

# COMPUTER SCIENCE, MS

The University of Alabama's Computer Science Department offers interdisciplinary graduate programs leading to master's and doctoral degrees.

Students in the master's degree program may pursue either a thesis or non-thesis option.

Research activity in the department includes active investigations in software engineering, cyber security, big data analytics, distributed autonomy and human-computer interaction, autonomous vehicles, networking and its applications, and computer science education.

## Admissions

In addition to meeting the admission requirements established by the Graduate School, students applying for graduate study in the department must also meet the following general requirements:

- Demonstrated competence in programming
- Completion of the equivalent of the department's undergraduate core computer science curriculum
- Grades earned in all prior computer science courses must be above the grade of C+
- It is strongly recommended that students who wish to be considered for funding opportunities submit a score from the GRE general exam.

See the Admission Criteria section of this catalog for more information.

## Curricular Requirements

### Master of Science

Departmental degree requirements for the MS degree, which are in addition to those established by the College and by the Graduate School, are as follows for Plan I and Plan II students:

- Each Plan I candidate must earn a minimum of 24 semester hours of credit for coursework, plus a six-hour thesis under the direction of a faculty member.
- Each Plan II candidate must earn a minimum of 30 semester hours of credit for coursework, which may include a three-hour non-thesis project under the direction of a faculty member.
- Unlike the general College of Engineering requirements, graduate credit may not be obtained for courses at the 400-level.

### Master of Science - Thesis Option (Plan I)

Code and Title	Hours
<b>Core Course Requirements</b>	
Select One Course from each of the Three Areas	
Software Courses:	3
CS 503 Programming Languages	
CS 507 Software Interface Design	
CS 516 Testing and Quality Assurance	
CS 520 Software Evolution	
CS 544 Software Security	
CS 545 Software Reverse Engineering	
CS 630 Empirical Software Engineering	
Systems Courses:	3
CS 538 Computer Comm & Networks	

CS 548 Network Security	
CS 567 Computer Systems Architecture	
CS 581 High Performance Computing	
CS 606 Analys Operating Systems	
CS 613 Adv Computer Comm & Networks	
CS 618 Wireless Mbile Netwrk Protocl	
Theory Courses:	3
CS 570 Computer Algorithms	
CS 575 Formal Languages & Machines	
<b>Thesis Course Requirements</b>	<b>6</b>
CS 599 Thesis Research	
<b>Elective Courses</b>	<b>15</b>
Any graduate-level CS course. No more than 12 hours total can come from:	
CS 591 Special Topics In CS	
CS 592 Independent Study	
CS 691 Special Topics	
CS 692 Independent Study	
Courses taken outside of CS are subject to the approval of the student's advisor and the Graduate Program Director	
<b>Total Hours</b>	<b>30</b>

### Master of Science - Non-Thesis Option (Plan II)

Code and Title	Hours
<b>Core Course Requirements</b>	
Select One Course from each of the Three Areas	
Software Courses:	3
CS 503 Programming Languages	
CS 507 Software Interface Design	
CS 516 Testing and Quality Assurance	
CS 520 Software Evolution	
CS 544 Software Security	
CS 545 Software Reverse Engineering	
CS 630 Empirical Software Engineering	
Systems Courses:	3
CS 538 Computer Comm & Networks	
CS 548 Network Security	
CS 567 Computer Systems Architecture	
CS 581 High Performance Computing	
CS 606 Analys Operating Systems	
CS 613 Adv Computer Comm & Networks	
CS 618 Wireless Mbile Netwrk Protocl	
Theory Courses:	3
CS 570 Computer Algorithms	
CS 575 Formal Languages & Machines	
<b>Elective Courses</b>	<b>21</b>
Any graduate-level CS course. No more than 12 hours total can come from:	
CS 591 Special Topics In CS	

CS 592	Independent Study
CS 691	Special Topics
CS 692	Independent Study
Courses taken outside of CS are subject to the approval of the student's advisor and the Graduate Program Director	
<b>Total Hours</b>	<b>30</b>

## Transfer Credit

Information on transfer credit can be found here.

## Accelerated Master's Program

Computer Science and Cyber Security students can learn more at the Graduate School AMP Program page which can be accessed here.

## Comprehensive Exam

The student will complete a comprehensive exam. This exam is scheduled with the Graduate Program Director in the semester in which the student intends to graduate.

## Plan I - Thesis Process Requirements

- The student must select a thesis advisor and a thesis committee. The committee must contain at least four members, including the thesis advisor. At least two members are faculty of the Computer Science department, and at least one member must be from outside the Department of Computer Science.
- The student must develop a written research proposal that contains an introduction to the research area, a review of relevant literature in the area, a description of problems to be investigated, an identification of basic goals and objectives of the research, a methodology and timetable for approaching the research, and an extensive bibliography.
- The student must deliver an oral presentation of the research proposal, which is followed by a question-and-answer session that is open to all faculty members and which covers topics related directly or indirectly to the research area. The student's committee will determine whether the proposal is acceptable based upon both the written and oral presentations.
- The student must develop a written thesis that demonstrates that the student has performed original research that makes a definite contribution to current knowledge. Its format and content must be acceptable to both the student's committee and the Graduate School.
- The student must defend the written thesis. The defense includes an oral presentation of the thesis research, followed by a question-and-answer session. The student's committee will determine whether the defense is acceptable.

## Plan II - Non-Thesis Process Requirements

- The student may elect to replace 3 hours of course work with 3 hours of CS 598 Non-Thesis Research.
- The non-thesis research should be proposed in writing in advance, approved by the instructor, and a copy placed in the student's file.
- The non-thesis proposal should specify both the course content and the specific deliverables that will be evaluated to determine the course grade.

## Time Limits for Degree Completion Requirements

Information on time limits for degree completion can be found here.

## Student Progress Requirement

Student progress requirements are located here.

## Academic Misconduct Information

Academic Misconduct information can be found here.

## Withdrawals and Leave of Absence Information

Information regarding withdrawals and leave of absences is located here.

## Academic Grievances Information

Scholastic Grievances information is located here.

## Grades and Academic Standing

Scholastic Requirements information is located here.

## Graduate School Deadlines Information

Graduate School deadlines can be found on the Graduate School website.

## Application for Graduation Information

Master's degree application information can be found here.