

Master's Degree Guidelines

There are four graduate degree programs within in the School of Computing (SoC) at the University of Utah:

- MS in Computer Science
- MS in Computing
- PhD in Computer Science
- PhD in Computing

A Computing degree is earned within a particular track. Each graduate student may enroll in one of those degree programs. Transfers between degree programs will be considered between semesters and will occur only once per academic year.

To remain in good standing, a student has to reach certain due progress milestones set by the SoC. For PhD students, a form specifying these milestones, as well as other necessary forms for graduate students, is posted on the Graduate Studies Committee website.

Independent study courses (CS 6950 and CS 7950) cannot be included in the Program of Study for the Ph.D. degree. Students may place out of this requirement by substituting or transferring courses from other institutions at the discretion of the TCF Chair.

The Program of Study form should be filed with the School of Computing in the second semester of study and with the Graduate School prior to taking the qualifying examination. The Program of Study form must be submitted to the Graduate Records Office no later than the last day of the semester proceeding the semester of graduation.

SoC Graduate Degrees

Master's Degrees:

Master's in Computer Science

Non-Thesis Master's in Computer Science

Master's in Computing

Tracks:

- Computer Engineering
- Information Technology
- Graphics and Visualization
- Robotics
- Data Management and Analysis

Ph.D. Degrees:

Ph.D. in Computer Science

Ph.D. in Computing

Tracks:

- Computer Engineering
- Graphics and Visualization
- Robotics
- Scientific Computing
- Data Management and Analysis

REGISTRATION REQUIREMENTS

Full-time graduate students in the School of Computing are ordinarily requested to register for 12 hours for TAs and 11 hours for RAs, which includes regular courses, seminars,

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and research credits as appropriate. This is especially the case for students being supported via research or teaching assistantships. Students who are not being supported by the school are required to take nine hours to be classified as full-time.

Graduate School policy dictates that a graduate student who receives a full tuition waiver during any semester in which he or she holds an assistantship, fellowship or traineeship is required to register for at least nine semester hours, including thesis research and seminars. Students must be registered for at least three hours per semester, exclusive of summer semester, to remain in a graduate degree program. Students who do not maintain continuous registration and who have not been granted a leave of absence by the Graduate School are subject to being discharged from the degree program.

Students doing theses or dissertations must be registered for at least three semester hours during the semester of the student's thesis defense. Once a student has passed the thesis defense, the student does not have to register the next term if within the 90-day period to turn in the final thesis.

COURSE REQUIREMENTS

All degree programs have certain course requirements. However, these represent a necessary, rather than sufficient, set of courses for graduation. To graduate, this coursework must appear on a student's approved program of study, a customized course plan developed by the student in conjunction with their committee.

Courses that count toward graduation must be on the program of study. The following restrictions apply to these courses:

- CS courses must have a course number of 6000 or above (CS 5470: Compiler Principles and Techniques will also be allowed)
- Non-CS courses must have a course number of 5000 or above
- A grade of B- or better
- The GPA for all required courses must be at least 3.0

A student may register for CS 6020 if that student writes and publishes a peer-reviewed article based on research performed in the University of Utah School of Computing. The contribution of the student to the article should be equivalent to that conferred by first authorship. The paper should be published in a respectable outlet. It is the responsibility of the student's advisor to determine whether the student has made such a contribution, and whether the outlet is of sufficient quality. This paper must be accepted for publication prior to the end of the second year of study.

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COURSE WAIVERS

A student may obtain a waiver for any of the required courses by demonstrating prior knowledge (e.g., completion of a similar course taken at another University). This waiver is obtained by petitioning the DGS. The waiver procedure should be initiated by first contacting the Graduate Coordinator. Waiving a required course does not reduce the 30 graduate credit hour requirement.

M.S. SUPERVISORY COMMITTEE

The M.S. Supervisory Committee consists of three members. At least two members must be SoC faculty. Any SoC regular faculty member may serve as a supervisory committee chair. Research or adjunct faculty may chair supervisory committees if accorded that privilege by the regular faculty. All official decisions of the committee are decided by majority vote.

M.S. COMPREHENSIVE EXAM

The M.S. comprehensive exam will be administered by the student's supervisory committee and can be coupled with a project or thesis proposal defense, and/or meeting a specified level of performance on a set of classes.

For students not doing a project or thesis, the comprehensive exam will typically be passed by meeting the grade requirements in required courses, but this can be modified at the discretion of the student's committee.

M.S. TRANSFER CREDIT

A student may not count more than nine semester hours of non-matriculated graduate work toward any graduate degree unless the student's registration for more than nine semester hours is specifically approved in advance by the SoC Director and the Dean of the Graduate School.

Graduate courses taken as an undergraduate at the University of Utah cannot be counted towards a degree program unless a petition for graduate credit was filed with the University's Registrar at the time the course was taken.

Students who have done graduate study at other institutions may transfer up to 6 semester hours to the University of Utah. The courses must be bona fide graduate level class

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work (e.g., independent study is excluded), with grade B- or better. Students must be able to show that the course work was not used toward any other degree.

Approval of each course is granted by the student's supervisory committee and the DGS. Course appropriateness is determined by consideration of course content and the student's declared research area. Approved courses are certified by a transfer credit form. Approval of a course taken elsewhere for transfer credit does not imply fulfillment of any specific required course.



M.S. THESES AND PH.D DISSERTATIONS

The supervisory committee must give preliminary approval of the thesis or dissertation prior to the defense. The defense can be scheduled after this approval. To schedule the defense, contact the Graduate Coordinator. Students are strongly encouraged to schedule the defense during a regular colloquium slot.

The student must provide one copy of the thesis or dissertation to the chair of the supervisory committee at least three weeks before the defense, and one copy to each of the other committee members at least two weeks prior to the defense. A complete draft of the thesis or dissertation must be delivered to the Graduate Coordinator one week prior to the announced time of defense. This copy will be made available for public access. Students are encouraged to place an additional copy on the School of Computing web pages at least one week prior to the announced time of defense.

After successfully defending the thesis or dissertation, the student must obtain approval from the Final Reader (typically the supervisory committee chair), School Director, and Dean of the Graduate School. A draft of the final thesis or dissertation must then be presented to the Thesis Editor. Successful completion of the defense must be reported to the Graduate School at least four weeks before the last day of examinations in the final semester.

Students should also read the document regarding copyright notices provided by the School and declare their intentions regarding granting the School the right to photocopy the thesis or dissertation before notifying the Graduate Coordinator of completion of the defense.

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The student has one month after the defense to make any revisions prior to submitting the thesis or dissertation to the Graduate School Thesis Editor. There will be at most two additional months to complete any changes required by the Thesis Editor before final acceptance. If either of these deadlines are not met, the candidate must redo the oral defense. The final thesis or dissertation must be filed one week before the end of the semester of graduation.

Students are expected to offer each committee member a bound copy of the thesis or dissertation once it is completed. Detailed policies and procedures concerning the thesis or dissertation are contained in "A Handbook for Theses and Dissertations" published by the Graduate School.

RESIDENCY

One year of study must be spent in full-time residency at the University (i.e., the student must enroll for a minimum of nine hours per semester for two consecutive semesters, summer optionally excluded). After the residency requirement is fulfilled, registration for three semester hours of CS 7970 (Ph.D. Dissertation Research) is considered a full load. At least 24 semester hours must be in resident study at the University of Utah.

LEAVE OF ABSENCE

If a student does not plan to take classes during a Fall or Spring semester, a leave of absence must be requested. Contact the Graduate Coordinator for the proper form.

MONITORING OF PROGRESS

Annual meetings and reports:
Each year the student will prepare a one-page summary of their progress and submit it to the advisory committee in prepara-



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GRADUATE STUDENT PROGRESS GUIDELINES FOR THE M.S. PROGRAM

Milestone	Good Progress	Acceptable Progress	Comments
Choose advisor	1 Semester	2 Semesters	
Full committee formed	2 Semesters	3 Semesters	
Program of study	2 Semesters	3 Semesters	
Complete required courses	3 Semesters	3 Semesters	Program requirement: 3 semesters
Defend proposal	3 Semesters	4 Semesters	U. requirement: 1 semester before defense
Thesis defense	4 Semesters	5 Semesters	
Final document			U. requirement: Within 3 months of defense

tion for a meeting that includes the student and advisory committee. The advisory committee will meet with the student and hear a presentation from the student and engage the student in a discussion about their progress in the program. A “meeting” in this context is some form of interactive communication between the student and the committee. The important aspect of this meeting is that the student and the committee be able to ask questions of one another and respond to those questions. In this document advisory committee refers to either the initial committee or full committee, depending on which committee is active during that particular part of the program.

The advisor will prepare a short report (approved by the advisory committee), which includes a checklist of milestones (using a form provided by the School). This report will

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comment on any milestone that is not met within the time frame denoted as "good." In the event that students have unmet milestones that have passed the "acceptable" time frame (as indicated in the guidelines), the advisory committee can either request an exception to keep the student in good standing (and justify the exception) or recommend that the student not be considered in good standing.

The advisory committee will also give an overall evaluation of the student's progress as acceptable, unacceptable, or borderline and make recommendations of what (if any) actions should be taken by the student and the department.

Actions by the DGS and the School: In the event that a student is found not to be in good standing (a decision made by the DGS based on reports from the advisory committee) one or more actions may be taken. For example, the School may assign the DGS to counsel the student, deny opportunities to serve as departmentally funded TA, discontinue tuition waiver benefits, or remove the student from the program. In the event that a faculty member fails to meet with advisory committees and report on their students, the DGS may elect to disallow this faculty to advise new students.

DEFENSE

Within three months of the dissertation defense, the student must receive final reading approval from the dissertation committee and the thesis editor. Failure to do so will result in probationary status and will require that the student re-defend the dissertation.



Master's and Ph.D. Defense

Action	Date	Recommendations
Thesis or dissertation proposal presented and passed	Prior to defense date	Committee guidelines
Possible defense date selected by committee	4 weeks prior to defense	Committee guidelines
Draft of dissertation or thesis sent to chair	4 weeks prior to defense	Committee guidelines
Draft to committee	3 weeks prior to defense	Committee guidelines
Message requesting approval of defense sent to committee by Graduate Coordinator	2 weeks prior to defense	School guidelines
Oral question and answer period after oral presentation	Day of defense	School guidelines
Document to Graduate Coordinator	10 days prior to defense	School guidelines
Abstract to Graduate Coordinator	10 days prior to defense	School guidelines
Posted on Web	10 days prior to defense	School guidelines
Meeting of committee to discuss issues and make recommendations	Day of defense	School guidelines
Signed final oral presentation document to Graduate Coordinator	Within days of defense	School guidelines
Thesis editor approval	3 months post defense	School guidelines

M.S. in Computing: Graphics & Visualization

A student may pursue an M.S. with a (1) course-only option or (2) a project option. The minimum number of credits for either option is 30 graduate level classes (this includes 5000 or 6000 level courses as designated by departments). For the project option, students must take at least 3 and up to 6 credits of MS project research. Total of MS project and independent study should add up to no more than 6 credits.

COURSE REQUIREMENTS: M.S. IN COMPUTING, GRAPHICS AND VISUALIZATION TRACK (COURSE ONLY OPTION)

Required courses:

CS 6610	Advanced Computer Graphics I
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CS 6630	Scientific Visualization
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CS 6670	Computer Aided Geometric Design
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CS 6640	Image Processing
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Three courses from the following list are required:

CS 6620	Advanced Computer Graphics II
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CS 6650	Image Synthesis
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CS 6360	Virtual Reality
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CS 6320	Computer Vision
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CS 6540	Human/ Computer Interaction
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CS 6960	Computational Geometry
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CS 6961	Fundamentals for Visual Computing
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Elective courses (to equal 30 total credit hours):

Graduate level CS courses and independent study (a maximum of three hours of independent study is allowed). Seminars cannot be counted.

With approval of the supervisory committee, a student may take two elective courses at the graduate level or higher from other departments, excluding independent study, seminars, research credit.

Thesis research hours are not counted toward the degree in the course-only option.

M.S. in Computing: Graphics & Visualization

COURSE REQUIREMENTS: M.S. IN COMPUTING, GRAPHICS AND VISUALIZATION TRACK (PROJECT OPTION)

Required courses:

CS 6610	Advanced Computer Graphics I
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CS 6630	Scientific Visualization
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CS 6670	Computer Aided Geometric Design
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CS 6640	Image Processing
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CS 6950	Independent Study (minimum three hours on project topic)
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Three courses from the following list are required:

CS 6620	Advanced Computer Graphics II
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CS 6650	Image Synthesis
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CS 6360	Virtual Reality
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CS 6320	Computer Vision
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CS 6540	Human/ Computer Interaction
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CS 6960	Computational Geometry
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CS 6961	Fundamentals for Visual Computing
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Elective courses (to equal 30 total credit hours):

Graduate level CS courses and independent study (a maximum of six hours of independent study is allowed). Seminars cannot be counted.

With approval of the supervisory committee, a student may take two elective courses at the graduate level or higher from other departments, excluding independent study, seminars, research credit.

Thesis research hours are not counted toward the degree in the project option.

M.S. in Computing: Graphics & Visualization

COURSE REQUIREMENTS: M.S. IN COMPUTING, GRAPHICS AND VISUALIZATION TRACK (THESIS OPTION)

Minimum 21 hours classroom courses and three hours of thesis research are required. Three of the following courses are required:

CS 6610	Advanced Computer Graphics I
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CS 6630	Scientific Visualization
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CS 6670	Computer Aided Geometric Design
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CS 6640	Image Processing
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Two courses from the following list are required:

CS 6620	Advanced Computer Graphics II
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CS 6650	Image Synthesis
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CS 6360	Virtual Reality
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CS 6320	Computer Vision
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CS 6540	Human/ Computer Interaction
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CS 6960	Computational Geometry
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CS 6961	Fundamentals for Visual Computing
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CS 6310	Introduction to Robotics
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Elective courses (to equal 30 total credit hours):

Graduate level CS courses and independent study. Seminars cannot be counted.

With approval of the supervisory committee, a student may take two elective courses at the graduate level or higher from other departments, excluding independent study, seminars, research credit.

A minimum of three hours of thesis research (CS 6970) is required.