B.S. + M.S. IN COMPUTER SCIENCE - FIVE YEAR

Overview

The 5-year Bachelor of Science + Master of Science program in Computer Science provides research training for students who wish to work in a computing research lab, or possibly continue to PhD studies.

Students enter the "MS-phase" of the program when they have met the following requirements:

- They have achieved senior status, i.e., earned 89 credit hours towards their Bachelor of Science in Computer Science.
- Within the requirements for a Bachelor of Science in Computer Science, they have completed the prerequisites for entry into the regular Master of Science program, i.e.:

Code	Title	Credit Hours
Pre-Requisites for entry to Regular MS in Computer Science Program		
CSC 120	Computer Programming I	4
CSC 220	Computer Programming II	4
CSC 317	Data Structures and Algorithm Analysis	3
MTH 161	Calculus I	4
MTH 210	Introduction to Linear Algebra	3
MTH 224	Introduction to Probability and Statistics	3
MTH 309	Discrete Mathematics I	3

- They have completed 3 credit hours of CSC 410 and/or CSC 411 in a research-oriented project.
- They have an overall GPA of at least 3.0.
- They have a GPA of at least 3.3 in the CSC courses taken towards their BS in Computer Science.
- They have advised the Director of Graduate Studies of their eligibility for the MS-phase.

Students in the MS-phase must complete 3 further credit hours of CSC 410 and/or CSC 411 in a research-oriented project, as part of their Bachelor of Science in Computer Science (this project will normally be the starting point for the Master of Science research). Students in the MS-phase may take up to 12 credits of courses, including 600 level courses, that count towards completing the requirements for the Master of Science in Computer Science. When students have completed the requirements for a Bachelor of Science in Computer Science they will be awarded that degree, and when they have completed the requirements for the Master of Science in Computer Science they will be awarded that degree.

Incoming students can be admitted to the program if their mathematics placement is MTH 108 or higher. Existing Bachelor of Science in Computer Science students can switch into the program when they have met the requirements for entering the MS-phase of the program. Students can be removed from the program if they have not met the prerequisites for admission to the MS-phase by the time they have achieved senior status. If a student is removed or decides to withdraw from the program, any 600 level courses taken may be used to fulfill the requirements for a Bachelor of Science in Computer Science.

Curriculum Requirements

Students must complete the Graduate School requirements, and the Departmental requirements described here.

Code	Title	Credit Hours
B.S. Requirements		**120**
Refer to the link below for more information on the BS requirements.		
https://bulletin.miami.edu/undergraduate-academic-programs/arts-sciences/computer-science/computer-science-bs-students-arts-sciences/ (http://bulletin.miami.edu/undergraduate-academic-programs/arts-sciences/computer-science/curriculumtext/)		
M.S. Curriculum Requirements		
Select either the Thesis Option or the Coursework Option		**30-36**
Refer to the link below for more information on the MS requirements.		
https://bulletin.miami.edu/graduate-academic-programs/arts-sciences/computer-science/computer-science-ms/ (http://bulletin.miami.edu/undergraduate-academic-programs/arts-sciences/computer-science/curriculumtext/)		
Total Credit Hours		**150-156**

Suggested Plan of Study

Year One		
Fall		**Credit Hours**
CSC 120	Computer Programming I [1]	4
MTH 161	Calculus I	4
WRS 105	First-Year Writing I	3
Language Course		3
Elective		3
	Credit Hours	**17**
Spring		
CSC 220	Computer Programming II	4
MTH 162	Calculus II	4
WRS 106 or ENG 106	First-Year Writing II or Writing About Literature and Culture	3
Language Course		3
Elective		3
	Credit Hours	**17**
Year Two		
Fall		
CSC 314	Computer Organization and Architecture	3
CSC 322	System Programming	3
MTH 309	Discrete Mathematics I	3
BIL or CHM or PHY Course I		4
BIL or CHM or PHY Associated Lab I		1
Language Course		3
	Credit Hours	**17**
Spring		
CSC 317	Data Structures and Algorithm Analysis	3
CSC 427	Theory of Computing	3
MTH 210	Introduction to Linear Algebra	3
BIL or CHM or PHY Course II		4
BIL or CHM or PHY Associated Lab Course II		1
PHI 115	Social and Ethical Issues in Computing	3
	Credit Hours	**17**
Year Three		
Fall		
CSC 421	Principles of Computer Operating Systems	3
CSC 423	Database Systems	3
MTH 224	Introduction to Probability and Statistics	3
People and Society Cognate Course		3
Writing Intensive Course		3
	Credit Hours	**15**
Spring		
CSC 410	Computer Science Project Planning	3
CSC 424	Computer Networks	3
WRS 233	Advanced Writing for STEM	3
Arts and Humanities Cognate Course		3
People and Society Cognate Course		3
	Credit Hours	**15**
Year Four		
Fall		
CSC 405	Computer Science Seminars	1

CSC 411	Computer Science Project Implementation	3
600 Level CSC Course		3
600 Level CSC Course		3
Arts and Humanities Cognate Course		3
People and Society Cognate Course		3
	Credit Hours	**16**
Spring		
CSC 419	Programming Languages	3
CSC 431	Introduction to Software Engineering	3
600 Level CSC Course		3
Arts and Humanities Cognate Course		3
Elective		3
	Credit Hours	**15**
Year Five		
Fall		
600 Level CSC Course		3
600 Level CSC Course		3
700 Level CSC Course		3
CSC 810	Master's Thesis	3
Elective		3
	Credit Hours	**15**
Spring		
700 Level CSC Course		3
700 Level CSC Course		3
CSC 810	Master's Thesis	3
Elective		3
Elective		3
	Credit Hours	**15**
	Total Credit Hours	**159**

[1] The prerequisites for CSC 120 are CSC 115 or MTH 141 or MTH 151 or MTH 161 or MTH 171 or MAS 110 or a score of 4 or 5 in AP Computer Science Principles (UM equivalency CSC 119).