ENGINEERING SCIENCE (MS) - COMPUTER & INFORMATION SCIENCE

Description

The M.S. in engineering science is offered in a number of emphasis areas: aeroacoustics, biomedical engineering, 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 6997A Thesis)
- A written thesis
- A final public oral examination over the work in the thesis area the student must register for the ENGR 6997A Thesis section assigned to the student's research adviser for 6 hours during the program; ENGR 6997A Thesis 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 6999D Research Topics in Engineering Science I)
- 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 6999D Research Topics in Engineering Science I section assigned to the student's research adviser during the final semester of the program; ENGR 6999D Research Topics in Engineering Science I 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.

Code	Title	Hours
CSCI 5533	Analysis of Algorithms	3
Select one of the following:		
CSCI 5523	Operating Systems	
CSCI 5561	Computer Networks	
CSCI 5530	Computer Architecture and Design	
Select one of the following:		
CSCI 5525	Compiler Construction	
CSCI 5556	Multiparadigm Programming	
CSCI 5526	Parallel Computing	
CSCI 5531	Artificial Intelligence	
CSCI 6058	Software Language Engineering	
Another programming-intensive course approved by the department's Graduate Committee		

The department's graduate faculty encourages students to take ENGR 6999E Research Topics in Eng. Science II 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 6000 level or above. A regular computer science course is a course that:

1. is taught by a computer science faculty member on a computer science topic,
2. is publicized and offered to all graduate students who meet the prerequisites, and
3. 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 6000 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 6000 level or above. A regular computer science course is a course that

1. is taught by a computer science faculty member on a computer science topic,
2. is publicized and offered to all graduate students who meet the prerequisites, and
3. 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 6000 level or above).