

M.S. IN COMPUTER SCIENCE

College of the Sciences and Mathematics

Curriculum

Code	Title	Credits
Core Courses ^{1,2}		
CSC 520	Foundations of Computer Science	3
CSC 530	Data Structures	3
CSC 540	Programming Languages	3
CSC 560	Analysis of Algorithms	3
Electives		
Select four 500-level electives from the following:		12
CSC 525	Operating Systems	
CSC 535	Networks and Data Communication	
CSC 545	Database Systems Concepts	
CSC 555	Software Engineering	
CSC 565	Compiler Design	
CSC 575	Artificial Intelligence	
CSC 576	Data Science	
CSC 577	Natural Language Processing	
CSC 581	Topics in Computer Science	
CSC 582	Topics in Information Systems	
CSC 583	Topics in Computer Security	
CSC 584	Topics in Web Technology	
CSC 585	User Interfaces	
CSC 586	System Administration and Security	
CSC 587	Modern Web Applications Using Server-Side Technologies	
CSC 588	Wireless Programming and Security	
Select two 600-level courses from the following:		6
CSC 600	Advanced Seminar ³	
CSC 603	Advanced Seminar in Security ³	
CSC 604	Advanced Seminar Web Technology ³	
CSC 605	Internship in Computer Science	
CSC 610	Independent Research ⁴	
CSC 620	Thesis ⁴	
Complete an additional CSC elective at the 500 or 600 level, numbered CSC 525 or greater. ^{3,4}		3
Total Minimum Credits Required		33

¹ A student must complete the four core courses within the first six courses taken.

² All core courses must be completed before a student can take a 600-level course.

³ The advanced seminar courses (CSC 600, CSC 603, CSC 604) offer a variety of advanced topics in computer science. A student must take at least one of these courses and not more than two.

⁴ A student who elects to do a master's thesis must take CSC 610 (independent research) and CSC 620 (thesis). CSC 610 may count for credit towards the degree only once.

Thesis Options

Independent Research (CSC 610)

The student may work in one of three directions for this course:

1. Master's thesis preparation: After consulting with a faculty advisor, the student will conduct a comprehensive literature search in a research area, write a detailed report on the current state of the art in that area, and develop a thesis proposal.

2. Individual project: The student will work on a substantial programming project throughout the semester. The student will be expected to do sufficient background research and then design, as needed, all the data structures, flow of control, and so forth, required for implementation.
3. Team project: The student will be involved in an ambitious software development project with at least one other student under the guidance of the advisor. This course emphasizes the development of those capabilities that are considered especially important in the practical world of computing, such as written and oral communications skills and the ability to work as part of a team.

Thesis (CSC 620)

The student is to carry out the research proposal developed in CSC 610. At the completion of the project, the student must submit a bound manuscript that meets the approval of the graduate committee.

Sample Course Plan

To track their individual degree progress, students are advised to access their Degree Progress Report (DPR) via my WCU and consult their Graduate Coordinator. For more information, visit wcupa.edu/DegreeProgressReport (<http://wcupa.edu/DegreeProgressReport/>).

The following is a sample suggested course sequence for this program; course offerings and availability are not guaranteed. Students should consult their academic advisor with any questions.

Two-Year Plan

Course	Title	Credits
Year One		
Fall		
CSC 520	Foundations of Computer Science	3
CSC 530	Data Structures	3
CSC XXX	Computer Science Elective	3
Credits		9
Spring		
CSC 540	Programming Languages	3
CSC 560	Analysis of Algorithms	3
CSC 600	Advanced Seminar	3
Credits		9
Summer Session I		
CSC XXX	Computer Science Elective	3
Credits		3
Summer Session II		
CSC XXX	Computer Science Elective	3
Credits		3
Year Two		
Fall		
CSC 600	Advanced Seminar	3
CSC XXX	Computer Science Elective	3
CSC XXX	Computer Science Elective	3
Credits		9
Spring		
6 credits from Year 1, Summer can be moved here.		
Credits		0
Total Credits		33