Computer Science (Software Engineering), E

ESCSESBS

Program Description

The software engineering concentration is appropriate for computer science students seeking careers as software engineers. Students will learn advanced processes, methodologies and tools for developing and testing large and small software applications in emerging areas such as:

- databases
- enterprise systems
- interoperable systems
- mobile computing
- service-orientated computing

They will also learn information assurance concepts and techniques, or principles of human-computer interaction and methods, for developing these applications. The curriculum prepares students to assume leadership roles in software development organizations and to practice professional standards and emerging software technology to the software engineering life-cycle activities.


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

Career opportunities are plentiful for software engineers. Graduates of this program possess the knowledge and skills to work across the spectrum of software development process activities, including:
• architecture
• coding
• project management
• quality assurance
• requirements engineering
• testing

Careers include:

• software analyst
• software architect
• software engineer
• software task leader
• software tester

Graduates of the software engineering concentration find employment in large and small organizations that develop, deploy and manage software systems. They work on all types of projects that include large, complex engineering systems; distributed banking; financial and government software; and gaming.

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 Administrator</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 Technician</td>
<td>7.5%</td>
<td>$61,830</td>
</tr>
<tr>
<td>Computer Programmer</td>
<td></td>
<td>$77,550</td>
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<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>Job Title</td>
<td>Growth Rate</td>
<td>Annual Wage</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
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</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>
</tr>
<tr>
<td>Nursing Operations Manager</td>
<td>20.9%</td>
<td>$82,710</td>
</tr>
<tr>
<td>SEO Specialist</td>
<td>3.3%</td>
<td>$83,410</td>
</tr>
<tr>
<td>Software Developer</td>
<td>13.0%</td>
<td>$102,880</td>
</tr>
<tr>
<td>Software Engineer</td>
<td>18.8%</td>
<td>$95,510</td>
</tr>
<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

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