Computer Science

Master of Science

Description

The MS in Computer Science is designed to provide students with the opportunity for advanced studies in areas of computer science and information technology. The program requires a total of 36 credits. Students who do not possess sufficient background knowledge at the undergraduate level in computer science may have to take additional credits and the total for such candidates may be 54 credits.

The program allows students to focus in areas such as cybersecurity, computer systems, and software methodology. It also requires the completion of a project or thesis worth 6 credits.

The MS in Computer Science enables the development of in-demand skills for a variety of high growth occupations. According to the Bureau of Labor Statistics, Information Security Analysts, and Data Scientists feature in the 'Fastest Growing Occupations 2020, and projected 2030' list. Jobs for Computer and information systems managers are projected to grow 10.9% during 2020 to 2030, whereas computer and mathematical occupations as a whole are projected to grow 14.1%. Software and web developers, programmers, and testers roles are projected to grow 18.7% in the same decade.

Carolina University's MS in Computer Science has been developed with careful attention to these market skills gaps and is aimed at providing students with the tools to become successful.

Students with a background other than computer science may have to complete the 18 hours of professional waivable courses as prerequisites to the program. Any of these 6 courses may be waived based on appropriate undergraduate/graduate courses or professional background. Only courses with a B or above may be used for waiver purposes. Waivable classes are expected to be completed first in the program.

Project/Thesis Requirement:

Each student must complete a substantial individual project. There are two different ways to satisfy this requirement.

1. Completion of a Master's Project
    1. Student must find a project advisor.
    2. Student must prepare a project proposal and obtain written approval for the project prior to registration.
2. Completion of a Master's Thesis
    1. Student must find a thesis advisor – (preferably the second semester into the program)
    2. Student must prepare thesis proposal and obtain written approval for the thesis prior to course registration.

The program can be completed on campus or fully online.

Admissions Requirements

- A bachelor's degree or equivalent from a recognized college or university

- GPA of 2.7 or higher
- Official transcripts from all previously attended schools
- Completed application with Carolina University

Degree Requirements

- The maximum time limit to complete the program is four years or 150% of the credits, whichever the student reaches first.
- A minimum of 24 credit hours must be completed at CU.
- Up to 50% of the required credit hours can be transferred.
- Graduation is contingent upon the completion of 48 hours of prescribed courses with a minimum cumulative GPA of 2.00.

Courses

Professional (Waivable) – 18 hours

CSC 510 - Programming I
3 Credit Hours
CSC 520 - Programming II
3 Credit Hours
CSC 530 - Algorithms & Data Structures
3 Credit Hours
CSC 540 - Algorithms & Data Structures II
3 Credit Hours
CSC 550 - Networking
3 Credit Hours
CSC 560 - Operating Systems
3 Credit Hours

Professional Core

Software Methodology (3 hours): 1 of the following courses

CSC 600 - Web-Database ApplicationDevelopment
3 Credit Hours
CSC 605 - Web-Oriented Principles andPractice
3 Credit Hours
CSC 610 - iOS Development
3 Credit Hours
CSC 615 - Rapid Software Development
3 Credit Hours
CSC 620 - OOP Analysis and Design
3 Credit Hours
CSC 625 - Java Programming
3 Credit Hours

Theory and Analysis (3 hours): 1 of the following courses

CSC 650 - Advanced Database Systems
3 Credit Hours
CSC 655 - Cryptography and Data Security
3 Credit Hours
CSC 660 - Structure of Programming Languages
3 Credit Hours
CSC 665 - Artificial Intelligence
3 Credit Hours
DCS 635 - Machine Learning
3 Credit Hours

Computer Systems (3 hours): 1 of the following courses

CSC 550 - Networking
3 Credit Hours
CSC 555 - Unix Network Administration
3 Credit Hours
CSC 560 - Operating Systems
3 Credit Hours
CSC 565 - Enterprise Network Design
3 Credit Hours

7 courses (21 hours) of any ANA, CSC, CYB, or DCS course

CSC 530 - Algorithms & Data Structures
3 Credit Hours
CSC 535 - Introduction to Script Programming/Python
3 Credit Hours
CSC 540 - Algorithms & Data Structures II
3 Credit Hours
CSC 699 - Special Topics
3 Credit Hours

Master's Thesis/Project

CSC 690 - Project/Thesis I
3 Credit Hours
CSC 695 - Project/Thesis II
3 Credit Hours