The Mines mechanical engineering graduate program prepares students to develop novel computational and experimental solutions to a wide array of multidisciplinary technical engineering challenges. This program puts students at the forefront of technology development with research opportunities that include biomechanics; robotics and automation; solid mechanics, materials, and manufacturing; and thermal-fluid systems. Students learn in a multidisciplinary environment that expands their skills and knowledge of opportunities in R&D and technical leadership as they prepare to find solutions to the world’s biggest challenges.

DEGREE OPTIONS

- **Doctor of Philosophy**: 72 credit hours, comprised of at least 36 credit hours of coursework and 30 credit hours of thesis research. Students must pass the qualifying exam and successfully defend a thesis.

- **Master of Science (thesis based)**: 30 credit hours, comprised of 24 credits of coursework with 6 research credits. Students must write and orally defend a thesis.

- **Master of Science (non-thesis)**: 30 credit hours of coursework with flexible program plan of study.
RESEARCH AREAS

Research within the department spans four broad divisions of activity that stem from core fields of mechanical engineering. Research is stimulated by the department’s strong connections with other Mines departments, domestic and international institutions, industry partners and federal labs.

Biomechanics focuses on the application of engineering principles to the musculoskeletal system and other connective tissues.

Solid mechanics, materials and manufacturing develops novel computational and experimental solutions for problems in the mechanical behavior of advanced materials.

Robotics and automation merges research from multiple areas of science and engineering.

Thermal-fluid systems incorporates a wide array of multidisciplinary applications, such as advanced energy conversion and storage, multiphase fluid flows, materials processing, combustion, alternative fuels and renewable energy.

ADMISSION REQUIREMENTS

- A bachelor’s degree in computer science, a physical science or mathematics with a grade-point average of 3.0 or better on a 4.0 scale.
- Graduate Record Examination (GRE) with quantitative reasoning section score of 160 or higher. GRE is not required for applicants from a Mines engineering program.
- For international applicants or applicants whose native language is not English, a TOEFL of 79 or higher is required.

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