The Mines mining engineering graduate program features two degree tracks: mining engineering and earth resources development engineering (ERDE).

The mining engineering track is predominantly for mining engineers, with graduate work and research focused around mine planning and development, mine design, rock mechanics, operations research, environment and sustainability considerations, mine mechanization, mine evaluation, finance and management, mine ventilation, safety and health.

The ERDE track welcomes applicants with undergraduate degrees in any engineering discipline. Study and research options are similar to those in mining engineering with an emphasis on stewardship of the earth’s mineral resources.

DEGREE OPTIONS

- **Doctor of Philosophy**: 72 credit hours, comprised of 48 credit hours of coursework and 24 credit hours of research. Students must also complete written and oral qualifying exams, present a thesis proposal and defend their thesis before the thesis committee.

- **Master of Science (thesis based)**: 30 credit hours, comprised of at least 21 credit hours of coursework and 9 credit hours of research.

- **Master of Science (non-thesis)**: 30 credit hours of coursework, comprised of a minimum of 21 credit hours from within the Mining Engineering Department.
SUBJECT AREAS

• Geomechanics, rock mechanics and stability of underground and surface excavations
• Computerized mine design and related applications
• Advanced integrated mining systems incorporating mine mechanization and mechanical systems
• Underground excavation, tunneling and construction
• Construction and project management
• Rock fragmentation
• Site characterization and geotechnical investigations, modeling and design in geoengineering
• Mineral processing, comminution and separation technology
• Bulk material handling
• Mine ventilation
• Mine safety and health
• Corporate social responsibility
• Artisanal and small-scale mining

PROGRAM ADMISSION REQUIREMENTS

• A bachelor’s degree in some discipline of engineering from an ABET-accredited institution.
• Graduate Record Examination (GRE) is required. Applicants who have graduated from Mines within the past five years are not required to submit GRE scores.
• For international applicants or applicants whose native language is not English, a TOEFL score of 79 or higher (or 550 for the paper-based test, 213 for the computer-based test). In lieu of a TOEFL score, an IELTS score of 6.5 or higher will be accepted.

ACCEPTING APPLICATIONS

TO LEARN MORE, VISIT:
gradprograms.mines.edu/mn or contact mining@mines.edu