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
Core Course Requirements
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       Analy s Operating Systems
CS 613       Adv Computer Comm & Networks
CS 618       Wireless Mobile Network Protocol
Theory Courses:         3
CS 570       Computer Algorithms
CS 575       Formal Languages & Machines

Thesis Course Requirements        6
CS 599       Thesis Research

Elective Courses        15
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

Total Hours          30

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

Code and Title          Hours
Core Course Requirements
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       Analy s Operating Systems
CS 613       Adv Computer Comm & Networks
CS 618       Wireless Mobile Network Protocol
Theory Courses:         3
CS 570       Computer Algorithms
CS 575       Formal Languages & Machines

Elective Courses        21
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

| Total Hours | 30 |

**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.