Emphasis - Computer Science

M.S. in Engineering Science

Description

The M.S. in engineering science is offered in a number of emphasis areas: aeroacoustics, chemical engineering, civil engineering, computational hydroscience, computer engineering, computer science, electrical engineering, electromagnetics, environmental engineering, geology, geological engineering, hydrology, mechanical engineering, material science and engineering, and telecommunications.

Minimum Total Credit Hours: 30

Course Requirements

A student must complete the requirements for an emphasis area. For most emphasis areas, the degree may be completed as a:

- Thesis option (30-hour program, to include 6 hours of thesis),
- Nonthesis option (30- hour program, to include a minimum of 3 hours of a design-oriented project course), or
- Coursework option (30-hour program, to include a final oral examination in front of a committee, but no written report)

Emphasis - Computer Science

Description

A M.S. in engineering science with emphasis in computer science prepares a student with advanced technical knowledge and communication skills for pursuing a career in industry, engineering research and development, public service, or for doctoral work.

Course Requirements

Students must choose one of the following options and complete the stated degree requirements.

Thesis option

- 24 semester credit hours of approved graduate coursework plus 6 hours of thesis research (by enrolling in Engr 697)
- A written thesis
- A final public oral examination over the work in the thesis area the student must register for the Engr 697 section assigned to the student's research adviser for 6 hours during the program; Engr 697 is an ungraded, variable credit course for which the student may register repeatedly until the thesis is complete. The student must prepare the thesis according to the Graduate School requirements and schedule.

Project option

- 27 semester credit hours of approved graduate coursework plus 3 hours of an independent study research project (by enrolling in Engr 693)
- A written project paper
- A final public oral examination over the work in the research project's area. The M.S. project can be a survey of results in a particular research area, a design and implementation of a known idea, or a thorough study of a research problem.

The student must register for 3 hours in the Engr 693 section assigned to the student's research adviser during the final semester of the program; Engr 693 is a graded course that should only be taken once. The student must prepare the research paper according to department requirements.

Coursework option

- 30 semester credit hours of approved graduate coursework
- A final oral examination in front of a committee, but no written report. The topics of the final oral examination are selected by the graduate committee.

Coursework Requirements

The following coursework requirements apply to the coursework, research project, and thesis options.

Each student must complete the M.S. core coursework requirement; that is, the student must successfully complete the following courses with a grade of B or better:

- Csci 533 Analysis of Algorithms
- Csci 523 Operating Systems or Csci 561 Computer Networks or Csci 530 Computer Architecture and Design
- Csci 525 Compiler Construction or Csci 555 Functional Programming or Csci 556 Multiparadigm Programming or Csci 526 Parallel Computing or Csci 531 Artificial Intelligence or Csci 658 Software Language Engineering or another programming-intensive course approved by the department's Graduate Committee

The department's graduate faculty encourages students to take Engr 694 Research Methods if they plan to choose the thesis option or to continue their studies toward the Ph.D. degree.

The following coursework requirements apply to both research project and thesis options.

In addition to the thesis or M.S. project courses, each student must complete at least 9 semester credit hours of regular computer science courses at the 600 level or above. A regular computer science course is a course that (a) is taught by a computer science faculty member on a computer science topic, (b) is publicized and offered to all graduate students who meet the prerequisites, and (c) has a regular weekly meeting time with organized lectures or

activities.

These courses typically have Csci, Engr, or EngS prefixes.

In addition to the thesis or M.S. project courses, a student may count up to two nonregular courses (6 hours) toward his or her degree. A nonregular course is an independent study course or any other course that does not meet the requirements stated above for regular courses (i.e., it does not count at the 600 level or above).

Coursework Option

The following coursework requirements apply to the coursework option.

Each student must complete at least 12 semester credit hours of regular computer science courses at the 600 level or above. A regular computer science course is a course that (a) is taught by a computer science faculty member on a computer science topic, (b) is publicized and offered to all graduate students who meet the prerequisites, and (c) has a regular weekly meeting time with organized lectures or activities. These courses typically have Csci, Engr, or EngS prefixes.

A student may count up to two nonregular courses (6 hours) toward his or her degree. A nonregular course is an independent study course or any other course that does not meet the requirements stated above for regular courses (i.e., it does not count at the 600 level or above).