

College of Liberal Arts & Sciences

Contact

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Admission Requirements

(In years as established by the college)

A high school diploma with the following specific courses:

- 4 English
- 2 Algebra I & II
- 1 Geometry
- 2 Lab Science (*including biology*)
- 2 History/Social Studies
- 2 Foreign Language (*same language or two years of American Sign Language-ASL*)
- Academic electives (*to equal at least 17 total credits*)

To ensure current mathematical skills, students should take a mathematics course during their senior year of high school.

Major Requirements

BACHELOR OF ARTS

- 47 credits Computer Science
- 9 credits Communications (*English, writing, speech*)
- 6 credits ECO 120/121
- 10 credits Mathematics
- 18+ credits Completion of an approved minor (*outside computer science*)
- 9 credits upper level Arts & Humanities & Social Sciences

Plus College and B.A. degree requirements.

BACHELOR OF SCIENCE

- 53 credits Computer Science
- 9 credits Communications (*English, writing, speech*)
- 30 credits Arts & Humanities & Social Sciences (*6 in each area and 6 hours upper level*)
- 30 credits Sciences & Mathematics

Plus College and B.S. degree requirements.

120 Minimum total credit hours required for graduation

Program Description

Computer science is the foundation of computing and information technology. Computer science spans the spectrum from the fundamentals of the theory of computation and algorithms through the core areas of computer networks, computer graphics, databases, artificial intelligence, high-performance computing, software engineering, cybersecurity, operating systems, programming languages, and computer organization and architecture. Computer science overlaps with the other sciences to form the fields of computational biology and bioinformatics, medical informatics, computational chemistry, cognitive science, robotics, and computational linguistics, among others. A knowledge of computer science, beyond simply knowing how to implement and use information systems, is increasingly important in medicine, business, law, and the sciences. In addition to solving problems in its own right, computer science creates the knowledge used by allied fields such as information systems and management information science to solve more applied problems.

The undergraduate programs of the Department of Computer Science give students a strong foundation in core areas of computer science. This allows students to meet the demands of graduate school or the workplace upon graduation. It also provides students with the flexibility to keep pace with the ever-changing state of computing and information technology and to apply their knowledge wherever information technology is used. Students learn to program, and they complete several large programming projects throughout the course of their studies. However, the focus of the curriculum is on basic principles that must be considered when designing the software systems that make computers work effectively and efficiently.

In our courses, students explore basic principles in a wide variety of areas of computer science, including: algorithm design and analysis, networks, operating systems, databases, high-performance computing, software engineering, computer organization and architecture, programming language design, artificial intelligence, graphics, computational modeling, and cybersecurity. The B.S. degree in Computer Science is accredited by the Computer Science Accreditation Commission (CSAC) of the Computing Sciences Accreditation Board (CSAB), a specialized accrediting body recognized by the Commission on Recognition of Postsecondary Accreditation (CORPA).

Computer Science students routinely work in our department's research laboratories on problems related to artificial intelligence, databases, high-performance computing and cybersecurity. Computer Science students must complete a capstone project or an internship. Computer Science students have completed internships at UNUM Corporation, the Department of Defense, Argonne National Laboratory, IBM, First Light Technology, and DeLorme, among others.

Career Opportunities

Rewarding, high-paying employment opportunities for graduates with a Computer Science degree are available in the computer industry. Graduates with Computer Science degrees are qualified to hold jobs that are relatively immune to outsourcing. Graduates can also apply their knowledge wherever computers are used, including businesses, research institutions, educational institutions, and government laboratories and agencies. Since computer science technology and its applications change so rapidly, the degree is an excellent choice for those who wish to start their own business. Because our Computer Science programs combine a rigorous emphasis on computer science with a strong liberal arts education, students are well-prepared to enter any career that requires a liberal arts degree. Graduates of Computer Science are also well-prepared to enter graduate school for further study in computer science or other related fields.

General Education Requirements*

ENG 101	College Composition
18 credits	Human Values & Social Context area (<i>a single course may satisfy more than 1 sub-category, but a total of 18 credits must be completed</i>) Western Cultural Tradition Social Context & Institutions Cultural Diversity & International Perspectives Population & the Environment Artistic & Creative Expression
2 courses	Designated Writing Intensive (<i>1 must be within the major</i>)
2 courses	Biological or Physical Sciences (<i>must include at least 1 laboratory course</i>)
1 course	Ethics (<i>emphasis on discussion of ethical issues in 1 course or series of courses</i>)
6 credits	Mathematics (<i>including statistics & some computer science, only 3 credits in computer science can count toward this requirement</i>)
1 capstone	An approved experience in which the student integrates the components of his or her undergraduate training to perform at a professional level. The capstone experience is usually completed during the senior year in consultation with the student's academic advisor.

**All UMaine students must complete these general education requirements, which are counted in the total credit hours required for graduation and may be contained in the Major Requirements previously listed.*

Specialized Information

The Department of Computer Science offers a minor in Computer Science. The minor is open to all undergraduate, degree-seeking University of Maine students and requires the completion of 18 credit hours of Computer Science courses.

Graduate Study

Recent graduates of the Computer Science undergraduate programs have gone on to graduate study at the University of Maine, Johns Hopkins University, the University of North Carolina at Chapel Hill, Indiana University and other fine institutions.

The University of Maine offers a Master of Science degree and a Doctor of Philosophy degree in Computer Science.

Academic Programs 2008-2009

Please refer to the web site (<http://factsheets.umaine.edu/>) for the most updated version of the fact sheets.

This fact sheet is intended for informational purposes only and is subject to change.