COLLEGE OF ENGINEERNG AND TECHNOLOGY

COMPUTER SCIENCE DEPARTMENT

MASTER of COMPUTER SCIENCE (MCS) DEGREE

Catalog year 2024-2025

The Master of Computer Science (MCS) at Utah Valley University (UVU) is an applied graduate program resulting in a professional degree. The Computer Science (CS) Department is offering an MCS rather than a Master of Science (MS) in Computer Science as the focus is on preparing students to enter the local, national, and global workforce as leaders and innovators rather than focusing on preparing students to conduct basic research.

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 large software systems using current technologies while allowing them the freedom to explore and exploit new technologies to solve real-world problems. This program is designed to be rigorous, relevant, and practical.

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 6600	Graduate Project I	3.0
CS 6610	Graduate Project II	3.0
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 6730	Advanced Embedded Systems	3.0
CS 6800	Computer Graphics and Mixed Realities	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 (CS 6600 Graduate Project I and CS 6610 Graduate Project II); defense must be accepted by the student's Advisory Committee.
   c. Completion of all required courses and elective courses for a total of 30 credit hours with an average GPA of 3.0 or higher.

Advisement: make an appointment with the MCS advisor by calling (801) 863-6521 or email Julie.Marr@uvu.edu.

MCS Director: Professor Jingpeng Tang (801) 863-8079 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?
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2. Pay application fee.

3. Once you have completed the application and paid the Admission fee, you will be directed as to how to submit transcripts and letters of recommendations.

4. Provide two letters of recommendation. Name and email address of professional references will be entered in the application.
    - What we are looking for:
        - Are you self-motivated?
        - Do you have a strong work ethic?
        - Are you willing to learn and can you accept criticism?
        - Do you have strong computer science skills even if your grades don't reflect this or you don't have a degree in computer science?
        - Are you a good leader or do you prefer to follow the lead of others?
        - Do you work well in groups or do you prefer to work alone?

5. Request official transcripts to be sent to **etranscriptr@uvu.edu**. Transcripts will be evaluated based on cumulative GPA or last 60 semester credits. **To be considered official**, transcripts must be submitted to UVU directly from a college or university.
    - What we are looking for:
        - 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 B+ or better in the following UVU or equivalent classes (this is the minimum set of classes we will accept):
            - 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
            - In some cases, the committee may require a candidate to take some upper division CS courses in addition to meeting the minimum requirements. Such cases may include:
                - borderline grades in relevant courses
                - not having an undergraduate CS degree and/or not currently working in the field
                - time away from academia or since directly using CS programming skills prompts the student to want or need additional preparation.

              This additional requirement has two benefits for the student and the program:

              It allows the student to demonstrate current skills, knowledge and ability to succeed.

              It allows the student to evaluate whether they are willing and able to commit the time and effort necessary to succeed in the MCS program at UVU, without committing to the full two-year program.
    - Students who feel they are prepared for the MCS but fail to meet all the requirements should address this issue in their statement of purpose.

6. For 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.

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.