COLLEGE OF ENGINEERNG AND TECHNOLOGY

COMPUTER SCIENCE DEPARTMENT

MASTER of COMPUTER SCIENCE (MCS) DEGREE

Catalog year 2026-2027

The Master of Computer Science (MCS) program at Utah Valley University is an applied graduate program. Graduates will have a comprehensive understanding of computer science and be prepared to assume software leadership roles across industries. The program emphasizes developing large software systems, while encouraging students to explore and leverage new technologies to address real-world challenges, built on a foundation of large-scale implementation, applied mathematics computing, machine learning and software engineering with electives.

REQUIRED COURSES 24 Credits		
COURSE NO	COURSE TITLE	CREDITS
CS 6510	Design and Simulation of Operating Systems	3.0
CS 6150	Advanced Algorithms	3.0
CS 6300	Software Engineering Leadership	3.0
CS 6470	Machine Learning	3.0
CS 6500	Software Architecture	3.0
CS 6700	Advanced Mathematics for Computer Science	3.0
CS 6960R	Advanced Software Development and Research Methods (take over two semesters – 3 credits each)	6.0
ELECTIVE COURSES 6 Credits		
Pick 2 courses:		
CS 6400	Modern Databases	3.0
CS 6100	Database Management System Construction	3.0
CS 6200	Cyberphysical Security	3.0
CS 6620	Advanced Data Mining and Visualization	3.0
CS 6460	Artificial Intelligence	3.0
CS 6480	Deep Learning	3.0
CS 6530	Computer Graphics and Mixed Realities	3.0
CS 6730	Advanced Embedded Systems	3.0
CS 6790R	Special Topics in Computer Science	3.0
	Total Credits	30.0

GRADUATION REQUIREMENTS:

1. Completion of all courses with a grade of B- or better.
2. Graduate Project:
   a. Graduate project proposal presented to and accepted by the student's Advisory Committee.
   b. Completion and defense of graduate project defense must be accepted by the student's Advisory Committee.
3. Completion of all required courses and elective courses for a total of 30 credit hours with an average GPA of 3.0 or higher.
4. All coursework must be completed within a six-year period.

Advisement: make an appointment with the MCS advisor:
https://appointments.uvu.edu/juliemarr

MCS Director: Professor Jingpeng Tang jtang@uvu.edu

ADMISSION REQUIREMENTS FOR THE MCS:

1. Complete online application at www.uvu.edu/mcs which includes a statement of purpose (essay).
   - What we are looking for:
     - What do you hope to achieve while working on your MCS?
     - How do you see the MCS at UVU meeting your needs and interests?
     - How does your undergraduate education and/or work experience contribute to your readiness to enter and complete the MCS?
2. Provide two letters of recommendation. Name and email address of professional references will be entered in the application.
3. Official transcripts from all colleges or universities attended. If requesting an electronic copy from your university, official transcripts must be emailed to etranscriptr@uvu.edu.
4. International transcripts must be evaluated by an approved foreign credential-evaluating company. See UVU Transfer for directions. International applicants must also submit the Affidavit of Support.
5. To be fully accepted into the MCS, you will need:

   - An overall grade point average of 3.0 or higher on a 4.0 scale.
   - An undergraduate degree in a computer-related field (computer science, computer engineering, software engineering, or a closely related field).

   - A grade of B- or better in the following UVU (or equivalent) classes:

     - 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

     These prerequisite courses may be fulfilled by taking the classes at UVU or at any other accredited college or university. Some prerequisites may also be completed via Pluralsight or gained via work experience. Please contact julie.marr@uvu.edu for further clarification if necessary.

6. International applicants whose native language is not English must have a TOEFL score of 4.5 (90) iBT or higher, or an IELTS band score of 6.0 or higher within the past two years.

   *Due to recent changes in how TOEFL scores are assessed, UVU will honor a TOEFL score of 80 (or higher) through December 31, 2028.

7. If you have any questions, contact the MCS Advisor (Julie Marr - Julie.marr@uvu.edu)

NOTE: Applicants found lacking some requirement may be conditionally admitted to the MCS. Conditionally admitted students will have an individualized MCS Leveling Plan (MCS LP) developed for them. 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 MCS. Graduate policy precludes conditionally admitted students from taking any 6000 level courses. The UVU Computer Science Department cannot waive or alter this graduate policy.