

Computer Science, BS, BA

Emphases: Science; Digital Systems; Software Development; Bioinformatics; Information Technology

Department: [Computer Science Department](#)

College: [College of Engineering](#)

Overview

About This Degree

Because almost all businesses, industries, and organizations use computers at all levels, the field of computer science is one of the fast growing sectors of employment for college graduates. Computer scientists understand and use algorithmic sequences and computer language, such as Java, Java script, html, or C++, to create new programs and to solve problems found in almost every sector of society.

Students learn the theoretical foundations of information and computation and understand practical techniques for their implementation and application in order to create, describe, and transform information in computer systems. Computer science is different from computer engineering in that it focuses more on the theoretical understanding of computation and programming.

All emphases, except the IT emphasis, are accredited by the Computing Accreditation Commission of Accrediting College Programs in Applied Science, guaranteeing the quality of the program. USU students who graduate with a computer science degree find high starting salaries, high job placement, and the possibility of working for major computer companies, such as Microsoft, IBM, Google, HP, and more.

Students receive a **BS** by completing all required courses in the major. To receive a **BA**, students must complete all of the requirements for a BS and gain proficiency in one or more foreign languages.

Career Options

Careers in computer science can be categorized into the four following areas:

Software development

- Business applications
- Game development
- Web programming
- Scientific computing

Finding and creating new uses for computers

- Searching for cancer and other disease treatments
- Automating medical images such as mammograms
- Autonomous vehicles for use in agriculture and more

Solving computer problems

- Research in computer theory
- Creating more effective algorithms

Managing computer systems

- This can be done for a wide variety of industries and companies

[Career Services](#) provides counseling and information on hundreds of job and internship opportunities and even helps students apply and interview.

What it takes

Admissions Requirements

In addition to Utah State University's [admissions requirements](#), the computer science program has additional

requirements:

- **Freshmen:** New freshmen admitted to USU in good standing qualify for admission to this major.
- **Transfer students:** Transfer students from other institutions or students transferring from other USU majors need a 2.0 total GPA for admission to this major.

International students have [additional admissions requirements](#).

Major Requirements

[Click here](#) to see course requirements for the **Bachelor of Science**.

[Click here](#) to see course requirements for the **Bachelor of Arts**.

Contact

Advising

All new USU students participate in a [New Student Orientation](#) program, where they receive detailed information about major requirements, registering for classes, and other important advising information.

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Advisor

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Get Involved

Professional Organizations, Honor Societies, and Clubs

Association for Computing Machinery: ACM, the world's largest educational and scientific computing society, delivers resources that advance computing as a science and a profession. ACM provides the computing field's premier digital library and serves its members and the computing profession with leading-edge publications, conferences, and career resources.

Association for Computing Machinery for Women: ACMW at Utah State University is a group of women in the department who are interested in encouraging women to enter this area of study and to join the ranks of women in the computer science field. In present years, the number of women in the field has declined. Through the establishment of a support system which includes activities and projects that aim to improve the working and learning environments for women in computing, ACMW strives to end this decline.

IEEE Computer Society: The Institute of Electrical and Electronics Engineers Computer Society is the world's leading organization of computing professionals and is dedicated to advancing theory and application of computing and information technology. The society meets the needs of today's computing researchers and professionals with books, conferences, conference publications, magazines, online courses, software development certifications, standards, and technical journals.

Free Software and Linux Club: The FSLC is a community of users that enjoy learning, teaching, and promoting Linux and other free software. FSLC holds weekly meetings, monthly workshops, and a yearly forum, all with useful tutorials and introductions to a wide variety of free software topics.

Labs, Centers, Research

With the second oldest [undergraduate research](#) program in the nation, USU offers students a wide range of opportunities to gain hands-on research experience. The [Undergraduate Research and Creative Opportunities](#) program allows students to apply for grants and receive funding. USU's [Honors Program](#) prepares students for excellent graduate programs by helping them build relationships with professors, participate in research projects, take smaller, more intensive classes, and develop leadership skills.

AggieAir Flying Circus: AggieAir Flying Circus provides high-resolution, multispectral aerial imagery using a small, unmanned aerial system. The system is able to map small areas quicker, more frequently, at greater resolution, and

at a smaller cost than conventional remote sensing. Some applications for AggieAir include monitoring of soil moisture and evapotranspiration in agriculture, riparian habitat mapping, road and highway surface monitoring, wetland mapping, and fish and wildlife tracking.

Anderson Center for Wireless Teaching and Research: This center provides state-of-the art wireless communication teaching and research with emphasis on industry-relevant design projects.

Center for Active Sensing and Imaging: CASI uses radar-like, laser-based LIDAR technology to measure distances instead of radio waves for a variety of industrial applications, including siting wind farms, controlling emissions, and rapid replacement of bridges, runways, and other infrastructure.

Center for Atmospheric and Space Sciences: CASS is recognized nationally and internationally as a progressive research center with advanced space and upper atmospheric research programs. CASS scientists are tackling the adverse consequences of space weather. Undergraduate and graduate students are involved in numerous research projects in CASS that provide opportunities to program computers, analyze data, and build instrumentation.

Center for High Performance Computing: HPC at USU is a research service center that serves and expands the computational needs of the USU community. HPC at USU houses a 256-processor cluster called "Uinta," with three networks.

Center for Self-Organizing and Intelligent Systems: CSOIS is a multi-disciplinary research group at USU that focuses on the design, development, and implementation of intelligent, autonomous mechatronic systems, with a focus on ground vehicles and robotics.

Center for Space Engineering: CSE is a multi-disciplinary group of faculty at USU involved in space technology, systems, and science. The center brings together academics, industry, and government to advance the understanding of the space environment and to train the next generation.

Energy Laboratory: This lab seeks to develop solutions to America's most intractable energy problems through scientific and technological innovation. It provides a cohesive framework permitting faculty, students, and partnering institutions to focus on contemporary energy-related research issues.

Environmental Management Research Group: EMRG is a research unit of the Utah Water Research Laboratory focused on integrated watershed management and systems analysis of environmental problems. EMRG provides software development, watershed and water quality modeling, and GIS data analysis service to internal and external entities directed at solving integrated watershed and environmental management-related problems of a variety of scales.

Rocky Mountain NASA Space Grant Consortium: RMNSGC is one of 52 National Space Grant Consortia in the United States. As a member of the consortium, USU has awarded more than 100 fellowships to students interested in aerospace-related education and careers. The majority of Space Grant student awards include a mentored research experience with university faculty and NASA scientists, engineers, and technologists.

Space Dynamics Laboratory: SDL is known for sending 500+ successful experiments into space and brings in \$54 million per year in revenue, the majority coming from grants, contracts, and appropriations. SDL's expertise in the development of sensors and calibration, small satellites and real-time intelligence has made it an internationally known organization in the space arena.

Utah Transportation Center: The UTC uses its expertise in natural hazards to research congestion chokepoints, evacuation occurrences, infrastructure renewal, and operations as it relates to multi-modal transportation.

