WHY PURSUE A GRADUATE DEGREE IN EE?

✔ Be at the forefront of technology development and trends in Electrical Engineering

✔ Expand your skills and knowledge to advance into leadership roles in industry and government agencies

ADMISSIONS

Admission to the graduate degree program is competitive and based on an evaluation of academic performance, test scores, personal statement and references. Applications to a thesis-based degree are considered for funding by the department and faculty at the time of application. Funded students generally earn a monthly stipend with full tuition, fees and health insurance paid.

ACADEMICS

The Graduate Program in Electrical Engineering brings together faculty and graduate students with common interests in applying electrical engineering knowledge to develop technologically advanced designs for applications in the field of electrical engineering. The division offers a Master of Science degree, with thesis and non-thesis options, and a Doctor of Philosophy degree to prepare candidates for a wide-array of careers in industry, government and academia.

RESEARCH AREAS

Research within the division spans a broad scope of energy applications, power systems and microwave devices. Our four main research areas are:

ANTENNAS & WIRELESS COMMUNICATIONS
ENERGY SYSTEMS & POWER ELECTRONICS
INFORMATION & SYSTEMS SCIENCES

Students address real-world electrical engineering problems in research labs and centers, which creates a community for multidisciplinary learning, research and experimentation.

LEARN MORE

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Graduate Program Manager

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Electrical Engineering
Brown Hall Building
1610 Illinois Street
Golden, CO 80401
Our faculty and graduate students are engaged in multi-disciplinary research that often overlaps these areas as well as fields beyond the traditional borders of electrical engineering.

**ANTENNAS & WIRELESS COMMUNICATIONS**

The Electrical Engineering Department has an internationally recognized faculty (two IEEE and ACES fellows) in the antennas and wireless communications areas with diverse but closely related interests and expertise in computational electromagnetics, electromagnetic radiation and scattering, antennas and antenna arrays, microwave circuits, radar, remote sensing, electromagnetic measurements, visualization, and wireless communications.

**INFORMATION & SYSTEMS SCIENCES**

The Information and Systems Sciences (ISS) group is comprised of Professors Kathryn Johnson, Kevin Moore, Gongguo Tang, Tyrone Vincent, and Michael Wakin. These faculty share research and teaching interests related to control systems, signal and image processing, compressive sensing, and optimization. The ISS group undertakes fundamental research into the development, characterization and implementation of algorithms for processing and acting upon data sources, as well as research directed towards applications in energy systems, image analysis, communication systems, and robotics.

**ENERGY SYSTEMS AND POWER ELECTRONICS**

An interdisciplinary research area that encompasses the fields of control systems, signal and image processing, compressive sensing, and optimization. Fundamental research is directed toward the development, characterization, and implementation of algorithms for processing and acting upon data sources, as well as research directed toward applications in energy systems, image analysis, communication systems, and robotics.

**FACULTY SPOTLIGHT: KATHRYN JOHNSON**

Associate Professor Kathryn Johnson, who also holds a joint appointment as a scientist at the National Renewable Energy Laboratory (NREL), was one of six researchers who received a $3.56-million grant from the U.S. Department of Energy's Advanced Research Projects Agency-Energy (ARPA-E) to develop a low-cost-of-energy 50-MW turbine. The small-scale design will produce more than six times the power output of the largest current turbines, be longer than two football fields and have blades that resemble a palm tree. “Palm trees bend in the wind easier than a harder, stiffer tree,” said Johnson. “That means they are less likely to snap in high winds, so these blades will be able to bend out of the wind and therefore will put less stress on all the other turbine components. You will be able to put these turbines in places that have higher wind conditions.” In the next two years, Johnson will be working with graduate student Dana Martin to create computer simulations that will test the prototype turbine in various wind conditions. They will examine and manipulate how the turbine operates in response to each of these conditions and how much electricity it produces. Then they will help the team to design and build a prototype for field-testing.