Aerospace Engineering (Aeronautics), BSE

Program Description

The aerospace engineering curriculum provides students with an education in technological areas critical to the design and development of aerospace vehicles and systems. The aeronautics concentration, under the BSE in aerospace engineering, emphasizes engineering and the design of aircraft, helicopters, missiles and other vehicles that fly through the atmosphere. Topics in required courses cover:

- aerodynamics
- aerospace materials
- aircraft structures
- flight mechanics
- propulsion
- stability and control

Required astronautics topics include:

- attitude control
- orbital mechanics


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)

2018 - 2019 Major Map
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:

- Aerospace Engineering, MS
- Mechanical Engineering, 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 admission 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:

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)

Change of Major Requirements

Admission requirements for many majors in the Ira A. Fulton Schools of Engineering are higher than university admission standards. Students should see https://engineering.asu.edu/admission-requirements/ for information about how to change a major to this program.

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

Select a college

Transfer from an Arizona Community College

Select a college

Transfer from another state

Select a 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/.

Career Opportunities

A majority of students entering the field of aerospace engineering desire to work on the design and analysis of aerospace vehicles. Most graduates are employed in the aerospace industry or in government positions related to aerospace. Specific careers in aerospace engineering include:

- aeronautical and space systems integration
- configuration development
- material and structural design
- propulsion engineering
• space mission design and analysis
• vehicle and component analysis using computer-aided tools
• vehicle design and performance
• wind tunnel and flight testing

The aerospace engineering program has the following educational objectives:

1. Through volunteering, entrepreneurial endeavors, community service, employment, etc., graduates of the aerospace engineering program will demonstrate commitment to the Sun Devil ideals of global engagement, social embeddedness, social transformation and sustainability.
2. Graduates of the aerospace engineering program should have attained one or more of the following objectives within a few years after completing their degrees:
   1. employment in aerospace or other field in a position that capitalizes on the skills and abilities gained through the degree in aerospace engineering, in positions of increasing responsibility and leadership within the organization
   2. admission into a graduate degree program in aerospace engineering or other technical field
   3. admission into a professional degree program, such as law or business, in accordance with the specific interests and abilities of the graduate

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>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>
</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

Mechanical and Aerospace Engineering Program | ECG 202
seme@asu.edu | 480-965-2335