Master of Science in Electrical Engineering (MSEE)

Master's Degrees

Either a thesis option or a course option may be selected. The special requirements for these options are as follows:

Course Option

This option is intended for those employed in local industry who wish to pursue a graduate degree on a part-time basis, or for full-time students who do not seek careers in research. Students must have a cumulative grade point average of at least 3.2 out of a possible 4.0 over all courses applied toward the degree. Under the course option, students may not take ESE 599 Master's Research, and with faculty permission may take up to 3 units of ESE 500 Independent Study.

Thesis Option

This option is intended for those pursuing full-time study and engaged in research projects. Candidates for this degree must complete a minimum of 24 credit hours of course instruction and 6 credit hours of thesis research (ESE 599). Three (3) of these credit hours of thesis research may be applied toward the 15 core electrical engineering credit hours required for the MSEE program. Any of these 6 hours of thesis research may be applied as electives for the MSEE, MSSSM, MSDAS, MCEng and MEngR programs. The student must write a master’s thesis and defend it in an oral examination.

MS in Electrical Engineering

Students pursuing the degree Master of Science in Electrical Engineering (MSEE) must complete a minimum of 30 credit hours of study consistent with the residency and other applicable requirements of Washington University and the School of Engineering & Applied Science, and subject to the following departmental requirements.

- A minimum of 15 of these credit hours must be selected from the following list of core electrical engineering subjects taught by the Department of Electrical & Systems Engineering (ESE).
  - ESE 415 Optimization
  - ESE 513 Convex Optimization and Duality Theory
  - ESE 516 Optimization in Function Space
  - ESE 519 Convex Optimization
  - ESE 520-529 Applied probability category
  - ESE 530-539 Applied physics and electronics category
  - ESE 540-549 Control category
  - ESE 550-559 Systems category
  - ESE 560-569 Computer engineering category
  - ESE 570-579 Communications category
  - ESE 580-589 Signal and image processing category
  - ESE 599 Master's Research (thesis option only, max 3 units)
- The remaining courses in the program may be selected from senior- or graduate-level courses in ESE or elsewhere in the university. Courses outside of ESE must be in technical subjects relevant to electrical engineering and require the department’s approval. Undergraduate Laboratory courses may not be used to satisfy this requirement.
- At least 15 units of the 30 total units applied toward the MSEE degree must be in ESE courses which, if cross-listed, have ESE as the home department.
- A maximum of 6 credits may be transferred from another institution and applied toward the MSEE degree. Regardless of subject or level, all transfer courses are treated as electives and do not count toward the requirement of 15 credit hours of graduate-level electrical engineering courses.
- ESE 590 Electrical & Systems Engineering Graduate Seminar must be taken each semester. Master of Science students must attend at least three seminars per semester.
- The degree program must be consistent with the residency and other applicable requirements of Washington University and the School of Engineering & Applied Science.
- Students must have a cumulative grade point average of at least 3.2 out of a possible 4.0 over all courses applied toward the degree.