Manufacturing Engineering, BS

Program Description

Successful manufacturing enterprises prosper in the global marketplace through a balance of design, sustainability, quality and production. Manufacturing engineering combines manufacturing processes (e.g., how materials are altered in either shape or properties) and the processes of manufacturing (e.g., design and management of manufacturing systems).

The BS program in manufacturing engineering prepares students to analyze, synthesize and control manufacturing operations using statistical methods; collaborate across disciplines to design and build solutions to real-world problems; design innovative products and the equipment, tooling and environments necessary for their manufacture; model, simulate and analyze manufacturing production processes for both small- and large-scale environments; and provide technological leadership.

The curriculum is project-based, hands-on, teamwork-oriented and delivered in outstanding fabrication facilities. Graduates of this program become key team members who create and implement processes for making such varied products as airplanes, surgical instruments, toys and foodstuffs.

Accredited by the Engineering Accreditation Commission of ABET; https://www.abet.org.

This major is eligible for the Western Undergraduate Exchange program at the following location: Polytechnic campus. Students from Western states who select this major and campus may be eligible for reduced nonresident tuition at a rate of 150% of Arizona resident tuition plus all applicable fees. Students should click the link for more information and eligibility requirements of the WUE program.

At a Glance

- **College/School:** Ira A. Fulton Schools of Engineering
- **Location:** Polytechnic
- **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)**

2022 - 2023 Major Map
Major Map (Archives)

**Concurrent Program Options**

Students pursuing concurrent degrees (also known as a "double major") earn two distinct degrees and receive two diplomas. Working with their academic advisors, students can create their own concurrent degree combination. Some combinations are not possible due to high levels of overlap in curriculum.

**Accelerated Program Options**

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:

- Engineering, MS
- Manufacturing Engineering, MS
- Robotics and Autonomous Systems (Systems Engineering), MS

Acceptance to the graduate program requires a separate application. During their junior year, eligible students are advised by their academic departments to apply.

**Admission Requirements**

General University Admission Requirements:
All students are required to meet general university admission requirements.
First-year | Transfer | International | Readmission

**Change of Major Requirements**

A current ASU student has no additional requirements for changing majors.

Students should refer to https://changemajor.apps.asu.edu for information about how to change a major to this program.

**Transfer Options**
ASU is committed to helping students thrive by offering tools that allow personalization of the transfer path to ASU. Students may use MyPath2ASU™ to outline a list of recommended courses to take prior to transfer.

ASU has transfer partnerships in Arizona and across the country to create a simplified transfer experience for students. These pathway programs include exclusive benefits, tools and resources, and they help students save time and money in their college journey. Students may learn more about these programs by visiting the admission site: https://admission.asu.edu/transfer/MyPath2ASU.

**Global Opportunities**

**Global Experience**
With over 250 programs available (programs vary in length, from one week to one year), study abroad allows students to tailor their experience to their unique interests and skill sets. Students in manufacturing engineering are able to gain hands-on experience in a variety of countries around the world including Japan and Germany.

Graduates who possess the heightened cultural competency and leadership and critical thinking skills acquired through study abroad may stand out in a competitive field. More information is available on the Global Education website: https://goglobal.asu.edu/.

**Career Opportunities**

Engineers collaborate on transdisciplinary teams to design, manufacture and deliver innovative technological products and services.

Graduates possess the technical skills in tandem with the professional skills of communication, teamwork and collaboration and the self-motivation and adaptability that many employers seek. Graduates are prepared to work in large corporations, government agencies, and small businesses as well as to go on to graduate school to pursue advanced degrees. The program's emphasis on open-ended design and project-based learning supports the development of entrepreneurial skills and attitudes, and some students start companies of their own.

Graduates typically work as manufacturing engineers in a variety of companies, large and small. They are often members of design and development teams, cooperating with other people within and outside of their company. Career employment opportunities include direct manufacturing support, manufacturing management, and quality control and assurance. Due to a strong, broad and practical engineering skill set, graduates are highly valuable in small or new startup companies. Program graduates are well-placed and command top salaries.

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>Engineering Manager</td>
<td>2.6%</td>
<td>$149,530</td>
</tr>
<tr>
<td>Human Factors Engineer</td>
<td>10.1%</td>
<td>$88,950</td>
</tr>
<tr>
<td>Hydroelectric Production Manager</td>
<td>0.9%</td>
<td>$108,790</td>
</tr>
<tr>
<td>Industrial Engineer</td>
<td>10.1%</td>
<td>$88,950</td>
</tr>
<tr>
<td>Manufacturing Plant Manager</td>
<td>0.9%</td>
<td>$108,790</td>
</tr>
<tr>
<td>Power Plant Manager</td>
<td>0.9%</td>
<td>$108,790</td>
</tr>
<tr>
<td>Power Production Manager</td>
<td>0.9%</td>
<td>$108,790</td>
</tr>
<tr>
<td>Quality Control Manager</td>
<td>0.9%</td>
<td>$108,790</td>
</tr>
<tr>
<td>Supply Chain Engineer</td>
<td>10.1%</td>
<td>$88,950</td>
</tr>
<tr>
<td>Validation Engineer</td>
<td>10.1%</td>
<td>$88,950</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

**Professional Licensure**

ASU programs that may lead to professional licensure or certification are intended to prepare students for potential licensure or certification in Arizona. Completion of an ASU program may not meet educational requirements for licensure or certification in another state. For more information, students should visit the ASU professional licensure webpage: [https://admission.asu.edu/academics/licensure](https://admission.asu.edu/academics/licensure).

Students should note that not all programs within the Fulton Schools of Engineering lead to professional licensure.

**Contact Information**

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