

COMPUTER SCIENCE, BS

Computing touches everyone's daily lives – the results of computer scientists can be found not only in video games, smartphones and the latest animated movie, but can also be found in automobiles, airplanes, and commonly used appliances such as microwaves, televisions, and most other electronic devices. Through studying computer science, students develop and extend logical thinking and problem-solving skills useful in many career roles. Graduates in computer science will be prepared for admission to graduate study or for immediate employment in business, industry, or government positions involving computer systems and techniques.

Accreditation

Information can be found on Department website.

Students earning the Bachelor of Science in Computer Science (BS) degree must complete all University, College and departmental degree requirements for a total of 120 credits. These include General Education requirements and the following major requirements and ancillary requirements. Additional information, including a semester-by-semester flowchart of degree requirements, can be found on the departmental website. Students completing the Bachelor of Science in Computer Science (BS) degree must comply with all College of Engineering academic policies and requirements.

Major and Ancillary Requirements

Major Courses

| | Hours |
|---|-------|
| ENGR 101 The World of Engineering | 1 |
| ENGR 104 Fundamentals of Engineering | 3 |
| CS 100 or CS 110 CS I for Majors Honors CS I for Majors | 4 |
| CS 101 or CS 111 CS II for Majors Honors CSII for Majors | 4 |
| CS 200 Software Design & Engineering | 4 |
| CS 201 Data Structures and Algorithms | 4 |
| CS 301 Database Management Systems | 3 |
| CS 338 Networking and OS | 3 |
| CS 403 Programming Languages | 3 |
| CS 470 Computer Algorithms | 3 |
| CS 495 Capstone Computing | 3 |
| ECE 380 Digital Logic | 4 |
| ECE 383 Microcomputers | 4 |
| Computer Science 400 Level Elective | 15 |

Any CS 400 to 492 course, except CS 404, not completing other Major and Ancillary requirements. (CS 330 or CS 492 can be used to satisfy 3 credit hours of this requirement. Both cannot be used.)

Credit Hours Subtotal: 58

Ancillary Courses

| | |
|---|---|
| GES 255 or MATH 355 Engineering Statistics I Theory Of Probability | 3 |
| MATH 125 or MATH 145 Calculus I Honors Calculus I | 4 |
| MATH 126 or MATH 146 Calculus II Honors Calculus II | 4 |
| MATH 237 Introduction to Linear Algebra | 3 |

| | |
|-------------------------------|---|
| MATH 301 Discrete Mathematics | 3 |
| Approved Science | 8 |

Any core curriculum Natural Science designated course except BSC 108, BSC 109, CH 104, CH 105, or PH 115.

| | |
|--|----|
| Free Elective | 12 |
| Mathematics courses below MATH 125, US and Global Citizenship designated courses, and courses already completing degree requirements cannot be used to fulfill this requirement. | |

Credit Hours Subtotal: 37

General Education Courses

The specific courses each student completes in order to fulfill the University of Alabama's general education requirements will depend upon the particular degree program in which the student is enrolled. To determine how these general education requirements are integrated into your program of study, review your semester-by-semester flowchart and discuss with your academic advisor.

Computer Science majors cannot earn an additional major in Cyber Security.

Concentration in Cyber Security

In addition to the standard Bachelor of Science in Computer Science degree, the department offers a concentration in Cyber Security. This concentration will give students a deeper understanding of Cyber Security, a sub-discipline of Computer Science. This concentration requires 9 hours of Cyber Security classes, chosen from the list below. Students who successfully complete this concentration will have the designation indicated on their transcripts.

| Select 9 hours (3 courses) from the list below: | Hours |
|---|-------|
| CS 428 Computer Security | 3 |
| CS 438 Computer Comm & Networks | 3 |
| CS 442 Cryptography | 3 |
| CS 443 Digital Forensics | 3 |
| CS 444 Software Security | 3 |
| CS 445 Software Reverse Engineering | 3 |
| CS 448 Network Security | 3 |

This concentration does not require the student to take more than the 120 hours required for the Computer Science (B.S.) degree. All nine of the course hours required for the concentration replace nine hours of CS electives in the Computer Science (B.S.) curriculum.

Students with a computer science degree may work in a traditional software company such as Google, Microsoft or IBM or in many industries driven by automation needs.

Types of Jobs Accepted

Our students primarily are employed in the computer industry as software developers, software engineers and security and program analysts. Recent graduates are employed at places such as Amazon, Google, Intergraph, IBM, ADTRAN, Southern Company, and AT&T.

Jobs of Experienced Alumni

Our students advance to positions such as owner of their own company, software designer, network engineer and IT/IS supervisory roles. These

jobs involve the direction and management of large-scale software development projects and their deployment.

Learn more about opportunities in this field at the Career Center