

MATERIALS SCIENCE AND ENGINEERING, MASTER OF SCIENCE IN ENGINEERING

Advising and Review of Student Performance

Each graduate student will normally have one or more faculty advisors. Students who are entering the M.S.E. program and plan to pursue a degree without an essay will be assigned an *academic* advisor. Students who are entering the M.S.E. program and plan to pursue a degree with an essay will be advised by their *research* advisor. Students who are entering the Ph.D. program will be advised by their research advisor. Students with a research advisor in another department will be assigned an internal academic advisor from among the full-time faculty in the department. Student progress will be assessed regularly by the faculty advisor(s) and the Graduate Program Committee. Students are expected to remain in regular communication with their faculty advisor(s).

Each student's progress will be reviewed annually by the Graduate Program Committee, in consultation with the student's advisor(s). To assist in this evaluation, students are required to submit a form (available from the academic program administrator) detailing progress toward completion of the degree requirements. This form must be signed by the student's advisor(s) and filed with the Graduate Program Committee each year. The department must be convinced that all academic requirements have been satisfied by the candidate before a recommendation to confer a graduate degree is passed on to the University Graduate Board.

Grade requirements for graduate course work differ according to the degree program, as described below. All graduate students are required to maintain an overall grade point average (GPA) of 3.0 or higher; failure to do so will ordinarily be cause for dismissal from the program. Independent research courses will not be counted toward completion of course requirements.

The department believes that teaching experience is important to professional growth; therefore, a student may be required to serve as a teaching assistant during their academic career.

Fulltime credit enrollment requirement for WSE graduate students:

- All WSE Graduate Students must be enrolled in at least 9 credits to maintain fulltime status (in fall/spring semesters).
- Typically, fulltime WSE PhD students will be enrolled in a combination of WSE classes and/or research for a total of 20 WSE credits per semester (fall/spring).
- Typically, fulltime WSE Masters students will be enrolled in a combination of classes and/or research for a total of 9-10 credits a semester (fall/spring).

Admission Requirements

To be admitted to graduate study in the Department of Materials Science and Engineering, students must submit credentials sufficient to convince the faculty that they have the potential to successfully complete the program requirements. Under the new GRE test, applicants should take the General Test package containing the Mathematical Reasoning test.

Hopkins undergraduate students who plan to pursue a M.S.E. degree in their fifth year are encouraged to submit an application early in their fourth year of study.

Please visit the WSE Graduate Admissions Website (<https://engineering.jhu.edu/admissions/graduate-admissions/full-time-programs/how-to-apply/>) for more information.

Program Requirements

Requirements for the M.S.E. Degree with Essay

The degree of Master of Science in Engineering (M.S.E.) with Essay is awarded subject to the recommendation of the student's advisor and departmental approval, based on satisfactory completion of the following requirements:

Code	Title	Credits
EN.500.603	Graduate Orientation and Academic Ethics	
Materials Science and Engineering		
EN.510.601	Structure Of Materials	3
EN.510.602	Thermodynamics Of Materials	3
EN.510.603	Phase Transformations of Materials	3
Select two 600-level or higher electives in Materials Science and Engineering or related fields		6
Select three 400-level or higher electives in Materials Science and Engineering or related fields ¹		9
Total Credits		24

¹ Subject to the following rules:

- Each elective must be worth at least three credits. Multiple courses that add up to three credits may be used in place of one three-credit course with approval from the Master's Degree Committee.
- Up to two of the elective courses may be taken from within the Engineering for Professionals (EP) part-time program.
- Up to two of the electives may be business courses.
- Any elective taken from outside the department (including all EP courses) requires prior approval of the Master's Degree Committee. The Master's Degree Committee will determine the appropriate number of credits for any elective taken outside the Whiting School of Engineering.
- With approval of the Master's Degree Committee, the student can transfer up to two graduate courses from another institution. Students desiring such credit must make the request in writing to the Master's Degree Committee by the end of the first semester after matriculation. This request must include a description of the course, a course syllabus, and documentation of the grade received. Please note that transfer coursework grades do not count towards calculation of the GPA.
- Responsible Conduct of Research training (AS.360.624 Responsible Conduct of Research (Online) or AS.360.625 Responsible Conduct of Research) in accordance with the Whiting School of Engineering policy. Details about this requirement, including the criteria for determining whether the online or in-person course must be taken, are provided in the description of the policy.
- Training on academic ethics in accordance with the Whiting School of Engineering policy. This requirement can be satisfied by passing EN.500.603 Graduate Orientation and Academic Ethics.

- A grade of C or better must be achieved in each course to obtain credit.
- A overall grade point average of 3.0 must be maintained, and a grade point average of a 3.0 is required to earn the degree at the end of the program.
- Attendance is required at the weekly Department of Materials Science and Engineering Seminar.

A master's essay or journal publication is required. A master's essay must be approved by one faculty reader and confirmed to the requirements of the Graduate Board. For a journal publication a student must submit to the Master's Degree Committee an article describing their original research that has been published (or accepted for publication) in an archival, peer-reviewed technical journal. The student must be the primary author of the article. Research for the master's essay or journal publication may be conducted with a corporate sponsor through the INBT Co-Op Program.

Admission to the M.S.E. program is through the standard graduate admissions process. The typical duration of the program is 21 months. The student's transcript will reflect a "Master of Science in Engineering with Essay." There is an option to apply for the opportunity to complete an internship/co-op with an essay which may alter completion timelines but is considered part of the degree program.

Requirements for the M.S.E. Degree without Essay

The degree of Master of Science in Engineering (M.S.E.) is awarded subject to the recommendation of the student's advisor and departmental approval, based on satisfactory completion of the following requirements:

Code	Title	Credits
EN.500.603	Graduate Orientation and Academic Ethics	
Materials Science and Engineering		
EN.510.601	Structure Of Materials	3
EN.510.602	Thermodynamics Of Materials	3
EN.510.603	Phase Transformations of Materials	3
Select four 600-level or higher electives in Materials Science and Engineering or related fields ¹		12
Select three 400-level or higher electives in Materials Science and Engineering or related fields ¹		9
Total Credits		30

¹ Subject to the following rules:

- Each elective must be worth at least three credits. Multiple courses that add up to three credits may be used in place of one three-credit course with approval from the Master's Degree Committee.
- Up to two of the elective courses may be taken from the Engineering for Professionals (EP) part-time program.
- Up to two of the electives may be business courses.
- Any elective taken from outside the department (including all EP courses) requires prior approval of the Master's Degree Committee. The Master's Degree Committee will determine the appropriate number of credits for any elective taken outside the Whiting School of Engineering.
- With approval of the Master's Degree Committee, the student may transfer up to two graduate courses from another institution. Students desiring such credit must make the request in writing to

the Master's Degree Committee by the end of the first semester after matriculation. This request must include a description of the course, a course syllabus, and documentation of the grade received. Please note that transfer coursework grades do not count towards calculation of the GPA.

- Training on academic ethics in accordance with the Whiting School of Engineering policy. This requirement can be satisfied by passing EN.500.603 Graduate Orientation and Academic Ethics.
- A grade of C or better must be achieved in each course to obtain credit.
- Responsible Conduct of Research training (AS.360.624 Responsible Conduct of Research (Online) or AS.360.625 Responsible Conduct of Research) in accordance with Whiting School of Engineering policy. Details about this requirement, including the criteria for determining whether the online or in-person course must be taken, are provided in the description of the policy (<https://engineering.jhu.edu/wse-research/resources-policies-forms/responsible-conduct-of-research/>).
- A overall grade point average of 3.0 must be maintained, and a grade point average of a 3.0 is required to earn the degree at the end of the program.
- Attendance is required at the weekly Department of Materials Science and Engineering Seminar.
- Up to two of the elective courses may be Graduate Research in Materials Science (EN.510.807 Graduate Research In Materials Science and EN.510.808 Graduate Research), which may be taken in any session, Fall or Spring). Note that 117 hours of research per course are required for credit.

Admission to the M.S.E. program is through the standard graduate admissions process. The typical duration of the program is 12 months. The student's transcript will reflect a "Master of Science in Engineering."