Computer Science, BS

Program Description

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.

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.

At a Glance

- **College/School:** Ira A. Fulton Schools of Engineering
- **Location:** Tempe campus
- **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)

2020 - 2021 Major Map
Major Map (Archives)

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 will be advised by their academic departments to apply.

Admission Requirements

**General University Admission Requirements:**
All students are required to meet general university admission requirements.

[Freshman] [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, 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 3.00 minimum ABOR GPA 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 all critical courses for Terms 1 and 2 (see major map for critical courses)
Change of Major Requirements

Admission requirements for many majors in the Ira A. Fulton Schools of Engineering are higher than university admission standards: [https://engineering.asu.edu/admission-requirements/](https://engineering.asu.edu/admission-requirements/).

Students should refer to [https://changingmajors.asu.edu/request](https://changingmajors.asu.edu/request) for information about how to change a major to this program.

Transfer Options

ASU is committed to helping students thrive by offering tools that allow personalization of the transfer path to ASU. Students may use the [Transfer Map search](https://engineering.asu.edu/transfer/pathway-programs) 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 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/pathway-programs](https://admission.asu.edu/transfer/pathway-programs).

Global Opportunities

Global Experience

Students enhance their resumes and gain valuable experience through studying abroad. With over 250 programs available, study abroad allows students to tailor their experience to their unique interests and skillsets. Students in computer science are able to gain hands-on experience in countries ranging from Japan to Colombia. In a competitive field, they stand out with heightened cultural competency, leadership and critical thinking skills achieved from studying abroad. [https://mystudyabroad.asu.edu/](https://mystudyabroad.asu.edu/)

Career Opportunities

Computer science graduates secure employment in a variety of capacities ranging from computer and software design to 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>$82,240</td>
</tr>
<tr>
<td>Computer Scientist</td>
<td>19.2%</td>
<td>$114,520</td>
</tr>
<tr>
<td>Computer Software Quality Engineer</td>
<td>9.3%</td>
<td>$88,510</td>
</tr>
<tr>
<td>Corporate Web Developer</td>
<td>9.3%</td>
<td>$88,510</td>
</tr>
<tr>
<td>Database Administrator (DBA)</td>
<td>11.5%</td>
<td>$87,020</td>
</tr>
<tr>
<td>Geospatial Information Technologists</td>
<td>9.3%</td>
<td>$88,510</td>
</tr>
<tr>
<td>Information Security Analyst</td>
<td>28.5%</td>
<td>$95,510</td>
</tr>
<tr>
<td>Software Developer</td>
<td>11.1%</td>
<td>$107,600</td>
</tr>
<tr>
<td>Software Engineer</td>
<td>30.7%</td>
<td>$101,790</td>
</tr>
<tr>
<td>Telecommunications Engineering Specialist</td>
<td>6.5%</td>
<td>$104,650</td>
</tr>
</tbody>
</table>

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

Contact Information

Computer Science and Engineering Program | CTRPT 105
cidse.undergrad@asu.edu | 480-965-3199