



## Arizona State University (Tempe campus)

### Materials Science and Engineering, BSE

#### Study details

**Course type:** Bachelor's degree

**Degree:** Materials Science and Engineering, BSE ESMSEBSE

**Study mode:** Full time

**Duration:** 48 Month

#### Cost of study

**Cost :** 35 430 USD

**Reg. fee :** 85 USD

**Scholarship :**

**Insurance :** 2 765 USD

#### Intake/s

Jan/May/Aug

#### Requirements

##### Academic requirements

First-year students must:

- Have a 3.00 grade point average (GPA) (a "B" or better where "A"=4.00) from a secondary school. Some ASU programs may have higher admission or English proficiency requirements and may consider a minimum ACT or SAT score.
- Must have three years of high school coursework. (If you are currently in high school, ASU needs to see 9–11 grade coursework. If you have completed high school, ASU needs to see 10–12 grade coursework.)
- Must have and present a completed high school diploma or certificate.

##### Conditional admission

ASU may offer conditional undergraduate admission to international applicants to an on-campus program who meet the academic (aptitude) requirements but who are not proficient in English. This offer of conditional admission will give you time to improve your English proficiency before you start classes at ASU. Your conditional admission offer is good for up to three semesters, during which time you must meet one of these requirements to begin your ASU experience.

##### Competency requirements

International students who completed high school outside the U.S. are required to meet the following competency requirements:

- Math: four years (algebra I, geometry, algebra II and one course requiring algebra II as a prerequisite).

- Laboratory science: three years total (one year each from any of the following areas are accepted: biology, chemistry, earth science, integrated sciences and physics).

## **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

## **Accommodation**

Provided by partner agencies

## **Speciality**

### **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.

## **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 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 2.75 in all critical courses for Terms 1 and 2 (see major map for critical courses)

## Additional information

### Program description

Novel materials are tailored to meet the needs of targeted applications and become the foundation for all engineering disciplines. Such materials enable many new technologies and are commonly used in bioengineering and medicine, pharmaceuticals, electronics, optics, architecture and transportation, aviation and aerospace, energy conversion, environmental engineering and numerous industrial systems.

Materials science and engineering is concerned with the discovery, synthesis, processing, manufacturing and characterization of substances within these general classes of materials: sustainable materials, polymers, metals, semiconductors, ceramics and composites. An understanding of the molecular structure and well-designed processing are the keys to engineering materials with outstanding properties for next-generation applications.

Courses in the undergraduate program in materials science and engineering prepare students to discover and design new and better materials that make an impact on and improve people's lives and keep America on the cutting edge of technology.

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

### 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:

- Materials Science and 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.

## **Global opportunities**

### **Global experience**

A study abroad experience can equip students with the skills they need to effectively and efficiently work with people anywhere in the world. It grants them the chance to gain an international viewpoint on not only engineering itself, but on being a human in this increasingly global world.

Participation in a Global Education program helps students broaden their own horizons and open up possibilities they may have not known existed. Students gain valuable, resume-enhancing experience when studying abroad, and students stand out in a competitive field with the heightened cultural competency and leadership and critical thinking skills they acquired when studying abroad.

## **Career opportunities**

Since materials science and engineering has such wide-scale applications, graduates find jobs in virtually every field, such as aerospace, defense, auto industry, telecommunications, microelectronics, computers, bioengineering, sports, renewable energy, academia and national research labs. They are among the highest paid scientists and engineers.

## **Program education objectives**

The materials science and engineering program has the following educational objectives:

- Graduates can solve real-world materials engineering challenges within their organizations by applying the required technical knowledge, skills and critical thinking.
- Graduates have made demonstrable progress toward a graduate degree or be considered for a technical promotion potentially within three to five years of graduation.
- Graduates can demonstrate professionalism, leadership, lifelong learning, professional development and ability to work in teams, and hold positions of increasing responsibility within their organizations.
- Graduates can demonstrate an ethical approach to their profession including consideration of economic, societal, cultural and environmental impact.

## **Student outcomes**

Graduates of materials science and engineering program are expected to have attained:

- an ability to acquire and apply new knowledge as needed, using appropriate learning strategies
- an ability to 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
- an ability to communicate effectively with a range of audiences
- an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
- an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks and meet objectives
- an ability to identify, formulate and solve complex engineering problems by applying principles of engineering, science and mathematics

- an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental and societal contexts

An additional outcome for ASU materials science and engineering graduates is to demonstrate integration of relationships of structure, properties, processing and performance related to material systems using experimental, computational and statistical methods.