ELECTRICAL ENGINEERING (M.S.)

The Electrical Engineering Program offers Master of Science, Master of Engineering, and Ph.D. degrees. The Master of Science and Master of Engineering degrees may be earned through the Engineering Outreach off campus program. These advanced degrees offer engineering students an opportunity to strengthen their knowledge of electrical engineering by taking graduate courses that focus on advanced subject matter and by participating in research.

Qualifications for Admittance

Candidates must have a bachelor’s degree in electrical engineering, with an undergraduate GPA of 3.00 or higher. International students who are required to take the TOEFL examination by the College of Graduate Studies must have a TOEFL score of at least 79 for the Internet-based Test (iBT) version, or 550 for the paper-based version. All candidates must submit scores from the general portion of the Graduate Record Examination.

Candidates who do not have a bachelor’s degree in electrical engineering may be admitted to the graduate program if they meet the following minimum requirements in addition to the Electrical and Computer Engineering department and College of Graduate Studies admissions requirements.

1. A bachelor’s degree in computer engineering, computer science, or another engineering discipline or in science such as mathematics or physics.
2. Demonstrated proficiency in the fundamentals of electrical engineering emphasized in the undergraduate curriculum. For each area of emphasis in electrical engineering, proficiency is demonstrated by successful completion of the following fundamental courses or their equivalents.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>ECE 212</td>
<td>Electrical Circuits II</td>
<td>3</td>
</tr>
<tr>
<td>ECE 320</td>
<td>Energy Systems I</td>
<td>3</td>
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<tr>
<td>ECE 329</td>
<td>Background Study in Electrical Machines</td>
<td>3</td>
</tr>
<tr>
<td>ECE 350</td>
<td>Signals and Systems I</td>
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<td>ECE 359</td>
<td>Background Study in Signals and Systems I</td>
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<td>ECE 420</td>
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<td>ECE 330</td>
<td>Electromagnetic Theory</td>
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<td>ECE 350</td>
<td>Signals and Systems I</td>
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<td>ECE 359</td>
<td>Background Study in Signals and Systems I</td>
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<tr>
<td>ECE 432</td>
<td>Propagation of Wireless Signals</td>
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<td>Engineering Statics</td>
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<tr>
<td>MATH 170</td>
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<td>MATH 175</td>
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<td>MATH 275</td>
<td>Analytic Geometry and Calculus III</td>
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<td>MATH 310</td>
<td>Ordinary Differential Equations</td>
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Electromagnetics Area

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<tbody>
<tr>
<td>ECE 212</td>
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<tr>
<td>ECE 212</td>
<td>Laboratory Physics II</td>
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<td>ECE 212</td>
<td>Electrical Circuits II</td>
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<td>ECE 310</td>
<td>Microelectronics I</td>
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<tr>
<td>ECE 319</td>
<td>Background Study in Electronics</td>
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<tr>
<td>ECE 350</td>
<td>Signals and Systems I</td>
<td>3</td>
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<td>ECE 359</td>
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<td>ECE 410</td>
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Power Area

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<tbody>
<tr>
<td>ECE 350</td>
<td>Signals and Systems I</td>
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<tr>
<td>ECE 359</td>
<td>Background Study in Signals and Systems I</td>
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<tr>
<td>MATH 330</td>
<td>Linear Algebra</td>
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<tr>
<td>STAT 301</td>
<td>Probability and Statistics</td>
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1 Does not count for graduate credit.

Students may petition the graduate committee for exceptions to the required background list if their advisor or interim advisor approves.

Master of Science. Major in Electrical Engineering.

General M.S. requirements apply, except that the department requires at least 24 credits of course work in addition to a thesis. The master’s program may provide advanced preparation for professional practice, or it may serve as the first step in graduate study leading to the Ph.D. degree. Specific courses to be taken for the program are not prescribed by the faculty. Students, with the assistance of their major professor, prepare their own program as soon as possible during their first semester, and submit it to the faculty for approval.

1. At least 18 credits in electrical engineering courses numbered 500 or above.
2. Two or more electrical engineering courses numbered above 500 in a given area for depth.
3. At least one course in each of two areas (outside the areas selected under item 2) to provide breadth.
4. Enrollment in ECE 591, during each semester of on-campus enrollment.