Master of Science in Electrical Engineering

Electrical Engineering and Computer Science

The technological advances that have made our society what it is today are due largely to the efforts of electrical engineers, computer engineers, and computer scientists. Among these advances are radio, television, telephones, wireless and mobile communications, personal computers, workstations, mainframe computers, aircraft avionics, satellite electronics, automobile electronics, office machinery, medical electronic equipment, video games, electric power generation and distribution systems, telecommunications, computer networks (including the Internet), personal entertainment products, radar, defense electronics, artificial intelligence, and a variety of computer software.

Vision and Mission

The vision of the EECS department is to provide a stimulating and challenging intellectual environment.

- To have classes populated by outstanding students.
- To be world class in an increasing number of selected areas of research.
- To have faculty members with high visibility among their peers.

The mission of the EECS department is

- To educate the next generation of electrical engineers, computer engineers, and computer scientists.
- To discover, apply, and disseminate knowledge.
- To be an asset to the community and to society.

Graduate Admission to the Department of Electrical Engineering and Computer Science

Applicants for the Master of Science degree in Electrical Engineering (M.S.E.E.) typically possess a degree in electrical engineering or computer engineering. However, a student with good preparation in a related field may qualify by taking appropriate additional undergraduate courses. Such courses normally do not count toward the graduate degree. A list of specific prerequisite courses (http://catalog.ku.edu/engineering/electrical-engineering-computer-science/ms-electrical-engineering%20https://eecs.ku.edu/deficiency-courses/) for the M.S. in Electrical Engineering degree is available in the graduate office or on the department’s website.

Applicants must demonstrate evidence of aptitude for graduate work, as shown by suitable performance in undergraduate and any graduate course work, by aptitude test scores on the Graduate Record Examination, and by academic letters of reference.

Unless the applicant’s native language is English or the applicant has received a baccalaureate degree or higher from an accredited U.S. institution of higher education, he or she must meet the department’s standard for the Test of English as a Foreign Language (TOEFL), which is higher than the general KU requirement. Applicants for graduate teaching assistantships must earn satisfactory scores on the Test of Spoken English.

Application Information & Deadlines

Fall Priority Deadline: December 15
Spring Priority Deadline: September 30

Applications accepted after the priority deadlines listed above will no longer be considered for fellowships and assistantships. All application materials must be submitted by March 1 (Fall semester admission) and October 1 (Spring semester admission). Visit the Graduate Studies website (http://www.graduate.ku.edu/) for the application procedure and fees.

International students and students who indicated English as a second language, are required to show proof of English proficiency for admission purposes and may need to check-in at the Applied English Center (http://www.aec.ku.edu/) (AEC) upon arrival on campus for orientation. This process serves to confirm each student’s level of English proficiency and determine whether English courses will be included as a requirement of the student’s academic program. Note: Students who demonstrate English proficiency at the waiver level or who have earned a degree from one of the specified English-speaking countries listed in the policy (http://policy.ku.edu/graduate-studies/english-proficiency-international-students/) are not required to check-in at the AEC (see eligibility requirements on the Graduate Studies website (https://graduate.ku.edu/english-proficiency-requirements/)).

Application Materials

- Online Application (https://graduate.ku.edu/ku-graduate-application/)
- GRE scores (school code 6871)
- Statement of objectives and resume
- Official transcript
- Letters of recommendation
- TOEFL scores (international students)
- Financial statement (international students only)

Submit all supporting documents and your graduate application online (http://www.graduate.ku.edu/).

Visiting Us

The graduate program staff is happy to work with all prospective students in determining the fit between the student and the program. In order to determine this, we feel that visiting our campus in Lawrence is a very important step. In order to facilitate your visit to KU, there are two main options:

The first, and most preferred, option entails simply applying for admission to the program. All prospective students are welcome to attend our Graduate Open House in mid-October or mid-March. Eligible admitted students may be invited to participate in Campus Visit Days in February (prior to the fall semester of your intended matriculation). These organized campus visit opportunities will allow you to gather a great deal of first-hand information which we hope will help you in making a final decision about whether to attend KU.

The second option is making arrangements to visit us on your own, outside of organized events. With early notification, we will do our best to work with you to provide information and schedule appointments with
M.S. Degree Requirements

The master’s degree program in Electrical Engineering offers a thesis and nonthesis option. The thesis option requires a minimum of 8 approved graduate courses, 6 hours of EECS 899 Master’s Thesis, EECS 802 and an oral defense of the thesis in the final semester. A master’s thesis should address an open problem in EECS. After evaluating current literature related to the problem of interest, students must design, build, and evaluate hardware or software systems or system models to prove or disprove their research hypothesis. Completing a thesis typically takes 2 semesters and produces results that could be published as a paper in conference proceedings or a professional journal. The nonthesis option requires a minimum of 9 approved graduate courses, 3 hours of EECS 891 Graduate Problems, EECS 802, and an oral defense of the project report in the final semester.

Electrical engineering students are encouraged to choose a project or thesis topic early in their graduate career, and identify a faculty advisor who is interested in supervising their work.

Central to the master’s program in Electrical Engineering is the development of each student’s Plan of Study. The plan must be approved by a committee of 3 EECS Graduate Faculty members. The Chair and at least 1 member of the committee must be tenured or tenured track members of the department graduate faculty. The plan must be developed and approved by the graduate office during the first semester, and must be consistent with the identified degree and goals. The Plan of Study outlines all course work and designates the thesis or nonthesis option. All plans must include at least 1 semester of EECS 802 Electrical Engineering and Computer Science Colloquium and Seminar on Professional Issues.

The student may select a set of courses from the specified list of electrical engineering courses. A current list of the courses and their requirements is available on the EECS website (http://www.eecs.ku.edu/current_students/graduate/focus_areas/). The graduate faculty members who approve the plan verify that courses selected meet the guidelines and are appropriate for the M.S. degree program. Modifications to the plan must be approved by the student’s committee and resubmitted to the graduate office for approval.

If an M.S. Plan of Study does not follow the specified course listing, students will be required to have the EECS graduate committee assess the submitted Plan of Study, goals and justification for approval. The plan must include a minimum of 5 EECS courses numbered 700 or higher, excluding EECS 801 Directed Graduate Readings, EECS 891 Graduate Problems, and EECS 899 Master’s Thesis or Report. A maximum of 3 courses outside the department and a maximum of 2 courses numbered below 700 may be counted toward the requirements for the degree. Courses numbered below 500 do not count toward the degree. All plans of study must include at least one semester of EECS 802 Electrical Engineering and Computer Science Colloquium and Seminar on Professional Issues.

Subject to the general restrictions on M.S. course work, the thesis option requires a minimum of 8 courses approved in a Plan of Study, 6 hours of EECS 899 Master’s Thesis or Report, EECS 802 Electrical Engineering and Computer Science Colloquium and Seminar on Professional Issues, and a general oral examination. For students completing the thesis option, EECS 891 Graduate Problems does not count toward the 8 courses required for the degree. Before thesis work begins, the student selects a thesis advisor who is a tenured/tenure track graduate faculty member of the department. A thesis proposal of research into a specific research question is to be submitted to and accepted by the student’s graduate committee at least one semester before completion of the program.

Subject to the general restrictions on M.S. course work, the nonthesis option requires a minimum of 9 courses approved in a Plan of Study, 3 hours of EECS 891 Graduate Problems, EECS 802 Electrical Engineering and Computer Science Colloquium and Seminar on Professional Issues, and a general oral examination. The nonthesis option requires the execution and completion of a substantial project whose topic and scope is agreed to between the student and advisor. A project is a creative endeavor such as designing and implementing hardware, software system or the integration of existing knowledge.

The general oral examination must be taken in the last semester. It is conducted by an examining committee consisting of the student’s advisor and at least 2 other Graduate Faculty members of the department selected by the student and advisor. The committee determines if the written thesis or project report, oral presentation of research, and general knowledge of the discipline meet the department’s standards.