before the final copy is due in the graduate school. In writing the dissertation, it is imperative that the student works closely with his or her major advisor. Experience has shown that many revisions of the dissertation are needed before the final draft copy is ready for presentation to the advisory committee.
- **Ph.D. Publication Requirement:** All doctoral students are required to publish at least 3 articles in full-length refereed conference venues prior to completion.

Under normal conditions it is expected that any on-campus student will complete all the work for the Ph.D. within four years of study after finishing the MS program.