## MS ELECTRICAL ENGINEERING

### Program Learning Objectives

Our goal is to create a graduate degree program and a learning environment that result in graduates who possess the following:

1. Technical competency in their chosen disciplines;
2. Effective communication skills;
3. Awareness of the impacts of technology on society and the environment;
4. Understanding of ethics and responsible professional conduct;
5. Strong interpersonal and teamwork skills;
6. Appreciation of the need for life-long learning;
7. Leadership/planning/decision-making skills;
8. Critical thinking/complex problem-solving skills.

### Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 525</td>
<td>Stochastic Processes</td>
<td>4</td>
</tr>
<tr>
<td>or EE 513</td>
<td>Control Systems Theory</td>
<td></td>
</tr>
<tr>
<td>EE 563</td>
<td>Graduate Seminar (1, 1, 1)</td>
<td>3</td>
</tr>
<tr>
<td>EE 599</td>
<td>Design Project (Thesis) (or 9 units of approved Technical Electives and a comprehensive written examination)</td>
<td>9</td>
</tr>
</tbody>
</table>

### Additional Electrical Engineering Graduate Courses

Select from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 500</td>
<td>Individual Study</td>
</tr>
<tr>
<td>EE 502</td>
<td>Microwave Component and System Engineering</td>
</tr>
<tr>
<td>EE 504</td>
<td>Software Defined Radio</td>
</tr>
<tr>
<td>EE 509</td>
<td>Computational Intelligence</td>
</tr>
<tr>
<td>EE 511</td>
<td>Electric Machines Theory</td>
</tr>
<tr>
<td>EE 513</td>
<td>Control Systems Theory</td>
</tr>
<tr>
<td>EE 514</td>
<td>Advanced Topics in Automatic Control</td>
</tr>
<tr>
<td>EE 515</td>
<td>Discrete Time Filters</td>
</tr>
<tr>
<td>EE 518</td>
<td>Power System Protection</td>
</tr>
<tr>
<td>EE 519</td>
<td>Advanced Analysis of Power Systems</td>
</tr>
<tr>
<td>EE 520</td>
<td>Advanced Solar-Photovoltaic Systems Design</td>
</tr>
<tr>
<td>EE 521</td>
<td>Computer Systems</td>
</tr>
<tr>
<td>EE 522</td>
<td>Advanced Real-Time Operating Systems Design</td>
</tr>
<tr>
<td>EE 523</td>
<td>Digital Systems Design</td>
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<tr>
<td>EE 524</td>
<td>Solid State Electronics</td>
</tr>
<tr>
<td>EE 526</td>
<td>Advanced Digital Communications</td>
</tr>
<tr>
<td>EE 527</td>
<td>Advanced Topics in Power Electronics</td>
</tr>
<tr>
<td>EE 528</td>
<td>Digital Image Processing</td>
</tr>
<tr>
<td>EE 529</td>
<td>Microwave Device Electronics</td>
</tr>
<tr>
<td>EE 530</td>
<td>Fourier Optics</td>
</tr>
<tr>
<td>EE 531</td>
<td>Advanced VLSI Design</td>
</tr>
</tbody>
</table>

### Approved Technical Electives (400-500 level)

May be selected from the course list above and other advisor approved technical electives.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 532</td>
<td>VLSI Circuit Testing</td>
</tr>
<tr>
<td>EE 533</td>
<td>Antennas</td>
</tr>
<tr>
<td>EE 534</td>
<td>Advanced Photonic Systems</td>
</tr>
<tr>
<td>EE 541</td>
<td>Advanced Microwave Laboratory</td>
</tr>
<tr>
<td>EE 542</td>
<td>Advanced Real Time Embedded Systems</td>
</tr>
<tr>
<td>EE 544</td>
<td>Solid-state Electronics and VLSI Laboratory</td>
</tr>
<tr>
<td>EE 570</td>
<td>Selected Advanced Topics</td>
</tr>
<tr>
<td>EE 571</td>
<td>Selected Advanced Laboratory</td>
</tr>
</tbody>
</table>

### Total units

45

1. At least 8 units of approved Technical Electives must be at 500 level.
2. Not all courses listed are offered each academic year. Consult the EE Department for current information on course offerings.