The Second Major in Electrical Engineering

A second major in electrical engineering is ideal for students majoring in many areas, such as mathematics, physics, chemistry and biology. Students in the McKelvey School of Engineering as well as the other undergraduate divisions at Washington University now have the opportunity to pursue a second major in electrical engineering. Students are not allowed to add this second major to either the BS in Electrical Engineering or the BS in Applied Science (Electrical Engineering).

The requirements for a second major in electrical engineering are as follows:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESE 105</td>
<td>Introduction to Electrical and Systems Engineering</td>
<td>4</td>
</tr>
<tr>
<td>ESE 230</td>
<td>Introduction to Electrical and Electronic Circuits</td>
<td>4</td>
</tr>
<tr>
<td>ESE 232</td>
<td>Introduction to Electronic Circuits</td>
<td>3</td>
</tr>
<tr>
<td>ESE 260</td>
<td>Introduction to Digital Logic and Computer Design</td>
<td>3</td>
</tr>
<tr>
<td>ESE 330</td>
<td>Engineering Electromagnetics Principles</td>
<td>3</td>
</tr>
<tr>
<td>ESE 351</td>
<td>Signals and Systems</td>
<td>3</td>
</tr>
<tr>
<td>CSE 131</td>
<td>Introduction to Computer Science</td>
<td>3</td>
</tr>
</tbody>
</table>

In addition, students must select 18 units of ESE electives from the following list:

- ESE 330 through 399
- ESE 2971
- ESE 400
- ESE 405
- ESE 407
- ESE 425
- ESE 429 through 499
- ESE 503 through 589

The above program assumes completion of the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 132 &amp; Math 233</td>
<td>Calculus II and Calculus III</td>
<td>6</td>
</tr>
<tr>
<td>Math 217</td>
<td>Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>ESE 318</td>
<td>Engineering Mathematics A</td>
<td>3</td>
</tr>
<tr>
<td>ESE 319</td>
<td>Engineering Mathematics B</td>
<td>3</td>
</tr>
<tr>
<td>ESE 326</td>
<td>Probability and Statistics for Engineering</td>
<td>3</td>
</tr>
</tbody>
</table>

Students may petition to substitute electrical-science–oriented courses from other disciplines in Arts & Sciences (e.g., certain courses in physics or applied mathematics) for up to two of the above required courses. Within this second major in electrical engineering, areas of concentration are possible in devices and circuits, applied physics, signals and imaging, and control systems.

For more information, please contact the director of the program, Chuan Wang (https://engineering.wustl.edu/faculty/Chuan-Wang.html).