Computer Science, BS

ESCSEBS

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
- graphics
- information management
- multimedia
- networking
- security

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 program 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)

2017 - 2018 Major Map
Major Map (Archives)

Accelerated Degrees

This degree is also offered in an accelerated format with:
- Computer Science (Art, Media and Eng), MS
- Computer Science (Big Data Systems), MCS
- Computer Science (Big Data Systems), MS
- Computer Science (Biomedical Informatics), MS
- Computer Science (Information Assurance), MCS
- Computer Science (Information Assurance), MS
- Computer Science, MCS
- Computer Science, MS

Acceptance to the graduate program requires a separate application. During their junior and senior years, 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, (see http://global.asu.edu/future/undergrad) 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 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 percent 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 percent 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**
Current ASU students should refer to https://engineering.asu.edu/admission-requirements/ for the major change requirements for this program.

**Transfer Agreements**

**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 Network Admin</td>
<td>7.9%</td>
<td>$75,790</td>
</tr>
<tr>
<td>Computer Network Analyst</td>
<td>8.7%</td>
<td>$98,430</td>
</tr>
<tr>
<td>Computer Network Tech</td>
<td>7.5%</td>
<td>$61,830</td>
</tr>
<tr>
<td>Computer Programmer</td>
<td></td>
<td>$77,550</td>
</tr>
<tr>
<td>Occupation</td>
<td>Growth Rate</td>
<td>Average Salary</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>-------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Computer Science Professor</td>
<td>8.7%</td>
<td>$72,010</td>
</tr>
<tr>
<td>Computer Scientist</td>
<td>10.7%</td>
<td>$108,360</td>
</tr>
<tr>
<td>Computer Software Quality Engineer</td>
<td>3.3%</td>
<td>$83,410</td>
</tr>
<tr>
<td>Computer System Architect</td>
<td>3.3%</td>
<td>$83,410</td>
</tr>
<tr>
<td>Computer Systems Analyst</td>
<td>20.9%</td>
<td>$82,710</td>
</tr>
<tr>
<td>Corporate Web Developer</td>
<td>3.3%</td>
<td>$83,410</td>
</tr>
<tr>
<td>Database Administrator (DBA)</td>
<td>11.1%</td>
<td>$80,280</td>
</tr>
<tr>
<td>Document Management Specialist</td>
<td>3.3%</td>
<td>$83,410</td>
</tr>
<tr>
<td>Geospatial Information Technologists</td>
<td>3.3%</td>
<td>$83,410</td>
</tr>
<tr>
<td>Information Security Analyst</td>
<td>17.9%</td>
<td>$88,890</td>
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<tr>
<td>Information Technology Manager (IT Manager)</td>
<td>15.4%</td>
<td>$127,640</td>
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<tr>
<td>Nursing Operations Manager</td>
<td>20.9%</td>
<td>$82,710</td>
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<tr>
<td>SEO Specialist</td>
<td>3.3%</td>
<td>$83,410</td>
</tr>
<tr>
<td>Software Developer</td>
<td>13.0%</td>
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<tr>
<td>Software Engineer</td>
<td>18.8%</td>
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<tr>
<td>Telecommunications Engineering Specialist</td>
<td>8.7%</td>
<td>$98,430</td>
</tr>
<tr>
<td>Web Developer</td>
<td>26.6%</td>
<td>$63,490</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).

☀ Bright Outlook  🌿 Green Occupation

**Contact Information**

Computer Science and Engineering Program | BYENG 225
cidse.undergrad@asu.edu | 480-965-3199