Computer And Information Sciences (MS)

Degree Requirements

Requirements For Masters Degree With Computer Science (CSC) Specialization

Students must satisfactorily complete all prescribed Graduate Professional Component courses, a comprehensive examination, and thirty-six (36) graduate credit hours for the Master of Science degree with Computer Science specialization. Required prerequisite courses are prescribed by the Computer Science Chair after reviewing prior academic work and results from any required School of Computing Foundation Placement Examinations.

Computer Science Specialization majors must complete their Computer Systems program with a minimum grade of "B" in core courses, and an overall GPA of 3.0. The thirty-six (36) graduate semester hours consisting of twelve (12) semester hours of CORE courses, six (6) semester hours of REQUIRED courses, and eighteen (18) semester hours of approved elective courses according to the selected concentration option as follows:

Required Courses (18 Semester Hours):
- Performance Evaluation of Algorithms  CSC 522
- Software Engineering Principles  CS 527
- Computer Architecture  CSC 520
- Data Security  CSC 580 or MA 581
- CIS Research Methodologies  CIS 518
- Distributed Systems  CSC 532

Concentrations (18 Semester Hours):
Two concentrations of study are available to students who select the Computer Science Specialization in the SoC masters program. These are THESIS and COURSE-ONLY concentrations.

Thesis Concentration
For the Thesis Concentration, eighteen (18) semester hours of required and elective course work are required.

Research Development
A minimum of three (3) semester hours credit of CIS 595, Computer and Information Sciences Research Development, are required. A Thesis Concentration student must be enrolled in CIS 595 in the semester during which they defend their thesis prospectus. A grade of "C" or lower in CIS 595 will result in the dismissal of the student from the Thesis Concentration.

Thesis
A minimum of three (3) semester hours credit of CIS 599, Computer and Information Sciences Thesis, must be applied towards the degree for the Thesis Concentration. Students may only enroll in CIS 599 after successfully defending their thesis prospectus (minimum grade of "B" in CIS 595). A Thesis Concentration student must be enrolled in CIS 599 in the semester during which they defend and/or submit their thesis.

Elective Course Work
Twelve (12) semester hours of additional approved electives are required. A maximum of three (3) semester hours of Special Permission courses may be applied to the degree for the Thesis Concentration. A list of Pre-Approved Computer Science courses and a list of Special Permission courses are given at the end of this section.

Comprehensive Examination
All students in the Thesis Concentration must pass an oral comprehensive examination administered after the thesis committee accepts the thesis. The School of Computing Comprehensive Examination Policies and Procedures document and the Comprehensive Examination Application form are available at http://www.southalabama.edu/colleges/soc.
Course Only Concentration
For the Course Only Concentration, eighteen (18) semester hours of elective course work are required.

Elective Course Work
A maximum of six (6) semester hours of Special Permission courses may be applied to the degree for the Course Only Concentration. No credits from CIS 599 may be applied to the Course Only Concentration. A list of Pre-Approved Computer Science courses and a list of Special Permission courses are given at the end of this section.

Comprehensive Examination
Students in the Course Only Concentration must pass a written examination. Students wishing to sit for the examination must apply online to the Director of SoC Graduate Studies by the Friday of the last week of classes in the semester prior to which the examination is to be taken. The comprehensive examination is offered at least once a year. The School of Computing Comprehensive Examination Policies and Procedures document and the Comprehensive Examination Application form are available at http://www.southalabama.edu/colleges/soc.

Computer Science Electives
A list of Pre-Approved Computer Science elective courses and a list of Special Permission courses are given below. All other courses must be approved by the Computer Sciences Chair. A maximum of six (6) credit hours of non-CSC or non-CIS courses will be allowed.

Pre-approved Computer Science Electives
• Compiler Design and Construction
• Communications and Network Analysis
• Real-Time Software Systems
• Computer Graphics
• Modeling and Simulation
• Numerical Analysis
• Artificial Intelligence Theory and Programming
• Game Development
• Computer Language Design
• Data Mining
• Introduction to Bioinformatics
• Artificial Intelligence and Heuristic Programming
• Information Assurance and IT Auditing
• Digital Forensic Analysis
• Network Security
• Special Topics in Computer Science
• Data Warehousing
• Information Systems Database Management
• Advanced Data Management

Special Permission Courses
Approval of the Computer Science Chair and the Director of the School of Computing Graduate Studies is required for CIS graduate faculty sponsorship of a Special Permission course. A maximum of nine (9) credit hours of Special Permission courses may be applied to the degree for the Thesis Concentration or the Project Concentration; a maximum of six (6) credit hours of Special Permission courses may be applied to the degree for the Course Only Concentration.

• Directed Study
• Computer and Information Sciences Research Development

Department Information
Computer Science is a discipline that involves the understanding and design of computers and computational processes. In its most general form, it is concerned with the understanding of information transfer and transformation. Particular interest is placed on making processes efficient and endowing them with some form of intelligence. The discipline includes both advancing the fundamental understanding of algorithms and information processes in general, as well as the practical design of efficient, reliable software to meet given specifications. Courses offer students the opportunity to explore current trends in computing such as: information assurance, big data, video game development, computer graphics and robotics.