

COMPUTER ENGINEERING, M.S.

Learning Outcomes

1. Graduates should demonstrate the skills to develop and implement information security and information assurance policies and procedures.
2. Graduates should demonstrate the ability to identify technical solutions to meet information security requirements.
3. At the time of graduation a Master of Science/Engineering student should be able to describe the techniques and principles for the development of high performance computer systems, describe the details of extant computer architectures, and quantitatively analyze aspects of computer architecture and draw conclusions about performance.
4. At the time of graduation a Master of Science/Engineering student should be able to use models of languages, such as regular expressions and context-free grammars, to develop parsers for specific languages and construct intermediate representations such as abstract syntax trees.
5. At the time of graduation a Master of Science/Engineering student should be able to work with basic aspects of discrete math related to the analysis of algorithms and data structures, e.g., sums, probability, basic properties of trees and graphs, asymptotic analysis and amortized analysis.
6. At the time of graduation a Master of Science/Engineering student should be able to integrate components to form coherent well designed system.

Admissions

Requirements for admission to all graduate degree programs in computer science and engineering include the general admission requirements of The Graduate School as well as more stringent departmental requirements, as described below. In general, the admission process is highly competitive. Admissions decisions are based on the quality of the applicant's previous university-level academic work, letters of recommendation, and other evidence of past accomplishments.

For admission to the M.S program, applicants normally hold the B.S. degree in computer science, computer engineering, or a related field. Applicants should have completed courses in algorithmic design, data structures, computer organization, analysis of algorithms, operating systems, discrete mathematics, and calculus. Applicants not having courses in all of these subjects may be admitted conditionally while they take the remaining ones. Any required prerequisite courses are an integral part of the student's degree program and must be completed before any graduate degree will be awarded.

In addition, all applicants should submit an official transcript from each school or college previously attended, and at least two letters of recommendation. The admission committee will evaluate all aspects of each application and will make a recommendation on admission to The Graduate School. For full consideration, all application materials must be received by February 1 for fall and summer admission and by October 1 for spring admission.

Degree Requirements (30 Hours)

The Master of Science in Computer Engineering (MSCE) degree requires 30 credit hours beyond the BS. Students in the MSCE program may elect either the thesis or the non-thesis option.

Coursework

Core (10 Hours)

Course	Title	Credits
CSCE 513	Computer Architecture	3
CSCE 611	Advanced Digital Design	3
CSCE 750	Analysis of Algorithms	3
CSCE 791	Seminar in Advances in Computing	1

Total Credit Hours **10**

Electives (20 Hours)

- A maximum of six hours in non-CSCE courses approved by the Graduate Director and at most three hours of CSCE 798 may be applied toward the degree. CSCE 797 may not be applied toward the degree.

Students who choose the non-thesis option must complete 6 hours from the following list:

Course	Title	Credits
CSCE 512	System Performance Evaluation	3
CSCE 516	Computer Networks	3
CSCE 569	Parallel Computing	3
CSCE 574	Robotics	3
CSCE 613	Fundamentals of VLSI Chip Design	3

Thesis Option

Students who choose the thesis option must substitute 6 hours of thesis preparation (CSCE 799) for electives and defend the thesis in a public presentation. The electives must also include at least 8 hours in CSCE courses numbered 700 and above.

Non-Thesis Option

Students who choose the non-thesis option must complete at least 11 of the 20 hours of electives in CSCE courses numbered 700 and above, and pass a written comprehensive examination administered at the end of Fall or Spring semester.