COMPUTER SCIENCE M.S.

MASTER OF SCIENCE - COMPUTER SCIENCE

Degree Specific Credits: Thesis Option: 30; Project or Portfolio Option: 36

Required Cumulative GPA: 3.0

Requirements

- Once fully admitted to the program, students have three options to complete the degree: thesis, project, or portfolio. Each option the satisfactory completion of 24 to 30 credits of graduate-level Computer Science (CSCI) courses. See specific requirements for each option below.
- As many as 6 credits for the thesis option and 9 credits for project or portfolio options may be taken from other related departments if a petition for acceptance is approved by the faculty.
- 3 credits of independent study may be counted towards a degree without approval by faculty. More than 3 credits of independent study requires approval via petition.
- A GPA of 3.0 or greater with no individual grade below a C must be maintained each semester.
- Only 6 credits may be retaken.
- All degree requirements for the degree, including the use of transfer and non-degree credits, must be completed within five years.

Thesis, Project, or Portfolio Options

When choosing whether to complete a thesis, project, or portfolio as part of the degree requirements, students should carefully consider the differences between them. The following document helps explain the difference between the thesis and the portfolio as well as the process students should follow: Guidelines for MS Thesis and Project Work (https://www.umt.edu/computer-science/documents/thesis_guidelines.pdf). In addition, a student may opt to complete an e-portfolio rather than a thesis or project.

Thesis Option - 30 credits

- Satisfactory completion of at least 24 credits of graduate-level Computer Science (CSCI) courses. These will be 500-level, except for some 400-level courses with no 500-level equivalent. 400-level courses that are approved for graduate credit have "Level: Undergraduate-Graduate" in their course descriptions.
- Satisfactory completion of at least 6 additional credits of thesis/project (CSCI 599).
- Satisfactory presentation and defense of a formal thesis to the student's graduate committee.
- Students working towards a thesis must submit a proposed plan of research to the faculty no less than one semester before graduation. The length and scope of this proposal must be agreed upon with the student's primary thesis advisor.

Project Option - 36 credits

- Satisfactory completion of at least 30 credits of graduate-level Computer Science (CSCI) courses. These will be 500-level, except for some 400-level courses with no 500-level equivalent. 400-level courses that are approved for graduate credit have "Level: Undergraduate-Graduate" in their course descriptions.
- Satisfactory completion of at least 6 additional credits of thesis/project (CSCI 599).
- Satisfactory completion of a substantial software development project, a professional paper on that project, and a presentation of a formal defense of the project to the student's graduate committee.
- Students working towards a project must submit a proposed plan of research to the faculty no less than one semester before graduation. The length and scope of this proposal must be agreed upon with the student's primary project advisor.

Portfolio Option - 36 credits

- Satisfactory completion of at least 36 credits of graduate-level Computer Science (CSCI) courses of which at least 18 credits must be 500 level. These will be 500-level, except for some 400-level courses with no 500-level equivalent. 400-level courses that are approved for graduate credit have "Level: Undergraduate-Graduate" in their course descriptions.
- Satisfactory completion and presentation of an e-portfolio highlighting at least five examples of the student's best course work. The portfolio must be presented and defended in a manner consistent with UM graduate school standards for Master's defenses or projects (C.100-C.800 (http://catalog.umt.edu/graduate/school-policies/masters-degree/)).
- A detailed description of the e-portfolio requirements, including prerequisites, the necessary components of the e-portfolio, and how to present the final product can be found on the Portfolio option requirements (https://hs.umt.edu/cs/documents/portfolio_requirements.pdf) website.

Master's Proposal

All non-portfolio master's degree candidates must complete a proposal. This proposal should be done at least 9 months before the expected date of graduation. The proposal shall be completed in consultation with the candidate's adviser. The proposal must contain the following:

- A clear statement of the objective. Often, this is stated as a hypothesis, but in some cases, projects in particular, it may take the form of an objective with design criteria and constraints.
- A short review of prior or related work which includes at least three citations in the appropriate literature.
- A timeline for degree completion that includes a set of milestones leading to completion of the thesis or project.
- Identification of deliverables. Most often, this is a peer reviewed paper, but could also be a software product.

Each of the above bullet points should be addressed with at most two paragraphs. Once the candidate's adviser approves the contents of the proposal, it should be sent to all faculty via e-mail. The proposal is distributed to help the candidate identify potential committee members and not to allow faculty to formally assess the proposal.

Independent Study and Non-Computer Science Courses

Master's degree candidates may count as many as three non-Computer Science credits towards their master's degree course requirements. Requirements regarding the distribution of four and five hundred level courses apply to non-CS courses. Candidates may also count as many as 3 credits of independent study towards the course requirements, provided a CS faculty member is willing to supervise. Additional independent study and non-CS coursework may be counted towards requirements, but a petition supported by the student's adviser must be submitted to the

graduate program coordinator. If the petition is rejected, all CS faculty will have reviewed the petition.