Electrical Engineering
Master of Science

The Department of Electrical Engineering offers graduate programs leading to either a Master of Science (M.S.) or a Master of Engineering (M.Engr.) degree. The M.S. degree is offered with both the thesis and non-thesis options. The non-thesis M.S. degree requires completion of an independent study.

The Department of Electrical Engineering maintains strong research emphases in aerospace payload and sensor development, applied electromagnetics, biomedical signal and image processing, control systems and robotics, embedded systems, renewable energy systems, systems engineering, and wireless communications. Additionally, the department participates in the school-wide Ph.D. in Engineering program. The research programs, laboratory facilities, close student-faculty interaction, and strong mentoring and academic advising facilitate an environment of scholarly activity and prepare students for corporate and government positions in research and development.

The mission of the Department of Electrical Engineering Master of Science program is to promote critical thinking and creative skills based on the theory, principles, and techniques of electrical engineering. Graduates will be prepared for careers in private industry, government, and/or doctoral studies in electrical engineering or related fields.

Goal 1: Students will develop a comprehensive and in-depth understanding of electrical engineering through graduate-level coursework.
Goal 2: Students will develop critical thinking skills through research activities or focused project activities.
Goal 3: Students will develop skills to communicate the results of their research in an effective and professional manner.

Admission Requirements
The applicant must meet the School of Graduate Studies' current minimum general admission requirements as published in the graduate catalog.

1. Bachelor of Science degree in Electrical Engineering or closely related field. Students holding B.S. degrees in other fields, e.g., physics, mathematics, and computer science, may be admitted to Provisional or Qualified status until selected undergraduate requirements in electrical engineering have been satisfied.
2. An overall undergraduate GPA of at least 2.75 or a GPA of at least 3.00 for the last two years.
3. Applicants holding degrees from non-ABET accredited programs/universities must submit scores from the General Test of the Graduate Record Examination.
4. Satisfy the School of Graduate Studies' English Language Proficiency requirements as published in the graduate catalog.

Degree Requirements
Thesis Option:
1. A minimum of 30 semester credits, including credits granted for the thesis.
2. A minimum of 21 semester credits, including 6 thesis credits, must be in the major field of electrical engineering.
3. A minor field of study can be obtained by completing 9 semester credits from another department that offers a graduate program. A graduate faculty member from that department must serve on the thesis committee.
4. A cognate can be obtained by completing 9 semester credits from more than one department outside of electrical engineering, or from a single department that does not offer a graduate program.
5. At least one-half of the credits must be at or above the 500-level.
6. A maximum of one-fourth (usually 8-9 semester credits) of the credit hours required for the degree may be transferred from another institution.

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7. Completion of a research project and its presentation in a thesis.
8. An overall GPA of 3.00 or better in all coursework.

Non-Thesis Option:
1. Completion of at least 32 semester credits, including credits required for the major.
2. A minimum of 2 credits of Independent Study
3. At least one-half of the credits must be at or above the 500-level.
4. A maximum of one-fourth (usually 8-9 semester credits) of the credit hours required for the degree may be transferred from another institution.
5. Preparation of a written Independent Study report approved by the faculty advisor.
6. Comprehensive final examination.
7. An overall GPA of 3.00 or better in all coursework.

Faculty and Areas of Expertise

- Saleh Faruque, Ph.D., Wireless Communications, CDMA, Electronic Circuits, VLSI Design
- Reza Fazel-Rezai, Ph.D., Biomedical Signal and Image Processing
- Naima Kaabouch, Ph.D., Signal/Image Processing, Intelligent Systems, Sensing, Cognitive Radio
- Arthur R. Miles, Ph.D., Design of Electric Motors and Generators
- Sima Noghanian, Ph.D., Microwave Imaging, Multi-Element Antenna Wireless Systems, Antenna Theory and Design, Computational Electromagnetics
- Hossein Salehtfar, Ph.D., Power and Renewable Energy Systems, Power Electronics, Intelligent Systems (Neural Networks & Fuzzy Logic), and Electric Drives

Contact Information

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*The Department of Electrical Engineering also offers a Master of Engineering degree.*