



## Computer Science

TENNESSEE TECH

*Effective Date: Fall 2018*

The graduate program in Computer Science (CS) offers a Masters in Computer Science (MSCS). The MS program has three options: thesis, project, or courses-only. Each MS student must take a comprehensive exam that covers his or her core coursework and area of specialization. The student will have an advisory committee comprised of at least three members. The advisory committee shall be chaired or co-chaired by a CS faculty member and include an additional member from the CS Department. Other members of the advisory committee can be from outside of the CS department.

### **MS Program Options:**

#### ***Thesis Option:***

A thesis option requires 31 semester credit hours of graduate work, including 24 hours of coursework, one hour of graduate seminar, and 6 hours of graduate thesis approved by the advisory committee. A student may take a maximum of 9 hours of 5000-level courses. A student may take a maximum of 3 hours of directed independent study courses to satisfy the required 24 hours of coursework.

#### ***Project Option:***

A non-thesis project option requires 34 semester credit hours of graduate work, including 30 hours of course work, one hour of graduate seminar, and 3 hours of project work (CSC6980) approved by the advisory committee. A student may take a maximum of 9 hours of 5000-level courses. A student may take a maximum of 3 hours of directed independent study courses to satisfy the required 30 hours of coursework.

#### ***Course Option***

A non-thesis project option requires 34 semester credit hours of graduate work, including 30 hours of course work, one hour of graduate seminar, and 3 hours of a directed independent study. A student may take a maximum of 9 hours of 5000-level courses. A student has to pass a written/oral comprehensive exam set by his/her graduate committee.

**\*Students of Thesis or Project option must complete a final presentation and defense exam in the thesis/project related area.**

### **An MS student must complete the following courses:**

- Graduate Seminar (1 Credit Hour)
- Core Theory (3 Credit Hours)
- Specialization in an Approved Area (9 Credit Hours)
- Other Specialized Areas (6 Credit Hours from Two Other Specialized Areas – 3 hours from each of them)
- Electives (6 Credit Hours for Thesis Option; 12 Credit Hours for Project Option; 15 Credit Hours for Course Option)



## Computer Science

TENNESSEE TECH

- Thesis (6 Credit Hours for Thesis Option)
- Project (3 Credit Hours for Project Option)

### List of Courses

#### **Graduate Seminar (1 hour):**

- CSC 6910 – Graduate Seminar

#### **Core Theory (3 hours):**

- CSC 5400 – Analysis of Algorithms
- CSC 6740 – Parallel and Distributed Algorithms
- CSC 6400 – Internet Algorithmics
- MATH 5360 – Graph Theory
- MATH 6170 – Experimental Design I

#### **Specialization (9 hours from one area of specialization + 6 hours from two other areas of specialization):**

- ***Parallel and Distributed Computing***  
CSC 5760 – Parallel Programming  
CSC 6740 – Parallel and Distributed Algorithms  
CSC 6720 – Internet Protocols  
CSC 6780 – Distributed Computing  
CSC 6760 – Grid Computing  
CSC 6730 – Advanced Networking
- ***Information Assurance and Security***  
CSC 5575 – Information Assurance and Security  
CSC 6575 – Internet Security  
CSC 6580 – Advanced Reverse Engineering  
DS 5260 – Network Security and Forensics  
DS 5125 – Computer Forensics and Investigation
- ***Knowledge Discovery***  
CSC 5220 – Data Mining and Machine Learning  
CSC 5240 - Artificial Intelligence  
CSC 6220 – Data Mining  
CSC 6230 – Machine Learning  
CSC 6250 – Knowledge-Based Systems

**\* A student can apply CSC 6900 (Advanced Topics) to fulfill 9 hours area specialization requirement if approved by student's advisory committee.**

**\*\* A student can take a course (e.g., ECE 6900 – Special Topics in Electrical Engineering) from different departments across the university towards ONE specialization course if his**



## **Computer Science**

**TENNESSEE TECH**

or her Advisory Committee approves.

### **Possible Electives:**

- CSC 5200 – Computer Networks
- CSC 5100 – Operating Systems
- CSC 5320 – Computer Architecture
- CSC 5580 – Software Reverse Engineering
- CSC 6300 – Web Based Data base
- CSC 6400 – Internet Algorithmics
- CSC 6901/6902/6903 – Advanced Topics
- CSC 6801/6802/6803 – Directed Independent Study
- MATH 6170 – Experimental Design I
- MATH 6180 – Experimental Design II
- ME 5140 – Introduction to Robotics
- ME 6640 – Advanced Robotics
- ECE 6130 – Computer Architecture
- ECE 6160 - Advanced Computer Networks
- ECE 6140 – Parallel Processing Systems
- ECE 6730 - Information Theory and Reliable Communication
- ECE 6750 - Wireless Communication Systems

**\* A student can take courses from different departments across the university as electives if his or her Advisory Committee approves.**

### **Thesis:**

- CSC 6990 Research & Thesis (6 Credit Hours)

### **Project:**

- CSC 6970 - Non-Thesis Design Project (3 Credit Hours)