Master of Control Engineering (MCEng)

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 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.

Master of Control Engineering

The Master of Control Engineering (MCEng) degree is a terminal professional degree designed for students interested in an industrial career.

- The MCEng degree requires 30 units, which may include optionally 6 units for thesis or independent study.
- Required courses (15 units) for the MCEng degree include:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>ESE 441</td>
<td>Control Systems</td>
<td>3</td>
</tr>
<tr>
<td>ESE 543</td>
<td>Control Systems Design by State Space Methods</td>
<td>3</td>
</tr>
<tr>
<td>ESE 520</td>
<td>Probability and Stochastic Processes</td>
<td>3</td>
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and at least two of the following six courses:

- ESE 415 Optimization
- or ESE 425 Random Processes and Kalman Filtering
- or ESE 551 Linear Dynamic Systems I
- or ESE 552 Linear Dynamic Systems II
- or ESE 553 Nonlinear Dynamic Systems
- or ESE 547 Robust and Adaptive Control

- Elective Courses (15 units): The 15 units of electives should be courses of a technical nature at the senior and graduate levels approved by the program director.
- 6 units may be transferred from another school as electives provided that the courses were not needed for the student's bachelor's degree.
- ESE 590 Electrical & Systems Engineering Graduate Seminar must be taken each 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 4.0 over all courses applied toward the degree.