Materials Science and Engineering, MS

ESMATEMS

Program Description

Degree Awarded: MS Materials Science and Engineering

This graduate program prepares students for professional careers in materials science and engineering and related fields in industry, government and educational institutions.

At a Glance

- College/School: Ira A. Fulton Schools of Engineering
- Location: Tempe campus or online

Accelerated Degrees

This degree is also offered in an accelerated format with:

- Chemical Engineering, BSE
- Materials Science and Engineering, BSE
- Mechanical Engineering, BSE
- Mechanical Engineering (Computational Mechanics), BSE
- Mechanical Engineering (Energy and Environment), BSE

Acceptance to the graduate program requires a separate application. During their junior and senior years, eligible students will be advised by their academic departments to apply.

Degree Requirements
32 credit hours and a portfolio, or
32 credit hours and a thesis, or
32 credit hours including the required applied project course (MSE 593)

**Required Core (6 credit hours)**
- MSE 515 Introduction to Electrical, Magnetic and Optical Properties (3)
- MSE 523 Structural and Mechanical Properties of Materials (3)
- MSE 524 Advanced Thermodynamics (3)
- MSE 526/527 Materials Physics I and II (6)
- MSE 561 Phase Transformations, Kinetics, and Diffusion in Solids (3)

**Technical Electives (18 credit hours)**

**Other Requirement (2 credit hours)**
- MSE 591 Seminar (2)

**Culminating Experience (0 or 6 credit hours)**
- MSE 599 Thesis (6) or portfolio

**Additional Curriculum Information**
Students must take six credit hours of core courses selected from the list above. Note that the fourth choice requires both MSE 526 and MSE 527 but only the MSE 526 may be counted as a technical elective. This selection is most appropriate for students who have some background in modern physics.

Students must take 18 credit hours of technical electives; they should refer to the master's degree handbook and checksheets for options.

MSE 591 is a one credit hour course to be taken in two semesters. The seminar course consists of a series of seminars presented by invited speakers and graduate students.

The materials science and engineering MS program has two track options: a thesis track and a nonthesis track.

Nonthesis Track -- All students are admitted to the nonthesis track. The nonthesis track has a portfolio option. Students in the portfolio track will submit, in the last semester of their program, a portfolio containing at least two projects from previous materials science and engineering coursework, along with a paper explaining the projects. Students must successfully complete the portfolio requirements to pass the culminating experience. Students completing a portfolio must also take an extra six credit hours of elective coursework to reach the required 32 credit hours for the program. If students wish to change to the thesis track, a faculty advisor has to be secured, and then a petition can be submitted to change to the thesis track.

Thesis Track --- Students in the thesis track must complete a thesis and pass the thesis defense examination.
Admission Requirements

Applicants must fulfill the requirements of both the Graduate College and the Ira A. Fulton Schools of Engineering.

Applicants are eligible to apply to the program if they have earned a bachelor's or master's degree, in any field, from a regionally accredited institution.

Applicants must have a minimum of a 3.00 cumulative GPA (scale is 4.00 = "A") in the last 60 hours of a student's first bachelor's degree program, or applicants must have a minimum of a 3.00 cumulative GPA (scale is 4.00 = "A") in an applicable master's degree program.

Admission to the materials science and engineering graduate program is highly competitive. All applicants must submit:

1. graduate admission application and application fee
2. official transcripts from all prior institutions attended
3. official GRE score
4. personal statement
5. resume or curriculum vitae
6. three letters of recommendation
7. proof of English language proficiency

Additional Application Information

An applicant whose native language is not English (regardless of current residency) must provide proof of English proficiency. Applicants whose native language is not English are required to achieve a minimum score of 100 on the Internet-based TOEFL.

Admission to the 4+1 degree program requires a 3.50 ASU GPA (scale is 4.00 = "A") in degree-applicable courses. All applications are subject to review and admission is not guaranteed.

Applicants should see the program website for application deadlines.

Deadlines

Fall

Spring
Attend Online

ASU offers this program in an online format with multiple enrollment sessions throughout the year. Applicants may view the program description and request more information here.

Contact Information

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