Software Engineering, BS

TSSERBS

Some accelerated combinations are not available to ASU Online students. Interested students should contact their academic advisor for more information.

Are you seeking the opportunity to apply new technologies to improve quality of life? Through this program, you'll become a skilled software engineer who can solve a variety of problems using interdisciplinary tools.

Program description

The Bachelor of Science program in software engineering blends engineering, computing, project leadership and software construction.

Students learn how to create innovative software solutions to today's problems. Software systems are complex, often including millions of lines of code. Graduates of this program have the knowledge and skills of a defined engineering approach to complex systems analysis, planning, design and construction.

The program has a unique, project-driven curriculum, establishing a new model for software engineering education. The program is built around the concepts of engaged learning, discovery-based education, and learning by doing. Students learn by solving engaging projects, commonly as a member of a development team. In each semester of the program, students complete projects that emphasize communication, teamwork, critical thinking and professionalism. They have flexibility in designing their course of study and select technical electives from a pool of courses in different software engineering application areas; these include web and mobile applications, embedded systems and other interdisciplinary areas.

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

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.

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:** Polytechnic WUE 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:

Computer Science (Big Data Systems), MCS

Computer Science (Big Data Systems), MS

Computer Science (Biomedical Informatics), MS

Computer Science (Cybersecurity), MCS

Computer Science (Cybersecurity), MS

Computer Science (Media Arts and Sciences), MS

Computer Science, MCS

Computer Science, MS

Robotics and Autonomous Systems (Artificial Intelligence), MS

Software 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. Admission may be granted with one deficiency in no more than two [competency areas](#). Deficiencies in both math and laboratory science are not acceptable.

Transfer admission requirements:

Transfer students with fewer than 24 transferable college credit hours:

1. minimum transfer GPA of 2.75 for fewer than 24 transfer hours, **and**
2. meet the first-year admission requirements

Transfer students with more than 24 transferable college credit hours:

1. Minimum transfer GPA of 2.75 for 24 or more transfer hours, **and**
2. If ASU Admission Services requires submission of a high school transcript, admission may be granted with one deficiency in no more than two [competency areas](#). Deficiencies in both math and laboratory science are not acceptable.

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.

Program learning outcomes

Program learning outcomes identify what a student will learn or be able to do upon completion of their program. This program has the following program outcomes:

- Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics (ABET 1)
- Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors. (ABET 2)
- Use the techniques, skills, and modern engineering tools and processes necessary for software engineering practice. (ABET-SER1)

Global opportunities

Global experience

Students in software engineering gain valuable hands-on experience when studying abroad --- experience that enhances their resumes. With more than 300 programs available in a variety of countries around the world, study abroad enables students to tailor their experience to their unique interests and skill sets. In a competitive field, students stand out with the heightened cultural competency and the leadership and critical thinking skills they gain when studying abroad. More information on available programs can be found on the [Global Education Office website](#).

Career opportunities

Software engineers solve a broad set of transdisciplinary problems and apply new technologies to improve quality of life.

Graduates are prepared for advanced study in computing or an allied field, or to enter the computing profession, most commonly as application software engineers. They design and engineer innovative systems that may include mechanical and electrical components that interact with software.

According to the Bureau of Labor Statistics, software engineers are highly paid, and there is significant growth in the number of employment opportunities. Software engineering jobs may include:

- creating applications for mobile devices
- creating web applications
- designing, creating and validating software for avionics, robotics and similar systems

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
Computer Programmer	-11.2%	$97,800
Computer Science Professor ☀	5.3%	$84,760
Computer Software Quality Engineer ☀	20.3%	$99,620
Information Technology Manager (IT Manager) ☀	15.4%	$164,070
Software Developer ☀	25.7%	$127,260

* 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

Contact information

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