COMPUTER SCIENCE M.S.

Master of Science - Computer Science

Degree Specific Credits:

Thesis Option: 30

Project Option: 36

Portfolio Option: 36

Required Cumulative GPA: 3.0

Masters Degree Requirements

Once fully admitted to the program, students have three options for the Master's degree: thesis, project, or portfolio. The requirements of each are:

Thesis Option (30 credits)

- Satisfactory completion of at least 24 credits of G- or UG-designated Computer Science courses (these will be 500-level, except for UG courses at the 400-level with no 500-level equivalent).
- At least 6 additional credits of CSCI 599 (Thesis/Project).
- Presentation and defense of a formal thesis to the student's graduate committee.

Requirements: When choosing whether to complete a thesis or a project as part of your M.S. degree requirements, you should carefully consider the differences between the two. The following document helps explain those differences as well as the process you should follow: Guidelines for MS Thesis and Project Work (https://www.umt.edu/computer-science/documents/thesis_guidelines.pdf).

Project Option (36 credits)

- Satisfactory completion of at least 30 credits of G- or UG-designated Computer Science courses (these will be 500-level, except for UG courses at the 400-level with no 500-level equivalent).
- At least 6 additional credits of CSCI 599 (Thesis/Project)
- Completion of a substantial software development project, a professional paper on that project, and presentation of a formal defense of the project to the student’s graduate committee.

Requirements: When choosing whether to complete a thesis or a project as part of your M.S. degree requirements, you should carefully consider the differences between the two. The following document helps explain those differences as well as the process you should follow: Guidelines for MS Thesis and Project Work (https://hs.umt.edu/cs/documents/thesis_guidelines.pdf).

Portfolio Option (36 credits)

- Satisfactory completion of at least 36 credits of G- or UG-designated Computer Science courses (these will be 500-level, except for UG courses at the 400-level with no 500-level equivalent).
- Students must create and present an e-portfolio highlighting at least five examples of their 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).

To fulfill the Masters degree requirements, you may opt to complete an e-portfolio rather than a thesis or project. The e-portfolio option assumes satisfactory completion of at least 36 credits of four or five hundred level Computer Science courses, of which at least 18 credits must be five hundred level. A detailed description of the e-portfolio requirements, including prerequisites, the necessary components of the e-portfolio, and how to present your final product can be found in Portfolio option requirements (https://hs.umt.edu/cs/documents/portfolio_requirements.pdf).

Additionally:

- All courses applied towards the degree must be marked UG or G in the catalog.
- As many as 6 UG or G credits for thesis, and 9 UG or G credits for project or portfolio option 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.
- Students working towards a thesis or 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 thesis or project advisor.
- 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 master’s degree, including the use of transfer and nondegree credits, must be completed within five years.

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 candidates may count as many as 3 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.