Computer Science, BS

ESCSEBS

Program Description

The BS program in computer science focuses on the design of computers, computational processes for problem-solving and information transfer and transformation with an emphasis on improving software and system quality, security, performance and usability. The program supports the evolution of the computing and informatics disciplines: the integration of computer and information sciences with engineering, science and other disciplines.

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

Examples of projects a computer scientist might work on include:

- computer networking
- database and information systems
- distribution processing systems
- gaming systems
- next-generation computing systems
- search engines
- software engineering
- web services.

Accredited by the Computing Accreditation Commission of ABET, [https://www.abet.org/](https://www.abet.org/).
At a Glance

- **College/School:** Ira A. Fulton Schools of Engineering
- **Location:** Tempe or Online, ASU Local
- **Additional Program Fee:** Yes
- **Second Language Requirement:** No
- **First Required Math Course:** MAT 265 - Calculus for Engineers I
- **Math Intensity:** Substantial

Required Courses (Major Map)

- 2022 - 2023 Major Map (On-campus)
- 2022 - 2023 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 and master's degree with:

- Computer Science (Art, Media and Engineering), MS
- 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, MCS
- Computer Science, MS
- Robotics and Autonomous Systems (Artificial Intelligence), MS
Acceptance to the graduate program requires a separate application. During their junior year, eligible students are advised by their academic departments 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 are higher than minimum university standards. International students may have an additional English language proficiency criterion. Foreign nationals must meet the same admission requirements shown below with the possible additional requirement of a minimum TOEFL score. If the university requires a TOEFL score from the applicant (students should check [https://admission.asu.edu/international/undergrad-student](https://admission.asu.edu/international/undergrad-student)), then admission to engineering requires a minimum TOEFL score of 550 (paper-based), 213 (computer-based), 79 on iBT (internet-based) or a minimum IELTS score of 6.5.

**Freshman Admission:**

1. minimum 1210 SAT combined evidence-based reading and writing plus math score or minimum 24 ACT combined score or minimum ABOR GPA of 3.00 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 less 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 3.00 minimum ABOR GPA, 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 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 266 Calculus for Engineers II

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 refer to the following Engineering website for more information. [https://engineering.asu.edu/admission-requirements/](https://engineering.asu.edu/admission-requirements/).

Students should refer to [https://changemajor.apps.asu.edu](https://changemajor.apps.asu.edu) 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 description and request more information here.

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. Those interested may learn more about ASU Local here.

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. Students may learn more about these programs by visiting the admission site: [https://admission.asu.edu/transfer/MyPath2ASU](https://admission.asu.edu/transfer/MyPath2ASU).

Global Opportunities
Global Experience
Students gain valuable experience when studying abroad, experience that enhances their resumes. With over 250 programs available, study abroad allows students to tailor their experience to their unique interests and skill sets. Students in computer science are able to gain hands-on experience in countries like Japan and Colombia.

Graduates who possess the heightened cultural competency, leadership and critical thinking skills they acquired when studying abroad may stand out in a competitive field. [https://goglobal.asu.edu/](https://goglobal.asu.edu/)

Career Opportunities
Computer science graduates secure employment in a variety of capacities, such as in 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. Some 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.

Career examples include but are not limited to those shown in the following list. Advanced degrees or certifications may be required for academic or clinical positions.

<table>
<thead>
<tr>
<th>Career</th>
<th>*Growth</th>
<th>*Median Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Programmer</td>
<td></td>
<td>$89,190</td>
</tr>
<tr>
<td>Computer Science Professor</td>
<td>2.6%</td>
<td>$85,540</td>
</tr>
<tr>
<td>Computer Scientist</td>
<td>15.4%</td>
<td>$126,830</td>
</tr>
<tr>
<td>Computer Software Quality Engineer</td>
<td></td>
<td>not available</td>
</tr>
<tr>
<td>Corporate Web Developer</td>
<td>5.7%</td>
<td>$92,870</td>
</tr>
<tr>
<td>Database Administrator (DBA)</td>
<td></td>
<td>not available</td>
</tr>
<tr>
<td>Geographic Information Systems Technician (GIS Technician)</td>
<td>5.7%</td>
<td>$92,870</td>
</tr>
<tr>
<td>Occupational Title</td>
<td>Growth Rate</td>
<td>Average Annual Salary</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Information Security Analyst</td>
<td>31.2%</td>
<td>$103,590</td>
</tr>
<tr>
<td>Software Developer</td>
<td>not available</td>
<td></td>
</tr>
<tr>
<td>Telecommunications Engineering Specialist</td>
<td>5.0%</td>
<td>$116,780</td>
</tr>
</tbody>
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* 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  🌿 Green Occupation

**Contact Information**

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