# Master's of Science in Computer Science
**THESIS Option**
Revised May 2025

## Overview of Degree

The Master's of Science degree in Computer Science (Thesis Option) at School of Computing is a comprehensive program of study intended to give qualified and motivated students a thorough foundation in the theory, methodology, and techniques of Computer Science. Students who successfully complete this program of study will have a grasp of the principles and foundations of Computer Science. They will be prepared to pursue higher academic goals, including the Doctor of Philosophy degree. They will obtain skills and experience in up-to-date approaches to analysis, design, implementation, validation, and documentation of computer software and hardware. With these skills they will be well qualified for technical, professional, or managerial positions in government, business, industry, and education.

Prospective students are advised to consult The University of Georgia Graduate Bulletin for institutional information and requirements. See https://bulletin.uga.edu/

## Admission Requirements

In addition to the general University of Georgia policies set forth in the Graduate Bulletin, the following School of Computing policies apply to all applicants:

1. A Bachelor's Degree is required, preferably with a major in Computer Science or an allied discipline. Students with insufficient background in Computer Science must take undergraduate Computer Science courses to remedy any deficiencies (in addition to their graduate program). A sufficient background in Computer Science must include at least the following courses (or their equivalent):

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| MATH 2250 | Calculus I (Differential Calculus) |
| CSCI 1301 | Introduction to Computing and Programming |
| CSCI 1302 | Software Development |
| CSCI 1730 | Systems Programming |
| CSCI/MATH 2610 | Discrete Mathematics for Computer Science |
| CSCI 2670 | Introduction to Theory of Computing |
| CSCI 2720 | Data Structures |

2. Admission to this program is selective; students with a record of academic excellence have a better chance of acceptance. Students with exceptionally strong undergraduate records may apply for admission to the graduate program prior to fulfilling all of the above requirements.

3. Graduate Record Examination (GRE) test scores are optional for graduate CSCI programs. International applicants requireTOEFL or IELTS official test scores. Duolingo scores are no longer accepted.

4. Three (3)letters of recommendation are required, preferably written by university professors familiar with the student's academic work and potential. If the student has work experience, one letter may be from his/her supervisor. Letters should be sent directly from the letter writer to the Graduate School application portal.

5. A one- or two-page (1-2 page) personal statement outlining the student's background, achievements, and future goals is required.

6. A recent resume is required.

**Graduate School Requirements**

Additional requirements are specified by the Graduate School (application fee, general application forms, all transcripts, etc.). Please see the University of Georgia Bulletin for further information. Detailed admissions information may be found at Graduate School Admissions. Printed information may be obtained by contacting the

University of Georgia Graduate School
Brooks Hall,
310 Herty Drive,
Athens, GA 30602

phone: 706-542-1739
fax: 706-425-3094
e-mail: gradadm@uga.edu

Applications are processed on a year round basis. Students can be admitted for either semester (Fall or Spring). Please visit the Graduate School for application submission deadlines.

## Curriculum

The curriculum consists of at least **30 credit hours** of resident graduate coursework. This includes the following five items:

1. at least total **12 credit hours** of Core CSCI graduate coursework at the 6000-level (see "Core Curriculum" below);

2. at least total **8 credit hours** of Advanced CSCI graduate coursework at the 6000/8000-level (see "Advanced Coursework" below); the above (items #1 & #2) must include 12 credit hours of coursework open only to graduate students, exclusive of 6950 and 8990, as per Graduate School Policy; must take minimum 4 credits hours at 8000 level.

3. at least **1 credit hour** of CSCI 8990 Research Seminar (see "Research Seminar" below);

4. at least **6 credit hours** of CSCI 7000 Master's Research (see Master's Research below);

5. at least **3 credit hours** of CSCI 7300 Master's Thesis (see Master's Thesis below).

Typically, full-time students will take 9 to 15 hours per semester. See the CSCI section of the University of Georgia Bulletin for course descriptions. A program of study should be a coherent and logical whole; it requires the approval of the student's major professor, the student's advisory committee, and the departmental graduate coordinator.

Note: **no course with a grade of C+ or lower may be included on the student's Program of Study** (see the Graduate Bulletin for other GPA constraints). All CSCI courses must be B- or better.

### Core Curriculum (Item #1)

At least one course from each of the following three groups must be taken:

Group 1: Theory
- CSCI 6470 Algorithms
- CSCI 6480 Approximation Algorithms
- CSCI 6610 Automata and Formal Languages

Group 2: Software Design
- CSCI 6050 Software Engineering
- CSCI 6370 Database Management
- CSCI 6570 Compilers

Group 3: System Design

CSCI 6720 Computer Systems Architecture
CSCI 6730 Operating Systems
CSCI 6760 Computer Networks: Technology and Application
CSCI 6780 Distributed Computing Systems

The core curriculum consists of a total of **12 graduate credit hours**.

**Core Competency**

Foundational computer science knowledge (core competency) in the core areas (Groups 1, 2, and 3, above) must be exhibited by each student and certified by the student's advisory committee. This takes the form of achievement in core curriculum and completion of a short essay in their chosen area of research demonstrating technical writing and organization skills. A grade average of at least 3.30 (e.g., B+, B+, B+) must be achieved for the three core courses. Students below this average may take an additional core course and achieve a grade average of at least 3.15 (e.g., B+, B+, B, B).

Core competency is certified by the unanimous approval of the student's Advisory Committee as well as the approval by the Graduate Coordinator. The student's advisory committee manages the core competency in cooperation with the student. Students are required to meet the core competency requirement within their first two enrolled academic semesters (excluding summer semester). **Core Competency Certification must be completed before approval of the Program of Study.**

Note: a course used to fulfill part of the core requirement (Item #1) may not be used to also fulfill part of the advanced coursework requirement (Item #2).

**Advanced Coursework (Item #2)**

Students must take at least **8 credit hours** of advanced CSCI graduate student only coursework. This includes at least **4 credit hours at the 8000-level** (i.e., at least one 8000-level course).

Note: a student may satisfy this 8 hour requirement using only 8000-level courses, or with 4 hours of 8000-level coursework and 4 hours of 6000-level coursework. In the case that a student uses a 6000-level course for advanced coursework, that course must be a graduate student only course. In no case shall a 6000-level course used to fulfill part of the advanced coursework requirement count toward the advanced coursework requirement AND the core curriculum requirement. In addition, neither CSCI 8990 nor CSCI 6950 may be used to fulfill this requirement.

**Research Seminar (Item #3)**

All students must take **1 credit hour** of CSCI 8990 Research Seminar, in which they must attend weekly meetings of a research seminar and give presentations. Contact School of Computing for course access.

**Master's Research (Item #4)**

The Master's research involves the student's investigations under the supervision of his/her major professor and requires the approval of the major professor and the advisory committee. The Master's research often includes original research into some area of Computer Science. It must demonstrate mastery of a particular area of Computer Science. The candidate's advisory committee assures that the quality of the research meets the standards of the School of Computing and the Graduate School. The candidate must register for **CSCI 7000 Master's Research** for at least **6 credit hours** while working on the project.

**Master's Thesis (Item #5)**

The thesis is a report of the student's investigations under the supervision of his/her major professor and requires the approval of the major professor and the advisory committee. The thesis must demonstrate competent style and organization, and communicate technical knowledge. The thesis often includes original research into some area of Computer Science. It must demonstrate mastery of a particular area of Computer Science. The candidate's advisory committee assures that the quality of the thesis meets the standards of the School of Computing and the Graduate School. The candidate must register for **CSCI 7300 Master's Thesis** for at least **3 credit hours** while working on the thesis.

**Advisory Committee**

The advisory committee will consist of one major professor and two additional members. At least two of the three members must be from the School of Computing. The Graduate Advisory Commitee is selected by the student through the Enrolled Student Progress Portal (https:// gradapply.uga.edu/portal/my_progress/ This submission is reviewed by the Graduate Coordinator and Graduate School.

**Program of Study**

Forms can be found https://grad.uga.edu/current-students/forms/. Courses will be listed in the order taken and must contain at least 12 semester hours of credit ( exclusive of 7000 and 7300) in courses open to graduate students only. A maximum of 6 semester of 7000 may apply to the minimum 30 semester hours. Minimum number of thesis hours (7300) is 3 semester hours.

**Non-Departmental Requirements**

GRSC 7001 GradFIRST Seminar is required for all graduate students at University of Georgia. This course must be taken in semester 1 or semester 2. This course may be offered by School of Computing faculty in fall/spring. The course is not repeatable.

Non-departmental requirements are set forth by the Graduate School (see the Graduate Bulletin). They concern residence, time limits, programs of study, acceptance of transfer credits, minimum GPAs, thesis, and final examination.

**Thesis Defense**

After all coursework has been completed and the thesis has been approved by the student's major professor, the thesis is transmitted to the advisory committee at least two weeks before the thesis defense date. The thesis defense is an oral examination conducted by the student's advisory committee. All members of the advisory committee must be present at the defense. The advisory committee members including the major professor must vote on whether the student passed the defense and record their votes on the Approval Form for Master's Thesis Defense. To pass the exam, at least two of the three votes must be passing.

**Graduation Requirements**

A student admitted to the M.S. degree program will be advised by the Graduate Coordinator until a Major professor is chosen. Before the end of the second semester in residence, a student must begin submitting to the Graduate School, following forms: (i) a Program of Study Form and (ii) Graduate Advisory Committee Form. The Program of Study Form indicates how and when degree requirements will be met and must be formulated in consultation with the student's major professor. An Application for Graduation Form must also be submitted in Athena in the final term.

Forms and Timing must be submitted as follows:

1. Graduate Advisory Committee Form (Enrolled Student portal)- end of second semester
2. Core Competency Form (Departmental) - beginning of third semester
3. Program of Study Form (G138) – semester before the student's last semester
4. Application for Graduation Form (Athena) - beginning of last semester
5. Approval Form for Master's Thesis - last semester
6. ETD Submission Approval Form (G129) - last semester

See "Important Dates and Deadlines" on the Graduate School's website.