Program Description

The computer systems engineering program focuses on the analysis, design, testing, integration and evaluation of hardware and software systems. The curriculum is grounded in many engineering disciplines, including the applications of science and technology to the design of:

- computer architecture
- computer security
- digital circuits
- distributed and embedded systems
- networking
- operating systems

Students engage in the design of integrated hardware and software solutions for computing, communication and control applications. They practice many aspects of engineering activities, such as the development of:

- computer networks
- embedded and ubiquitous systems
- high-performance computer systems
- individual digital components

Students become skilled at interfacing different pieces of hardware and software components and integrating systems and products with new capabilities and improved quality and performance.


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 Engineering (Computer Systems), MS
- 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.

**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 systems engineers are employed in industry, government, education and consulting firms where they engage in the design, development and operation of hardware and software systems of computer and networking equipment.

Computer systems engineers often find themselves focusing on engineering problems or challenges of emerging computer systems, from chips to device controllers, embedded systems and high-performance computing servers. Their jobs usually involve the research, design and development of computer hardware and software for practical applications. Their work can result in innovative, state-of-the-art products that integrate computing and communication capabilities, such as those in:

- avionics and space vehicles
- digital television and photography
- intelligent highways and control systems for vehicles
- mobile devices and smart applications
- new apparatuses for health care and for the sight-impaired or others with physical disabilities
- security and defense systems

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>Occupation</th>
<th>Growth Rate</th>
<th>Average Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Hardware Engineer</td>
<td>3.1%</td>
<td>$108,430</td>
</tr>
<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>
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<tr>
<td>Computer Network Technician</td>
<td>7.5%</td>
<td>$61,830</td>
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<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>
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<tr>
<td>Computer Scientist</td>
<td>10.7%</td>
<td>$108,360</td>
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<tr>
<td>Computer Software Quality Engineer</td>
<td>3.3%</td>
<td>$83,410</td>
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<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>$82,410</td>
</tr>
<tr>
<td>Corporate Web Developer</td>
<td>3.3%</td>
<td>$83,410</td>
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<tr>
<td>Database Administrator (DBA)</td>
<td>11.1%</td>
<td>$80,280</td>
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<tr>
<td>Document Management Specialist</td>
<td>3.3%</td>
<td>$83,410</td>
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<tr>
<td>Electrical Engineering Professor</td>
<td>13.2%</td>
<td>$94,130</td>
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<tr>
<td>Engineering Manager</td>
<td>2.0%</td>
<td>$130,620</td>
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<tr>
<td>Geospatial Information Technologists</td>
<td>3.3%</td>
<td>$83,410</td>
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<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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<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>
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<tr>
<td>Web Developer</td>
<td>26.6%</td>
<td>$63,490</td>
</tr>
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</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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