Graduate Degree Programs

The department offers graduate study and research in electrical and computer engineering leading to the degrees of Master of Engineering, Master of Science, and Doctor of Philosophy. Virtually every specialty within electrical and computer engineering is represented. Courses and research opportunities exist in the following areas:

- applied computation theory
- bioengineering, acoustics, and magnetic resonance engineering
- communications
- computer-aided design and test
- computer systems
- computer vision and robotics
- decision and control
- electromagnetic fields
- electrooptics, lasers, and plasmas
- integrated circuits
- microelectro-mechanical systems
- mobile computing and communication
- optoelectronics
- power and energy systems
- power electronics
- remote sensing and propagation
- semiconductor materials and devices
- semiconductor physics and computational electronics
- signal, image, and speech processing

The Master of Engineering degree in ECE is designed for students having a B.S. degree in ECE or a related field and offers an opportunity to broaden knowledge of areas in ECE beyond what is possible in a four-year undergraduate curriculum. The M.Eng. is a professional degree and is not intended for students interested in obtaining research experience. Students interested in a research-oriented career and all students interested in obtaining a Ph.D. should instead apply to the traditional M.S. or Ph.D. program.

The programs are very flexible to encourage interdisciplinary studies and research. Opportunity also exists for specializing in:

1. computational science and engineering via the Computational Science and Engineering (CSE) (http://www.cse.illinois.edu) transcriptable Concentration
2. energy and sustainability engineering via the Energy and Sustainability Engineering (EaSE) Option (http://ease.illinois.edu).

Admission

Applications must have completed an electrical engineering curriculum or a computer engineering curriculum substantially equivalent to those of the University of Illinois at Urbana-Champaign. A minimum grade point average of 3.00 (A = 4.00) for the last two years of undergraduate study is required. However, because of space limitations, applicants with GPAs below 3.50 are rarely admitted. All applicants must submit scores from the general test of the Graduate Record Examination (GRE) (http://www.ets.org).

All applicants whose native language is not English must submit a minimum TOEFL (http://www.toefl.org) score of 96 (iBT), 243 (CBT), or 590 (PBT); or minimum International English Language Testing System (IELTS) (http://www.ielts.org) academic exam scores of 6.5 overall and 6.0 in all subsections. Applicants may be exempt from the TOEFL if certain criteria (http://grad.illinois.edu/admissions/instructions/04c) are met. For those taking the TOEFL or IELTS, full admission status (http://grad.illinois.edu/admissions/instructions/04c) is granted for scores greater than 102 (TOEFL iBT), 253 (TOEFL CBT), 610 (TOEFL PBT), or 6.5 (IELTS). Limited status (http://grad.illinois.edu/admissions/instructions/04c) is granted for lesser scores and requires enrollment in English as a Second Language (ESL) courses (http://linguistics.illinois.edu/students/esl/guidelines) based on an ESL Placement Test (EPT) taken upon arrival to campus.

Faculty Research Interests

Research interests of the Electrical and Computer Engineering faculty include the broad areas of study described in the graduate programs section and more. Many faculty members hold affiliate status with other departments, and a number of faculty members from other departments hold affiliate status with the department. In addition, some faculty hold appointments in the Beckman Institute for Advanced Science and Technology, the Coordinated Science Laboratory, the Materials Research Laboratory, and the Micro and Nanotechnology Laboratory. All these affiliations provide opportunities for graduate student appointments to conduct research. For a detailed list of current research interests of the faculty, visit the department’s research Web site (http://ece.illinois.edu/research).
Centers, Programs, and Institutes
There are numerous interdisciplinary programs, laboratories, and centers for research within the department. These are described at the department’s research Web site (http://ece.illinois.edu/research).

Financial Aid
Fellowships, research assistantships, and teaching assistantships (all of which include tuition and partial fee waivers) are available for the majority of students who are admitted to the M.S. and Ph.D. programs. International applicants generally are not awarded teaching assistantships, but are eligible for the other forms of financial aid. All applicants, regardless of U.S. citizenship, whose native language is not English and who wish to be considered for teaching assistantships must demonstrate spoken English language proficiency (http://grad.illinois.edu/admissions/taengprof.htm) by achieving a minimum score of 24 on the speaking subsection of the TOEFL iBT or 8 on the speaking subsection of the IELTS. For students who are unable to take the iBT or IELTS, a minimum score of 5 is required on the EPI test (http://cte.illinois.edu/testing/oral_eng/epi_overview.html), offered on campus. All new teaching assistants are required to participate in the Graduate Academy for College Teaching (http://cte.illinois.edu/programs/ta_train.html) conducted prior to the start of the semester.

Please see the financial aid eligibility for the M.Eng. in Electrical and Computer Engineering under the "Masters" tab.

- Master of Engineering in Electrical and Computer Engineering (http://catalog.illinois.edu/graduate/graduate-majors/ece/me-ece)
- Master of Science in Electrical and Computer Engineering (http://catalog.illinois.edu/graduate/graduate-majors/ece/ms-ece)

for the degree of Doctor of Philosophy: Major in Electrical and Computer Engineering

Electrical and Computer Engineering, PhD

Entering with an approved Master’s Degree:

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<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tr>
<td>ECE 599</td>
<td>Thesis Research (min-max applied toward degree)</td>
<td>32-40</td>
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<tr>
<td>ECE 500</td>
<td>ECE Colloquium (registration for 0 hours every term while in residence)</td>
<td>0</td>
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<tr>
<td>3 permanent 500-level courses in 3 different Ph.D. Breadth Requirement areas (<a href="http://www.ece.illinois.edu/students/grad/overview/#breadth">http://www.ece.illinois.edu/students/grad/overview/#breadth</a>)</td>
<td>12</td>
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<tr>
<td>Elective courses (subject to Other Requirements and Conditions below)</td>
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<tr>
<td>Total Hours</td>
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Other Requirements and Conditions (may overlap) 1

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<th>Requirement</th>
<th>Description</th>
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<tr>
<td>Up to 4 credit hours of ECE 590 (Seminar) can be applied towards Elective courses.</td>
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<tr>
<td>Up to 12 credit hours of ECE 597 (Independent Study) can be applied towards Elective courses.</td>
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Information listed in this catalog is current as of 08/2019
Preliminary exam
Final exam or dissertation defense
Dissertation deposit
Minimum GPA: 3.0

1 For additional details and requirements refer to the department's Graduate Study Manual (http://www.ece.illinois.edu/academics/grad/overview) and the Graduate College Handbook (http://grad.illinois.edu/gradhandbook).

2 Qualifying Exam information (http://www.ece.illinois.edu/students/grad/QualExams/qual.html)