

Master of Science Degree in Computer Engineering

The Master of Science degree in Computer Engineering is designed to offer the students the opportunity to prepare for leadership roles in careers with industry, government, or educational institutions. The students enrolled in the M.S. Degree program in Computer Engineering will have two different options to obtain their degree. They are: (1) Thesis option and (2) Non-thesis option. A thesis option is offered for students who want the opportunity to obtain expertise in research and who may be interested in pursuing the doctoral degree in computer engineering or electrical engineering. A non-thesis option is offered for students who want a practical industrial applications-oriented degree.

To qualify for the M.S. Degree in Computer Engineering, each candidate is required to successfully complete 30 semester credit hours for the Thesis option and 33 hours for the non-thesis option. The degree requirements are as follows:

Program Admission Requirements:

To be admitted to the M.S. Degree Program in Computer Engineering, a student must satisfy the university-wide requirements for admission to graduate programs (<http://www.utsa.edu/graduate>). In addition, the applicant must have completed a Bachelor's degree in electrical or computer engineering, or a related field. The applicant must have acceptable GRE scores. The applicant must also submit three letters of reference from qualified scientists, engineers or supervisors that can certify his/her ability to pursue studies at the Science Master's level.

Degree Requirements:

The degree requirements of the different options are as follows:

Thesis Option:

Core courses (any two from Group A)	6 hours
Additional Graduate Computer Engineering Courses:	
(Courses from Group A or Group B)	12 hours
Electives (Courses from Group A, B, or C)	6 hours
Master's Thesis	6 hours
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Minimum total semester credit hours required	30 hours

Non-Thesis Option:

Core courses (any two from Group A)	6 hours
Additional Graduate Computer Engineering Courses	
(Courses from Group A or Group B)	18 hours
Electives (Courses from Group A, B, or C)	9 hours
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Minimum total semester credit hours required	33 hours

Group A

1. EE 5123 Computer Architecture
2. EE 5323 VLSI Design
3. EE 5433 Engineering Programming
4. EE 5223 FPGA and HDL

Group B

1. EE 5223 Topics in Digital Design (will include)
 - i. Graph Theory and Networking
 - ii. Microcomputer Based Systems
 - iii. PCI System Design
 - iv. Low Power VLSI Design
2. EE 5423 Topics in Computer Architecture (will include)
 - i. Parallel and Distributed Computing
 - ii. RISC Processor Design
 - iii. Superscalar Microprocessor Architecture
 - iv. Fault Tolerance and Reliable System Design
 - v. Computer Arithmetic
 - vi. Advanced Computer Architecture
3. EE 5433 Topics in Embedded Systems (will include)
 - i. Embedded Software Systems Design
 - ii. Embedded Software Testing and Quality Assurance
 - iii. Engineering Programming.
4. EE 6323 Advanced Topics in Computers
5. EE 7423 VLSI for Signal Processing
6. CS 5103 Software Engineering

Group C

1. EE 5163 Digital Signal Processing
2. EE 5263 Computer Vision
3. EE 5283 Computer and Communications Network
4. EE 5363 Digital Image Processing
5. EE 5383 Digital Information Theory
6. EE 5463 Artificial Neural Networks
7. EE 6951-3 Independent Study
8. EE 6971-3 Special Problems
9. EE 7463 Pattern Analysis and Machine Vision
10. CS 5113 Computer Graphics
11. CS 5233 Artificial Intelligence
12. CS 5253 Expert Systems
13. CS 5363 Programming Languages and Compilers
14. CS 5523 Operating Systems
15. CS 6103 Distributed Software Development

Computer Engineering Research

1. EE 6983 Master's Thesis