DEPARTMENT OF ELECTRICAL ENGINEERING
ELECTRICAL.MINES.EDU

PROGRAM SCOPE
The Department of Electrical Engineering at Mines strives to produce future leaders who serve the profession, the global community and society. In addition to our ABET-accredited undergraduate curriculum, students attain technical expertise while completing course work and projects reflective of modern technology trends. Students consider the broader impacts of engineering solutions on society and human lives.

AREAS OF STUDY
Students have access to modern technology and advanced laboratories, while being supported by faculty advisors who clarify engineering principles and help select technical electives best aligned with career goals.

DEGREES
- Electrical Engineering
  Bachelor’s, Master’s and PhD
- Combined BS-MS

MINORS
- Electrical Engineering
- Computer Engineering

INTERNSHIP & CAREER OPPORTUNITIES
With a wide variety of career opportunities available, students and graduates are in charge of their future:
- Renewable energy
- Antennas and Aerospace
- National Government Organizations
- Law
- Intelligence and data managements
- Systems engineering and manufacturing
- Engineering consulting
- Utility industry
- Computer industry
- Microwave and RF industry

EMPHASIS AREAS

ENERGY SYSTEMS & POWER ELECTRONICS
This area encompasses a broad spectrum of electrical energy applications including investor-owned utilities, rural electric associations, manufacturing facilities, regulatory agencies, national laboratories, government agencies and consulting engineering firms.

INFORMATION SYSTEMS & SCIENCES
Interdisciplinary area that encompasses the fields of control systems, signal and image processing, compressive sensing and optimization.

ANTENNAS & WIRELESS COMMUNICATIONS
This area relates to the design of antennas, antenna arrays and microwave and RF devices for communications and sensing applications.

INTEGRATED CIRCUITS AND ELECTRONICS
This area involves analysis and design of analog and digital circuits to solve practical problems in communications, robotics and control.

82% PROFESSIONAL PLACEMENT RATE*
$69,242 AVERAGE STARTING SALARY*
19:1 STUDENT TO FACULTY RATIO

*This information is from the 2016-17 Mines Career Center Outcomes Survey
Dr. Atef Elsherbeni
Department Head, Professor
Scatter and diffraction of EM waves, antennas and microwave devices. EM education, RFID and sensor integrated systems, reflector and printed antennas, antenna arrays.

Dr. Ravel Ammerman
Emeritus Professor
Electrical safety, power system analysis, engineering education.

Dr. Abd Arkadan
Teaching Professor
Energy conversion, electric machines and drives, design optimization using computational electromagnetics and artificial intelligence.

Dr. Stephanie Claussen
Teaching Associate Professor
Optoelectronic device design and fabrication, optical material characterization, engineering pedagogy.

Dr. Christopher Coulston
Teaching Associate Professor
Embedded systems, digital design, signal processing, algorithms, computer architecture, control theory, Printed Circuit Board layout.

Dr. Vibhuti Dave
Teaching Professor
VLSI Design, high-speed computer arithmetic, digital design, engineering education.

Dr. Mohammed Hadi
Research Professor
Finite-difference time-domain method, large-scale and multi-scale electromagnetic simulations, GPU computing.

Dr. Randy Haupt
Professor
Genetic algorithms in electromagnetics adaptive antennas.

Dr. Kathryen Johnson
Associate Professor
Wind energy systems, control systems, engineering education.

Dr. Salman Mohagheghi
Associate Professor
Power system control and dynamics, renewable and distributed energy systems, situational awareness, utility automation.

Dr. Kevin Moore
College Dean, Professor
Iterative learning control, autonomous systems and robotics, cooperative control and consensus in dynamic networks, industrial and mechatronic control systems.

Dr. Payam Nayeri
Assistant Professor
RF design, communication circuits, microwave antenna engineering.

Dr. Jeff Schowalter
Teaching Professor
Biomedical instrumentation, engineering education, engineering design, analog electronics.

Dr. PK Sen
Professor
Energy sustainability and electricity, energy systems, electrical machines and renewable energy, safety, power engineering education.

Dr. Marcelo Simoes
Professor
Power electronics, energy conversion systems for renewable energy apps, and intelligent controls. NSF CAREER winner.

Dr. Gongguo Tang
Assistant Professor
Compressive sensing, radar sensing, sensor array and network, computer vision, electromagnetics, bioinformatics, social network and media.

Dr. Tyrone Vincent
Professor
Control systems, system identification, materials processing controls. NSF CAREER winner.

Dr. Michael Wakin
Ben L. Fryrear, Associate Professor
Signal image processing, compressive sensing. NSF CAREER winner.