Electrical Engineering, BSE

Program Description

The goal of the electrical engineering undergraduate program is to prepare graduates for positions as electrical engineers. Faculty in the Ira A. Fulton Schools of Engineering offer a BSE in electrical engineering. Following initial coursework in mathematics and sciences, the foundation classes build a solid base of engineering knowledge. The electrical engineering curriculum includes a number of required upper-division electrical engineering and technical elective courses in such areas as:

- circuits
- communication, signal processing and control systems
- computer engineering
- electromagnetics
- power
- solid-state devices

Approved technical elective courses provide students with an opportunity either to broaden their background in electrical engineering or to study, in greater depth, technical subjects in which they have special interest.


At a Glance

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

2018 - 2019 Major Map (On-campus)
2018 - 2019 Major Map (Online)
Major Map (Archives)

Accelerated Degrees

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 Engineering (Electrical Engineering), MS
Electrical Engineering, MSE

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, (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 2.50 for 24 or more transfer hours, and
2. minimum GPA of 2.75 in all critical courses for Terms 1 and 2 (MAT 265, MAT 266, PHY 121 and PHY 122)

Change of Major Requirements

Current ASU students should refer to https://engineering.asu.edu/admission-requirements/ for the major change requirements for this program.

Attend 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.

Transfer Agreements
ASU has partnered with colleges and universities in Arizona, California, Illinois and Washington to provide transfer curriculum pathways. Students should select their current institution to see if there is a partnership agreement between the institution and ASU for this degree program. Students who do not see their state or institution listed should check back as ASU is always working on creating new partnerships.

Transfer from a Maricopa Community College in Arizona

- Chandler-Gilbert Community College
- Estrella Mountain Community College
- GateWay Community College
- Glendale Community College
- Mesa Community College
- Paradise Valley Community College
- Phoenix College
- Rio Salado College
- Scottsdale Community College
- South Mountain Community College

Transfer from an Arizona Community College

- Arizona Western College
- Central Arizona College
- Cochise College
- Coconino Community College
- Dine College
- Eastern Arizona College
- Gila Community College
- Mohave Community College
- Northland Pioneer College
- Pima Community College
- Tohono O'odham Community College
- Yavapai College

Transfer from another state

- California
- Illinois
- Washington
- Another state

Global Opportunities

Global Experience

With over 250 programs in more than 65 countries (ranging from one week to one year), study abroad is possible for all ASU students wishing to gain global skills and knowledge in preparation for a 21st century career. Students earn ASU credit for completed courses, while staying on track for graduation, and may apply financial aid and scholarships toward program costs. [https://mystudyabroad.asu.edu/](https://mystudyabroad.asu.edu/)
Career Opportunities

Graduates with the bachelor's degree in electrical engineering find many exciting opportunities in industry. These include:

- communication equipment and network providers
- computer and peripheral device manufacturers and defense organizations
- consulting companies
- electric power utilities
- semiconductor chip designers and manufacturers

The program also prepares graduates for continued learning experiences, either in a formal graduate program or in continuing education applications.

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>Aerospace Engineer</td>
<td>6.1%</td>
<td>$113,030</td>
</tr>
<tr>
<td>Computer Hardware Engineer</td>
<td>5.5%</td>
<td>$115,120</td>
</tr>
<tr>
<td>Electrical Engineer</td>
<td>8.6%</td>
<td>$95,060</td>
</tr>
<tr>
<td>Electrical Engineering Professor</td>
<td>14.6%</td>
<td>$98,360</td>
</tr>
<tr>
<td>Electronics Engineer</td>
<td>3.7%</td>
<td>$102,180</td>
</tr>
<tr>
<td>Energy Engineer</td>
<td>6.4%</td>
<td>$97,250</td>
</tr>
<tr>
<td>Engineering Manager</td>
<td>5.5%</td>
<td>$137,720</td>
</tr>
<tr>
<td>Nuclear Engineer</td>
<td>3.8%</td>
<td>$105,810</td>
</tr>
<tr>
<td>Radio Frequency Identification Device Specialist</td>
<td>3.7%</td>
<td>$102,180</td>
</tr>
<tr>
<td>Solar Energy Systems Engineer</td>
<td>6.4%</td>
<td>$97,250</td>
</tr>
<tr>
<td>Telecommunications Engineering Specialist</td>
<td>6.5%</td>
<td>$104,650</td>
</tr>
<tr>
<td>Wind Energy Engineer</td>
<td>6.4%</td>
<td>$97,250</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

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