Master of Control Engineering (MCEng)

Either the thesis option or the 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 credit units of course instruction and 6 credit units of thesis research (ESE 599); 3 of these units of thesis research may be applied toward the 15 core electrical engineering units required for the MSEE program. Any of the 6 credit units 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:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<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>
</tr>
</tbody>
</table>

and at least two of the following six courses:

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

- 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/degreeprograms/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 by full-time graduate students each semester. This course can be taken with an unsatisfactory/satisfactory grade option.
- 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 3.0 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.