Computer Science and Software Engineering

Computer Science

The computer science curriculum, which leads to the bachelor of science in computer science degree, provides an excellent preparation for students seeking careers as software professionals and in computing-related fields, as well for those planning to pursue graduate study. The curriculum builds on a strong foundation in science, mathematics, social sciences, humanities and computer science with advanced course work in theoretical computer science, human-computer interaction, and net-centric computing. Course work ensures that students receive hands-on exposure to a variety of computer systems, tools and techniques. Elective courses allow students to specialize in core areas of computer science such as networking, database systems, and artificial intelligence. In addition, students select a concentration of 9 semester credit hours outside computer science (e.g., business, mathematics, physics, etc.). This concentration enriches students’ educational experience and adds breadth of knowledge by providing an opportunity to explore a second field of study to which computer science can be applied. The curriculum also emphasizes oral and written communication skills, the importance of ethical behavior, and the need for continual, lifelong learning. The overall educational objectives of the Computer Science program are for graduates of the program to attain success in their chosen profession and/or post-undergraduate studies.

The Computer Science degree program is accredited by: Computing Accreditation Commission of ABET 111 Market Place, Suite 1050 Baltimore, MD 21202-4012 (telephone: 410-347-7700).

Software Engineering

The focus of the software engineering curriculum, which leads to the bachelor of software engineering, is on the analysis, design, verification, validation, construction, application, and maintenance of software systems. The degree program prepares students for professional careers and graduate study with a balance of computer science theory and practical application of software engineering methodology using modern software engineering environments and tools. The curriculum is based on a strong core of topics including software modeling and design, construction, process and quality assurance, intelligent and interactive systems, networks, operating systems, and computer architecture. The curriculum also enriches each student’s general education with a range of courses from science, mathematics, the humanities and the social sciences. Through advanced elective courses, the curriculum allows students to specialize in core areas of computer science and software engineering. Engineering design theory and methodology, as they apply to software systems, form an integral part of the curriculum, beginning with the first course in computing and culminating with a comprehensive senior design project, which gives students the opportunity to work in one or more significant application domains. The curriculum also emphasizes oral and written communication skills, the importance of ethical behavior, and the need for continual, life-long learning. The overall educational objectives of the Software Engineering program are for graduates of the program to attain success in their chosen profession and/or post-undergraduate studies.

The software engineering program is accredited by: The Engineering Accreditation Commission of ABET 11 Market Place, Suite 1050 Baltimore, MD 21202-4012 (telephone: 410-347-7700).

Majors

• Computer Science (http://bulletin.auburn.edu/undergraduate/samuelginncollegeofengineering/departmentofcomputerscienceandsoftwareengineering/computerscience_major)
• Software Engineering (http://bulletin.auburn.edu/undergraduate/samuelginncollegeofengineering/departmentofcomputerscienceandsoftwareengineering/softwareengineering_major)
• Wireless Engineering (Hardware Option) (http://bulletin.auburn.edu/undergraduate/samuelginncollegeofengineering/departmentofelectricalandcomputerengineering/wirelessengineeringhardware_major)
• Wireless Engineering (Software Option) (http://bulletin.auburn.edu/undergraduate/samuelginncollegeofengineering/departmentofelectricalandcomputerengineering/wirelessengineeringsoftware_major)

Minor

• Computer Science (http://bulletin.auburn.edu/undergraduate/samuelginncollegeofengineering/departmentofcomputerscienceandsoftwareengineering/computerscience_minor)
• Information Technology (http://bulletin.auburn.edu/undergraduate/samuelginncollegeofengineering/departmentofcomputerscienceandsoftwareengineering/infotechnology_minor)