The Mines materials science graduate program prepares students to tackle the world’s problems related to matter and its applications to various areas of science and engineering. Mines materials science students design, fabricate, characterize, and measure materials from the atomic to the macro scale and use their understanding of structure-processing-property relationships to develop new and engineer existing materials to enable advances across all disciplines. Graduates of this unique, multidisciplinary program are highly sought after by industry, national laboratories and academia.

PROGRAM STRUCTURE

- **Doctor of Philosophy**: 72 credit hours, comprised of 24 credit hours of coursework and 48 credit hours of research. Doctoral students must pass the qualifying exam, complete and successfully defend a thesis.

- **Master of Science (thesis based)**: 30 credit hours, including 18 credit hours of coursework and 12 credit hours of research, complete and defend a thesis.

- **Master of Science (non-thesis)**: 30 credit hours, including 24 credit hours of courses and 6 credit hours of case study or designated design courses.
RESEARCH AREAS

Students and faculty engage in the design, study and manipulation of materials properties using advanced characterization and modeling techniques, complemented by extensive materials processing and testing capabilities. The materials-focused research centers at Mines spearhead campus-wide efforts on a variety of topics:

- Physical metallurgy
- Advanced ceramics
- Polymers and molecular materials
- Energy materials
- Biomaterials
- Additive manufacturing

CORE COURSES

- Materials Thermodynamics
- Advanced Materials Kinetics and Transport
- Bonding, Structure and Crystallography

PROGRAM ADMISSION REQUIREMENTS

- Bachelor’s degree in engineering, computer science, physical sciences or mathematics with a grade-point average (GPA) of 3.0 or better on a 4.0 scale.
- Graduate Record Examination (GRE) is required.

ACCEPTING APPLICATIONS

TO LEARN MORE, VISIT: gradprograms.mines.edu/am or contact materials-info@mines.edu