

Computer Science, M.C.S.

Requirements

The Master of Computer Science (MCS) at Utah Valley University is an applied graduate program resulting in a professional degree. Students graduating with this degree will have a broad grounding in computer science as a discipline and be well equipped to take on leadership roles in a wide range of computing technology-related industries. Student education will be focused on developing software systems using current technologies while allowing them the freedom to explore and exploit new technologies to solve real-world problems. Students will be required to develop a broad base of competency by passing required courses in large scale implementation, applied mathematics computing, information management, and software engineering. Electives will allow a student to continue to add breadth to their education or allow them to focus on specific areas of computer science they find interesting or feel will best advance their professional objectives.

Total Program Credits: 30

Matriculation Requirements:		
1. Application for admission to the MCS will include letters of recommendation and a statement of purpose.		
2. Applicants must have an overall grade point average in their undergraduate work of 3.0 or higher on a 4.0 scale.		
3 For international students whose native language is not English, a TOEFL score of 80 iBT (550 pBT) or higher, or an IELTS band score of 6.5 or higher within the past two years, is required.		
4. Applicants with a bachelor's degree in a computer-related field (Computer Science, Computer Engineering, Software Engineering, or a closely related field) who have completed the following courses (or equivalent courses from other institutions) with a C+ or better will be deemed to have the fundamental computer science background to enter the program:		
<ul style="list-style-type: none"> • CS 2300 Discrete Structures I • CS 2420 Introduction to Algorithms and Data Structures • CS 2810 Computer Organization and Architecture • CS 3060 Operating Systems Theory • MATH 1210 Calculus I 		
5. Applicants without a bachelor's degree in a computer-related field or who have not completed the above courses with a C+ will be deemed lacking in fundamental computer science background to enter the program.		
6. Applicants found lacking in fundamental computer science background can be conditionally admitted to the MCS. Conditionally admitted students will have an individualized MCS Leveling Plan (MCS LP) developed for them by the Computer Science Graduate Committee. Once the MCS LP has been met by the applicant, the applicant will be deemed to have the fundamental computer science background to enter the program. Graduate policy precludes conditionally admitted students from taking 6000 level courses.		
7. All applicants will be subject to the approval of the Computer Science Graduate Committee.		
Discipline Core Requirements:		18 Credits
CS 6100	Database Management System Construction	3
CS 6150	Advanced Algorithms	3
CS 6300	Software Engineering Leadership	3
CS 6470	Machine Learning	3
CS 6500	Software Architecture	3

	CS 6700	Advanced Mathematics for Computer Science	3
Elective Requirements:			12 Credits
Pick 4 courses, or other departmental approved electives to complete either the Graduate Project or Graduate Coursework Option:			12
	CS 6400	Modern Databases (3.0)	
	CS 6480	Advanced Machine Learning (3.0)	
	CS 6510	Design and Simulation of Operating Systems (3.0)	
	CS 6600	Graduate Project I (3.0)	
	CS 6610	Graduate Project II (3.0)	
	CS 6620	Advanced Data Mining and Visualization (3.0)	
	CS 6730	Advanced Embedded Systems Engineering (3.0)	
	CS 6800	Computer Graphics and Mixed Realities (3.0)	

Graduation Requirements:

1. Completion of all courses with a grade of B- or better.
2. Graduate Project Option: Graduate project proposal presented to and accepted by the student's Advisory Committee.
3. Graduate Project Option: Completion and defense of graduate project (CS 6600 and CS 6610); defense must be accepted by the student's Advisory Committee.
4. Graduate Project Option: Completion of all required courses and elective courses for a total of 30 credit hours with an average GPA of 3.0 or higher.
5. Graduate Coursework Option: Completion of all required courses and elective courses (CS 6600 and CS 6610 do not count toward this option) for a total of 30 credit hours with an average GPA of 3.0 or higher.

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Computer Science, M.C.S. Graduation Plan

This graduation plan is a sample plan and is intended to be a guide. Your specific plan may differ based on your Math and English placement and/or transfer credits applied. You are encouraged to meet with an advisor and set up an individualized graduation plan in [Wolverine Track](#).

Milestone courses (pre-requisites for a course in one of the subsequent semesters) are marked in red and Italicized.

Semester 1	Course Title	Credit Hours	
	CS 6300	Software Engineering Leadership	3
	CS 6470	Machine Learning	3
	Semester total:		6
Semester 2	Course Title	Credit Hours	
	CS 6700	Advanced Mathematics for Computer Science	3
	Elective	Completion of Graduate Project Option or Graduate Coursework Option (CS 6600 and CS 6610 do not count toward this option).	3
	Semester total:		6
Semester 3	Course Title	Credit Hours	
	CS 6500	Software Architecture	3
	Elective	Completion of Graduate Project Option or Graduate Coursework Option (CS 6600 and CS 6610 do not count toward this option).	3
	Semester total:		6
Semester 4	Course Title	Credit Hours	
	CS 6150	Advanced Algorithms	3
	CS 6100	Database Management System Construction	3
	Semester total:		6
Semester 5	Course Title	Credit Hours	
	Elective	Completion of Graduate Project Option or Graduate Coursework Option (CS 6600 and CS 6610 do not count toward this option).	3
	Semester total:		3
Semester 6	Course Title	Credit Hours	
	Elective	Completion of Graduate Project Option or Graduate Coursework Option (CS 6600 and CS 6610 do not count toward this option).	3
	Semester total:		3
	Degree total:		30