ELECTRICAL & COMPUTER ENGINEERING, PHD

for the degree of Doctor of Philosophy in Electrical & Computer Engineering

Department Head: Bruce Hajek (b-hajek@illinois.edu)
Director of Graduate Studies: Michael L Oelze (oelze@illinois.edu)
Overview of Admissions & Requirements: https://ece.illinois.edu/admissions/graduate/admissions-requirements-and-process
Overview of Grad College Admissions & Requirements: https://grad.illinois.edu/admissions/apply
Department Website: https://ece.illinois.edu/
Program Website: https://ece.illinois.edu/academics/grad
Department Faculty: https://ece.illinois.edu/about/directory/faculty
College Website: https://grainger.illinois.edu/
Contact: Jennifer Merry (merry@illinois.edu)
Address: 2120 Electrical and Computer Engineering Bldg, 306 N Wright St, Urbana, IL 61801
Phone: (217) 300-2414
Email: ece-grad-apps@illinois.edu

The Department of Electrical & Computer Engineering offers both a traditional doctoral program (for students with a previous master's degree) and a direct doctoral program (for students with only a bachelor's degree). Applicants with master's degrees are admitted only if a faculty member is willing to serve as the PhD thesis advisor. Accordingly, such applicants should write, call, or e-mail prospective PhD advisors and discuss their research interests and potential PhD thesis topics well in advance of application deadlines.

Opportunity exists for specializing in i) biomechanics via the Biomechanics (http://catalog.illinois.edu/graduate/engineering/concentration/biomechanics/) optional graduate concentration, ii) cancer nanotechnology via the Cancer Nanotechnology (http://catalog.illinois.edu/graduate/engineering/concentration/cancer-nanotechnology/) optional graduate concentration, and iii) computational science and engineering via the Computational Science & Engineering (http://catalog.illinois.edu/graduate/engineering/concentration/computational-science-engineering/) optional graduate concentration.

Admission Requirements
Admission for the spring semester is possible, in addition to the usual fall semester admissions.

Applicants must have completed an electrical engineering curriculum or a computer engineering curriculum substantially equivalent to those of the University of Illinois at Urbana-Champaign. Graduates of curricula in the physical sciences, mathematics, and computer science may be admitted if they are judged to have the necessary background to profit from graduate work in electrical and computer engineering. 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 are required to submit TOEFL (http://www.toefl.org/) or International English Language Testing System (IELTS) (http://www.ielts.org/) scores as evidence of English proficiency. Minimum admission requirements (https://grad.illinois.edu/admissions/instructions/04c/) are set by the Graduate College.

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 MS and PhD programs. Starting in Fall 2020, Grainger Engineering PhD students in their first five years of enrollment who meet the minimum eligibility requirements (https://grainger.illinois.edu/academics/graduate/phd-funding-guarantee/) are guaranteed a funded appointment for fall and spring that includes a full tuition waiver, a partial fee waiver, and a stipend. International applicants generally are not awarded teaching assistantships, but are eligible for the other forms of financial aid.

All applicants, regardless of US 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 (https://citl.illinois.edu/citl-101/teaching-learning/grad-academy-for-college-teaching/) conducted prior to the start of the semester and register for ECE 590TL.

Department Research
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/).

There are numerous interdisciplinary programs, laboratories, and centers for research within the department. These are described at the department’s research centers Web site (https://ece.illinois.edu/research/centers.asp).

Other Graduate Programs in the Department of Electrical & Computer Engineering

degrees:

- Electrical & Computer Engineering, MEng (http://catalog.illinois.edu/graduate/engineering/electrical-computer-engineering-meng/)
- Electrical & Computer Engineering, MS (http://catalog.illinois.edu/graduate/engineering/electrical-computer-engineering-ms/)

Optional concentrations for the PhD:

- Biomechanics (http://catalog.illinois.edu/graduate/engineering/concentration/biomechanics/)
- Cancer Nanotechnology (http://catalog.illinois.edu/graduate/engineering/concentration/cancer-nanotechnology/)
- Computational Science and Engineering (http://catalog.illinois.edu/graduate/engineering/concentration/computational-science-engineering/)
- Data Science & Engineering (http://catalog.illinois.edu/graduate/engineering/concentration/data-science-engineering/)

The Department of Electrical & Computer Engineering (ECE) offers graduate programs leading to the degrees of Master of Science and Doctor of Philosophy in Electrical & Computer Engineering and a Master of Engineering in Electrical & Computer Engineering. Virtually every specialty within electrical and computer engineering is represented with courses and research opportunities in the following areas: applied computational theory; bioengineering, acoustics, and biomedical imaging; communications; computer-aided design and testing; computer systems, computer vision and robotics; decision and control; electromagnetic fields; optics, 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.

Information listed in this catalog is current as of 07/2022