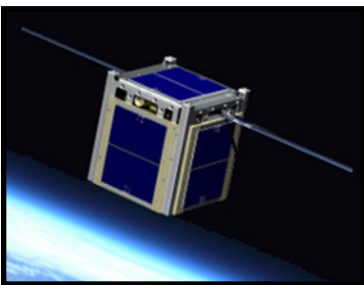


THE GRADUATE SCHOOL | MONTANA STATE UNIVERSITY

Electrical and Computer Engineering

DEGREES OFFERED

- Ph.D. in Engineering, Electrical & Computer Engineering
- M.S. in Electrical Engineering
- M. ENG. in Electrical Engineering



*Student Fabricated Cube-Sat:
Launched October 2011
Next Launch:
Radiation Tolerant Computing*

The Department of Electrical and Computer Engineering offers graduate study and research leading to the Master of Science degree in Electrical Engineering and the Doctor of Philosophy degree in Engineering. A coursework-only degree, the Master of Engineering, is also offered for professionals who wish to pursue graduate education without the need for a research thesis. Cutting-edge research areas include communications, signals and controls, microwave/millimeter-wave electronics, optics and photonics, and power and power electronics. We are leaders in cross-disciplinary research that links electrical engineering with physics, chemistry, and biology. These emerging areas include optical nanostructures, optical remote sensing, optical systems and sensors, micro-optical systems, micro-electro-mechanical systems (MEMS), radiation tolerant computing, bioinformatics and bioelectromagnetics, alternative energy, and ad-hoc communication networks.

Admission to our graduate program requires a bachelor's degree in electrical or computer engineering or a closely related field (for example, physics, computer science, mathematics, etc.). Students with bachelor's degrees in fields other than electrical and computer engineering (ECE) complete several additional courses to gain proficiency in key undergraduate ECE areas.

All applicants are required to submit scores from the General Test of the Graduate Record Examination (GRE) along with other application materials. A minimum quantitative GRE score of 153 is required, and most students in our program score significantly higher.

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MONTANA
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continued



PROGRAM REQUIREMENTS

Ph.D. students earn course credits and prepare a formal research dissertation. In progressing toward this degree, the student must pass a written qualifying examination, a comprehensive examination, and a final oral examination and defense of a dissertation based on the student's research.

Students may pursue the MS degree under either Plan A (thesis) or Plan B (professional paper). Plan A requires the completion of at least 20 credits of acceptable coursework and a 10-credit thesis. Under Plan B, a thesis is not required, but at least 27 credits of acceptable coursework and a 3-credit professional paper must be completed. Master's candidates must take a written qualifying examination as well as an oral comprehensive examination near the completion of their graduate program. The Master of Engineering requires 30 credits of acceptable coursework.

RESEARCH

Faculty and graduate students participate in research in many areas, including:

- Wireless and optical communications
- Intelligent and embedded computing
- Power, power electronics, and alternative energy
- Signals and controls
- Microwave/millimeter-wave electronics
- Micro-electro-mechanical systems (MEMS)
- Micro and nano optics
- Optical systems and sensing
- Biomedical applications

Research facilities in the department include: state-of-the-art electronics laboratories; optics laboratories with a variety of lasers, imagers, and electrooptical measurement tools; the Montana Microfabrication Facility with class 100, 1000, and 10,000 capabilities; a machine shop; a microwave and millimeter-wave electronics laboratory; a power and power electronics research laboratory; fuel cell characterization facilities; an audio and acoustics laboratory; and roof-port and roof-top facilities for optical remote sensing. Students have access to all the leading electronics, electromagnetic, and optical design and analysis software resources.

FINANCIAL ASSISTANCE

A number of fellowships, as well as teaching and research assistantships are available in the department for students who qualify. Fellowships are awarded based on merit by college and university graduate admissions committees. Research assistantships are generally funded by faculty research grants, so contacting individual faculty in your area of interest is recommended. Teaching assistantships are awarded based on the instructional needs of the Department and the skills and experience of the student. Note that students enrolled in the M. Eng. program are generally not considered for institutional support, and are expected to pay their own tuition and fees.

