

B.S. in Computer Science

Curriculum

The curriculum consists of a set of core courses covering such areas as:

- discrete mathematics;
- calculus and linear algebra;
- probability and statistics;
- object-oriented programming;
- data structures and algorithms;
- computer architecture and hardware fundamentals;
- computer science theory;
- design and analysis of algorithms;
- software engineering;
- programming languages;
- operating systems.

Advanced Electives

In addition to the core pillars of computer science, students will choose from over 30 electives on a wide variety of topics including computer game development, computer animation, robotics, artificial intelligence, database systems, object-oriented design, data communication and networking, cyber-security, mobile and web development, distributed systems, human-computer interaction and more.

Specializations

In order to give Computer Science majors the opportunity to concentrate, optional specializations have been added to provide a solid foundation in some fundamental area of computer science. The areas of specialization are:

- artificial intelligence;
- cyber-security;
- graphics and visualization;
- mobile applications development;
- information technology;
- networking and operating systems;
- programming languages and compilers;
- software engineering.

For more information about the B.S. program, please contact:

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About this program

Rowan's Computer Science program focuses on developing flexible professionals who are equipped to learn new technologies and principles that are essential for success in such a rapidly evolving field. As a student, you'll learn how to apply advanced scientific and industrial methodologies to develop computing solutions and demonstrate these skills through presentations, written work and projects. Faculty members often involve students in their research as well as industry-sponsored projects.

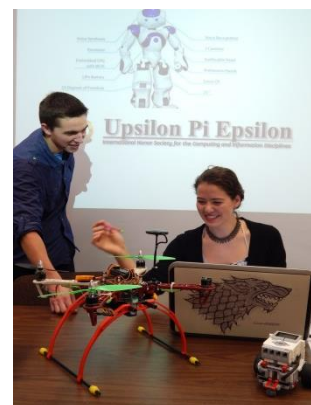
Our department provides the highest quality instruction in the theory and practice of computer science. We're committed to creating a student-centered learning environment that promotes close student-faculty relationships and enhances intellectual development. Faculty members often serve as mentors helping students develop career goals.

The B.S. degree in Computer Science has been accredited by the Computing Accreditation Commission of ABET, Inc., the recognized accreditor of college and university programs in applied science, computing, engineering, and engineering technology. ABET accreditation demonstrates a program's commitment to providing its students with a quality education.

How does this program prepare its graduates?

Computer scientists are employed as systems programmers, application programmers (business, scientific, industrial, etc.), systems analysts, programmer analysts, researchers, network specialists, computer system designers, educators and in computer sales. Opportunities exist in business, industry, government, education and the military. Many graduates enter graduate school for further study of computer science. This program prepares its graduates to pursue careers in computing, perform as effective team members, communicate effectively, and value the pursuit of continuing professional development through student learning outcomes on:

- effective oral, written, technical, and team communication;
- ethical and professional training;
- algorithms and data structures;
- software development;
- proficiency in programming and software development;
- exposure to multiple languages and platforms;
- foundations of theoretical computing;
- hardware and operating systems;
- working in teams and producing effective team work;
- analysis and design;
- researching and writing technical papers.



Opportunity to earn a Master's Degree with one additional year

The B.S. degree normally can be completed in four years; however, highly motivated and most skilled students have the opportunity to streamline their academic career and earn a bachelor's degree and a master's degree in five years rather than six. This "4+1" program requires 12 credits fewer to receive both degrees than when obtaining them separately. Hence it saves students both time and tuition! The MS in BS program allow students to pursue either a thesis track or a non-thesis track to complete the degree requirements.

Research and Internship Opportunities

The faculty conduct research in many areas of computer science including cybersecurity and cryptography, computer networks, compiler design, software engineering, artificial intelligence, data mining and pattern recognition, computer graphics, theory of computer science, simulation and visualization, and others.

Our students are currently engaging in such research activities and industry-sponsored projects as developing applications for the Federal Aviation Administration, creating innovative and flexible customer loyalty programs, engineering unmanned quadcopters for the Civil Air Patrol, utilizing machine learning algorithms for pharmaceutical data analysis, developing mobile applications for our School of Medicine, and more.