

# M.S. in Computer Engineering

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## Program Director

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The Master of Science in Computer Engineering program focuses on the state-of-the-art advancement in the field of computer engineering. This program prepares students for highly sought after jobs in fields such as data mining, computer security, parallel programming, deep learning, computer networking, robotics, software design, advanced computer architectures, and digital systems design. Our graduates are employed by a variety of companies, including the following: Texas Instruments (TI), National Instruments (NI), Intel, Microsoft, IBM, Rackspace, USAA, Southwest Research Institute, Boeing, Accenture, and Samsung, to name a few. Some of our graduates went on to pursue their Ph.D. degrees at Stanford University, University of Texas at Austin, and Northwestern University etc. Career opportunities for graduates with Master of Science degrees in Computer Engineering are abundant.

## What is computer engineering?

Computer engineers design and implement computer systems – both hardware and software. Computer engineering is a combination of electrical engineering (hardware) and computer science (software and systems), and computer engineers work on a wide range of interesting computing problems that have a huge impact on the society, including computer security, parallel programming, machine learning, and reliable software & hardware system design.

## Admission Requirements

Admission is granted to those students who are highly motivated and are willing to work hard to master various challenging topics offered in the graduate program of computer engineering.

### Prerequisites

Students are expected to have reasonable understanding and mastery of the following areas:

- Digital Logic Design
- Circuit Analysis
- Computer Programming (C/C++ or Java)
- Data Structure and Algorithms
- Discrete Mathematics

For any questions regarding aforementioned prerequisites, prospective students are encouraged to discuss them with the graduate program director.

## Prerequisites

Code	Title	Semester Hours
<b>Courses</b>		
EG 2141	Logic Design Laboratory	1
EG 2152	Circuit Analysis Laboratory	1
EG 2341	Fundamentals of Logic Design	3
EG 2352	Circuit Analysis I	3
EG 1302	Programming for Engineers	3
EG 2342	Data Structures & Algorithms	3
MT 2412	Calculus I	4
MT 2413	Calculus II	4
MT 3323	Discrete Math Structures	3

## Degree Requirements

### Non-Thesis/Project Option

Code	Title	Semester Hours
<b>Engineering Courses Required</b>		
EG 6328	Software Engineering	3

EG 6356	Computer Networking	3
EG 6370	Parallel Processing	3
EG 6374	Computer Architecture	3
EG 8396	Capstone Project	3

**Engineering Electives**

Select 15 hours from the following: 15

EG 6306	Software Project Planning and Management
EG 6312	Data Mining
EG 6334	Software Quality Assurance
EG 6335	Wireless Security
EG 6338	Special Topics
EG 6376	Neural Networks
EG 6378	Microprocessors
EG 6380	Microcomputer Interfacing
EG 6390	Digital Systems Design Using VHDL
EG 6392	Network Programming
EG 6369	Cryptography Principles and Practices
EG 6397	Fault Tolerant Computing
EG 7304	Requirements Engineering
EG 7314	Software Security
EG 7155	Internship
EG 7255	Internship
EG 7355	Internship

Total Semester Hours

30

**Thesis Option**

Code	Title	Semester Hours
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**Engineering Courses Required**

EG 6328	Software Engineering	3
EG 6356	Computer Networking	3
EG 6370	Parallel Processing	3
EG 6374	Computer Architecture	3
EG 8390	Thesis I	3
EG 8391	Thesis II	3

**Engineering Electives**

Select 12 hours from the following: 12

EG 6306	Software Project Planning and Management
EG 6312	Data Mining
EG 6334	Software Quality Assurance
EG 6335	Wireless Security
EG 6338	Special Topics
EG 6376	Neural Networks
EG 6378	Microprocessors
EG 6380	Microcomputer Interfacing
EG 6390	Digital Systems Design Using VHDL
EG 6392	Network Programming
EG 6369	Cryptography Principles and Practices
EG 6397	Fault Tolerant Computing
EG 7304	Requirements Engineering
EG 7314	Software Security
EG 7155	Internship

EG 7255	Internship	
EG 7355	Internship	
Total Semester Hours		30