Biomedical Engineering, BSE

ESBMEBSE

Do you aspire to improve lives through medical breakthroughs? Biomedical engineering empowers you to tackle global health care challenges by merging fields of engineering, biology and medicine. Explore robotics, design medical devices, investigate diagnostic tools, innovate health with artificial intelligence, or specialize in neural, cellular or tissue engineering as a biomedical engineer.

Program description

The Bachelor of Science in Engineering program in biomedical engineering provides students with in-depth knowledge to translate an idea for a health solution into a viable prototype of a biomedical device.

With knowledge gained from courses that cover engineering and life sciences and that tie the two together, students are able to apply their skills in an ethical and sustainable manner to make contributions that address societal and individual needs.

Accredited by the Engineering Accreditation Commission of ABET, https://www.abet.org/, under the General Criteria and the Bioengineering and Biomedical Engineering Program Criteria.

STEM-OPT for international students on F-1 visas

This program may be eligible for an Optional Practical Training extension for up to 24 months. This OPT work authorization period may help international students gain skills and experience in the U.S. Those interested in an OPT extension should review ASU degrees that qualify for the STEM-OPT extension at ASU's International Students and Scholars Center website.

The OPT extension only applies to students on an F-1 visa and does not apply to students completing a degree through ASU Online.

At a glance

- **College/school:** Ira A. Fulton Schools of Engineering
- **Location:** Tempe or Online, ASU Local

- **Second language requirement:** No
- **STEM-OPT extension eligible:** Yes
- **First required math course:** MAT 265 - Calculus for Engineers I
- **Math intensity:** Substantial 

Curriculum

View 2025 - 2026 curriculum | View curriculum 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 plus master's degree with:

Biomedical Engineering, MS

Acceptance to the graduate program requires a separate application. Students typically receive approval to pursue the accelerated master’s during the junior year of their bachelor's degree program. Interested students can learn about eligibility requirements and how to apply.

Admission requirements

General university admission requirements:

All students are required to meet general university admission requirements.
First-year | Transfer | International | Readmission

Additional requirements:

The admission standards for majors in the Ira A. Fulton Schools of Engineering, shown below, are higher than minimum university admission standards. International students must meet the same admission standards, with the possible additional requirement of a minimum English language proficiency test score. If the university requires an English proficiency test score from the applicant, then admission to engineering requires a minimum TOEFL iBT score of 79 (internet-based test, taken in a testing center), a minimum IELTS score of 6.5, a minimum PTE score of 58, a minimum Duolingo English score of 105, or a minimum Cambridge English exam score of 176.

First-year admission:

1. minimum 1210 SAT combined evidence-based reading and writing plus math score or minimum 24 ACT combined score, or a minimum high school cumulative GPA of 3.00 in ASU competency courses, or class ranking in top 25% 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 fewer 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 a minimum high school cumulative GPA of 3.00 in ASU competency courses, or class ranking in top 25% 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 ASU 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 3.00 in ASU courses (or equivalents) in CHM 114, MAT 265, MAT 266, BIO 181, PHY 121 and PHY 122

Tuition information

When it comes to paying for higher education, everyone's situation is different. Students can learn about ASU tuition and financial aid options to find out which will work best for them.

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 visit the Change of Major form for information about how to change a major to this program.

Attend online

ASU Online

ASU offers this program in an online format with multiple enrollment sessions throughout the year. Applicants may view the program's ASU Online page for program descriptions and to request more information.

ASU Local

It is now possible to earn an ASU degree with ASU Local, an integrated college experience in which students take advantage of in-person success coaching and programming experiences on site while completing one of 130+ undergraduate online degree programs, all of which come with online faculty interaction and tutoring support.

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.

Global opportunities

Global experience

Students studying biomedical engineering gain valuable hands-on experience when studying abroad --- experience that enhances their resumes. With more than 300 Global Education program opportunities available to them, biomedical engineering students are able to tailor their experience to their unique interests and skill sets. Whether in a foreign country, in the U.S. or online, students build communication skills, learn to adapt and persevere, and are exposed to research and internships across the world, increasing their professional network.

Career opportunities

Biomedical engineers are primarily employed in:

- governmental regulatory agencies
- hospital and research facilities
- medical and educational institutions
- medical device, biotechnology and pharmaceutical industries

In industry, they may work in all aspects of product development, including:

- business development
- manufacturing
- marketing
- quality
- regulatory compliance
- research and design
- sales

Because of their background in both the engineering and medical fields, biomedical engineers often serve a coordinating or interfacing function and have a key role in transdisciplinary teams. Government positions may involve evaluating new technologies, testing product quality and safety, and setting standards.

In the hospital, biomedical engineers serving in a clinical engineering function may provide advice on the selection and use of medical equipment, and supervise performance testing and maintenance. Biomedical engineers may also build customized devices for special health care, rehabilitation or research needs.

Example job titles and salaries listed below are not necessarily entry level, and students should take into consideration how years of experience and geographical location may affect pay scales. Some jobs

also may require advanced degrees, certifications or state-specific licensure.

Career	*Growth	*Median salary
Bioinformatics Scientist	3.9%	$87,300
Biomedical Engineer	5.1%	$99,550
Biostatistician	31.6%	$98,920
Compliance Manager	3.3%	$128,620
Human Factors Engineer	11.7%	$96,350
Microsystem Engineer	3.3%	$104,600
Regulatory Affairs Manager	3.3%	$128,620
Technical Sales Engineer	4.7%	$108,530
Validation Engineer	11.7%	$96,350

* 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

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.

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

Contact information

Harrington Bioengineering Program | ECG 334
sbhse.advising@asu.edu
480-965-3028