Master of Control Engineering (MCEng)

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

**Course Option**

The Master of Control Engineering is an academic master's degree designed mainly for both full-time and part-time students interested in proceeding to the departmental full-time doctoral program and/or an industrial career. Under the course option, students may not take ESE 599 Master's Research. With faculty permission, they may take up to 3 units of graduate-level 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 unit hours of course instruction and 6 unit hours of thesis research (ESE 599 [http://bulletin.wustl.edu/search/?P=E35%20ESE%20599]). 3 of these unit hours of thesis research may be applied toward the 15 core electrical engineering unit hours required for the MSEE program. Any of the 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.

**Degree Requirements**

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

- Required courses (15 units) for the MCEng degree include the following:

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<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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</table>

and at least two of the following five courses:

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

- The remaining courses in the program may be selected from senior or graduate-level courses in ESE or elsewhere in the university that are approved by the department.

Please consult the ESE departmental website (https://ese.wustl.edu/graduate/degereeprograms/Pages/master-control-engineering.aspx) for a list of allowable electives.

- A maximum of 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 McKelvey School of Engineering.
- Students must obtain a cumulative grade-point average of at least a 3.2 out of a possible 4.0 overall for courses applied toward the degree. Courses that apply toward the degree must be taken with the credit/letter grade option.