Computer Science, BS

ESCSEBS

Computer science will challenge you to apply design and development principles in the construction of software systems of varying complexity and to communicate effectively with a wide range of audiences.

Program description

The BS program in computer science aims to produce graduates who are well prepared to pursue careers in a wide variety of computing-related fields or to embark on further studies in graduate degree programs.

The program is anchored with core courses that provide a solid foundation in theoretical and practical aspects of computer science and ensure that students have the requisite critical thinking, effective programming and problem-solving skills in a variety of modern programming languages, with an emphasis on understanding security and systems issues.

The program caters to a variety of interests in subfields of computer science and related disciplines through a flexible set of electives that allow students to develop, as part of their programs of study, in-depth knowledge and skills in artificial intelligence, machine learning, robotics, database systems, informatics, or other engineering and science disciplines. Students can also pursue concentrations in software engineering or cybersecurity as part of their degree program.

Computer science professionals design, analyze and improve the quality of computer software and systems for a variety of applications, including:

- artificial intelligence
- computer vision
- cybersecurity
- graphics
- information management
- multimedia
- networking

Accredited by the Computing Accreditation Commission of ABET. https://www.abet.org/, under the General Criteria and the Computer Science Program Criteria.

At a glance

- **College/School:** [Ira A. Fulton Schools of Engineering](#)
- **Location:** [Tempe](#) or [Online](#), [ASU Local](#)

- **Second language requirement:** No
- **First required math course:** MAT 265 - Calculus for Engineers I
- **Math intensity:** Substantial

Required courses (Major Map)

[2024 - 2025 Major Map (on-campus)](#)
[2024 - 2025 Major Map (online)](#)
[Major Map (Archives)](#)

Concurrent program options

Students pursuing concurrent degrees (also known as a "double major") earn two distinct degrees and receive two diplomas. Working with their academic advisors, students can create their own concurrent degree combination. Some combinations are not possible due to high levels of overlap in curriculum.

Accelerated program options

This program allows students to obtain both a bachelor's and master's degree in as little as five years. It is offered as an [accelerated bachelor's plus master's degree](#) with:

[Computer Science (Big Data Systems), MCS](#)

[Computer Science (Big Data Systems), MS](#)

[Computer Science (Biomedical Informatics), MS](#)

[Computer Science (Cybersecurity), MCS](#)

[Computer Science (Cybersecurity), MS](#)

[Computer Science (Media Arts and Sciences), MS](#)

[Computer Science, MCS](#)

[Computer Science, MS](#)

[Robotics and Autonomous Systems (Artificial Intelligence), MS](#)

Acceptance to the graduate program requires a separate application. Students typically receive approval to pursue the accelerated master's during the junior year of their bachelor's degree program. Interested students can learn about eligibility requirements and how to apply.

Admission requirements

General university admission requirements:
All students are required to meet general university admission requirements.
First-year | Transfer | International | Readmission

Additional requirements:

The admission standards for majors in the Ira A. Fulton Schools of Engineering, shown below, are higher than minimum university admission standards. International students must meet the same admission standards, with the possible additional requirement of a minimum English language proficiency test score. If the university requires an English proficiency test score from the applicant, then admission to engineering requires a minimum TOEFL iBT score of 79 (internet-based test, taken in a testing center), a minimum IELTS score of 6.5, a minimum PTE score of 58, a minimum Duolingo English score of 105, or a minimum Cambridge English exam score of 176.

First-year admission:

1. minimum 1210 SAT combined evidence-based reading and writing plus math score or minimum 24 ACT combined score, or a minimum high school cumulative GPA of 3.00 in ASU competency courses, or class ranking in top 25% of high school class, and
2. no high school math or science competency deficiencies

Transfer admission requirements:

Transfer students with fewer than 24 transferable college credit hours:

1. minimum transfer GPA of 3.00 for fewer than 24 transfer hours, and
2. no high school math or science competency deficiencies, and
3. minimum 1210 SAT combined evidence-based reading and writing plus math score (or 1140 if taken prior to March 5, 2016) or minimum 24 ACT combined score, or a minimum high school cumulative GPA of 3.00 in ASU competency courses, or class ranking in top 25% of high school class

Transfer students with 24 or more transferable college credit hours must meet either the primary or the secondary criteria (not both):

Primary criteria

1. minimum transfer GPA of 3.00 for 24 or more transfer hours, and
2. no high school math or science competency deficiencies (if ASU Admission Services requires submission of a high school transcript)

Secondary criteria

1. minimum transfer GPA of 2.75 for 24 or more transfer hours, and
2. minimum GPA of 2.75 in CSE 110 Principles of Programming, CSE 205 Object-oriented Programming and Data Structures, MAT 265 Calculus for Engineers I, and MAT 266 Calculus for Engineers II

Tuition information

When it comes to paying for higher education, everyone's situation is different. Students can learn about ASU tuition and financial aid options to find out which will work best for them.

Change of Major Requirements

Admission requirements for many majors in the Ira A. Fulton Schools of Engineering are higher than university admission standards.

Students should visit the Change of Major form for information about how to change a major to this program.

Attend online

ASU Online

ASU offers this program in an online format with multiple enrollment sessions throughout the year. Applicants may view the program's ASU Online page for program descriptions and to request more information.

ASU Local

It is now possible to earn an ASU degree with ASU Local, an integrated college experience in which students take advantage of in-person success coaching and programming experiences on site while completing one of 130+ undergraduate online degree programs, all of which come with online faculty interaction and tutoring support.

Transfer options

ASU is committed to helping students thrive by offering tools that allow personalization of the transfer path to ASU. Students may use MyPath2ASU® to outline a list of recommended courses to take prior to transfer.

ASU has transfer partnerships in Arizona and across the country to create a simplified transfer experience

for students. These pathway programs include exclusive benefits, tools and resources, and they help students save time and money in their college journey.

Global opportunities

Global experience
Students learn to thrive in a global environment through the rich educational and interpersonal experiences inherent in study abroad. A resume enhanced by the valuable study abroad experience will impress prospective employers, and it will also help the student stand out should they decide to pursue advanced study.

With over 300 Global Education program opportunities available, students are able to tailor their experience to their unique interests and skill sets. Whether in a foreign country, in the U.S. or online, students build communication skills, learn to adapt and persevere, and are exposed to research and internships across the world, increasing their professional network.

Career opportunities

Computer science graduates secure employment in a variety of capacities, such as computer and software design or development of information technologies. Their jobs are often distinguished by the high level of theoretical expertise applied to solving complex problems and to the creation and application of new computing technologies. Computer science-related jobs may include:

- creating computer games and graphics systems
- designing artificial intelligence systems
- developing mobile computing applications
- developing network security applications
- discovering data management and mining solutions for large-scale data analytics
- inventing and implementing more efficient computing systems for managing data and information, including information retrieval and search on the Internet

With the theoretical foundation built into the program, computer science graduates can excel in system and software development, as well as in designing effective computing solutions for emerging and challenging problems in modern society. Skills in system development and research can lead to entrepreneurial activity that produces innovative computing products and services.

Example job titles and salaries listed below are not necessarily entry level, and students should take into consideration how years of experience and geographical location may affect pay scales. Some jobs also may require advanced degrees, certifications or state-specific licensure.

Career	*Growth	*Median salary

Computer Programmer		$97,800
Computer Science Professor ☀	5.3%	$84,760
Computer Scientist ☀	22.7%	$136,620
Computer Software Quality Engineer ☀	20.3%	$99,620
Corporate Web Developer ☀	9.7%	$98,740
Database Administrator (DBA) ☀	7.0%	$99,890
Geographic Information Systems Technician (GIS Technician) ☀	9.7%	$98,740
Information Security Analyst ☀	31.5%	$112,000
Software Developer ☀	25.7%	$127,260
Telecommunications Engineering Specialist	3.5%	$126,900

* Data obtained from the Occupational Information Network (O*NET) under sponsorship of the U.S. Department of Labor/Employment and Training Administration (USDOL/ETA).

☀ Bright Outlook

Contact information

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