

# ELECTRICAL AND COMPUTER ENGINEERING, MASTER OF SCIENCE IN ENGINEERING

Courses from several branches of Electrical and Computer Engineering are included in the department's extensive and adaptable Master of Science in Engineering (M.S.E.) degree program. Furthermore, the following specific M.S.E. specialty areas are available:

1. Artificial Intelligence and Data Science
2. Language and Speech Processing
3. Photonics and Optoelectronics
4. Computer Engineering and Microelectronics
5. Image Processing and Analysis
6. Control Systems
7. Sustainable Energy

We also have a concentration called the Human Language Technology Masters-Level (<https://www.clsp.jhu.edu/human-language-technology-masters/>).

More information on these research areas and our current projects can be found here (<https://engineering.jhu.edu/ece/research/>).

## Program Requirements

A student who has completed a program of study similar to that required for the B.S. in electrical engineering degree must complete the following requirements for the M.S.E. degree:

1. Satisfactory completion of eight one#semester 3-4 credit graduate courses (xxx.400 # xxx.799) approved by the advisor.

a) At least five of these courses must come from the full-time ECE department (EN.520.6XX). These courses may not include primarily research/independent study courses (e.g. 520.800, 520.802, 520.806, etc.), or seminar courses. The ECE Seminar Course (520.895) and Special Studies courses cannot count towards the 5 ECE courses.

b) Three additional courses must be level 600 or above. One course may be a primarily research/independent study course (e.g. 520.800, 520.801, 520.806 etc.) Students may count one research course (e.g. 520.800, 520.802, 520.806, etc.) as one of the additional 3 courses that make up the eight 3-4 credit courses required. Students must submit a research report for this course.

2. In addition to the eight courses above, students must also fulfill one of the following three requirements:

a) Satisfactory completion of two additional one#semester 3-4 credit graduate courses (xxx.400 # xxx.799) approved by the advisor. At least one of these courses must come from the full-time ECE department (520.XXX). These can include Independent Study and Dissertation or Master's Research, accompanied by the research report.

b) Write an M.S.E. essay (the official name of the master's thesis at Johns Hopkins) acceptable to a member of the ECE faculty. The M.S.E. essay must be submitted to the library and must follow

the guidelines described here (<https://www.library.jhu.edu/library-services/electronic-theses-dissertations/>); or

c) Completion of a special project acceptable to a member of the ECE faculty and writing a corresponding report. A copy of this report must be submitted to the ECE office and becomes a permanent part of the student's record.

3. Students are required to successfully complete two semesters of EN.520.895: ECE Seminar.

- Full-time MSE students are expected to take at least three, 3-4 credit courses for each of their first two semesters. To fulfill requirements 1 and 2, a course is satisfactorily completed if a grade from A+ to C- or a "P" is obtained. No more than one C+, C, or C- and/or "P/S" grade can be counted toward the degree requirements. See advising manual for further details.
- Students may transfer in up to two courses from outside JHU. These courses must have been completed after the undergraduate degree was conferred, not applied to a degree elsewhere, and must be approved in advance by the department.
- Every graduate course designated Independent Study, Dissertation Research, or Special Studies counted toward the M.S.E. degree must include a written report. A copy of the report will become part of the student's permanent file.
- Every student must register for a minimum of two semesters as a full-time resident graduate student (this rule does not apply to students in the concurrent B.S./M.S.E. program). Full-time resident M.S.E. students must be enrolled in at least 9 credits to maintain fulltime status (in fall/spring semesters).
- Every student must be registered in the semester that degree requirements are met; this includes students who have no courses remaining in which to enroll but must resolve coursework for which an "Incomplete" grade was assigned and those who must complete other academic requirements, such as a language or computing requirement (these students may apply for Nonresident Status).
- Every student must earn the M.S.E. degree within five consecutive academic years (ten semesters). Only semesters during which a student has a university-approved leave of absence are exempt from the ten-semester limit; otherwise, all semesters from the beginning of the student's graduate studies – whether the student is resident or not – count toward the ten-semester limit.
- Every student must successfully pass the Graduate Academic Ethics course (EN.500.603 (01)) by the end of their first semester in graduate status.
- Every student must complete Responsible Conduct of Research. (Please see the WSE Policy on the Responsible Conduct of Research (<https://engineering.jhu.edu/research/resources-policies-forms/responsible-conduct-of-research-training-for-students-and-postdoctoral-fellows-revised-spring-2020/>)).

## Academic/Research Probation

Whenever it is determined that a graduate student has failed to meet minimum academic or research requirements, that student may be placed on academic probation. Students who obtain D or F grades in a course are often placed on academic probation. Receiving a D or F while on academic probation usually leads to the student's departure from the program.

This change in status requires a formal letter and a meeting between the student and either their faculty advisor, chair, and/or departmental

director of graduate studies. The letter should clearly outline the student's academic shortcomings, indicate the corrective measures necessary to remain in the program and state the length of the student's probationary period. Any funding ramifications for the student should be included as well.

Please see the full policy (<https://homewoodgrad.jhu.edu/wp-content/uploads/sites/37/2019/11/2018-Homewood-Graduate-Student-Probation-Funding-Withdrawal-and-Dismissal-Policy.pdf>) for more information on process, appeals, etc.