Master of Science in Engineering Data Analytics and Statistics (MSDAS)

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 Science in Engineering Data Analytics and Statistics 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 units of course instruction and 6 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 these 6 units of thesis research may be applied as electives for the MSEE, MSSSM, and MSDAS programs. The student must write a master's thesis and defend it in an oral examination.

**Degree Requirements**

The MS in Engineering Data Analytics and Statistics (MSDAS) degree requires 30 units.

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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESE 417</td>
<td>Introduction to Machine Learning and Pattern Classification</td>
<td>3</td>
</tr>
<tr>
<td>or CSE 417T</td>
<td>Introduction to Machine Learning</td>
<td></td>
</tr>
<tr>
<td>or CSE 517A</td>
<td>Machine Learning</td>
<td></td>
</tr>
<tr>
<td>ESE 415</td>
<td>Optimization</td>
<td>3</td>
</tr>
<tr>
<td>or ESE 513</td>
<td>Large-Scale Optimization for Data Science</td>
<td></td>
</tr>
<tr>
<td>ESE 520</td>
<td>Probability and Stochastic Processes</td>
<td>3</td>
</tr>
<tr>
<td>ESE 524</td>
<td>Detection and Estimation Theory</td>
<td>3</td>
</tr>
<tr>
<td>ESE 527</td>
<td>Practicum in Data Analytics &amp; Statistics</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Units</strong></td>
<td></td>
<td><strong>15</strong></td>
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Electives

- Please consult the ESE departmental website (https://ese.wustl.edu/academics/graduate-programs/masters-and-certificates/MS-in-Data-Analytics-Statistics.html) for a list of allowable electives.

- ESE 590 Electrical & Systems Engineering Graduate Seminar must be taken by full-time graduate students each semester. This course is taken with the unsatisfactory/satisfactory grade option.

- A maximum of 6 units may be transferred from another institution and applied toward the master's degree.

- 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.