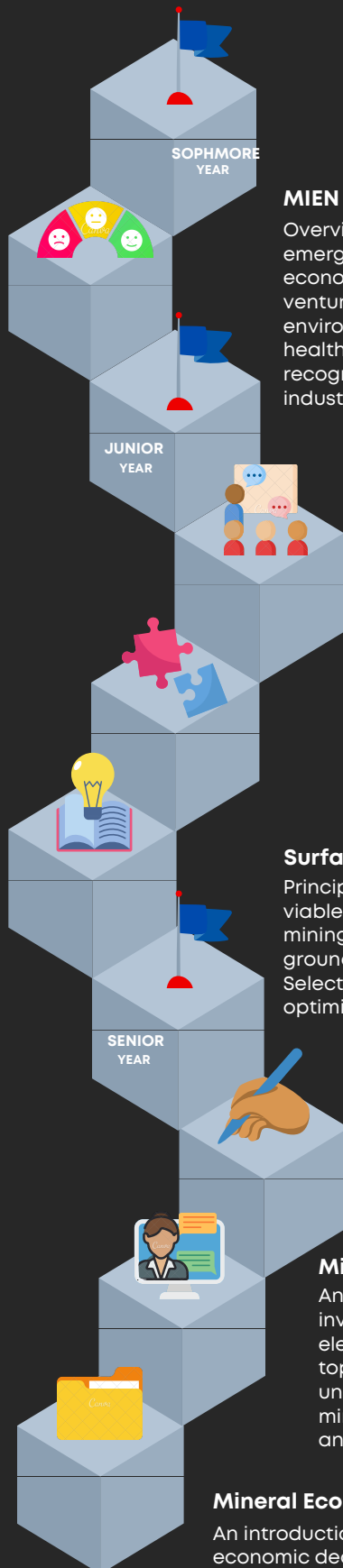
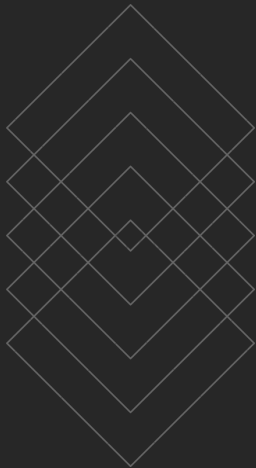
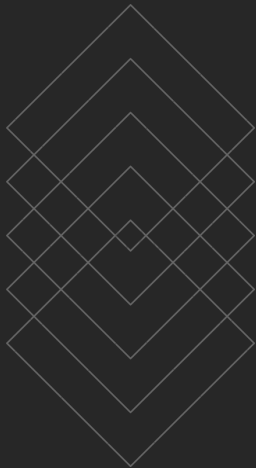


Mining Engineering Minor

Check the website
or Scan the QR
code for more info!



MIEN Introduction to Mining

Overview of current surface and underground mining practices, new and emerging technology, mining terminology, health and safety, and mining economics. The concept of sustainable development as it relates to a minerals venture is introduced, and the interrelationships between mining, the environment, societal needs, and governance are discussed. A detailed study of health and safety principles, practices, analyses, regulations, risks and hazards recognition, mitigation and control, and disaster prevention in the mining industry.

*Prerequisites: Introduction to Engineering
Credits: 3*

Geology for Engineering & Lab

Provide engineers from multiple disciplines with the background of a classic Physical Geology course and how it applies to engineering. Includes mineral identification. Laboratories emphasize the recognition, description and engineering evaluation of ores and their hosts. Field trip required.

*Prerequisites: MIEN Intro to Mining
Credits: 3*

Rock Mechanics & Lab

Applications of the fundamental principles of mechanics to engineering problems of equilibrium, strength, and stiffness of rock materials. Review of in-situ stresses, laboratory and field instrumentation, rock, and rock mass properties. Introduction to rock fragmentation and ground control; pillar design, roof span design, rock reinforcement, surface subsidence, slope stability, and violent failure. Field trip required.

*Prerequisites: MATH 1910/1920/2110, MIEN Intro to Mining Engineering,
MIEN Geology, Mechanics of Materials ENGR 2130
Credits: 3*

Surface and Underground Methods

Principles of planning, designing, constructing, and operating economically viable surface or underground mines. Cost-effective mining methods: placer mining, strip mining, open pit mining, quarrying, and blasting. Fundamentals of ground control, dewatering techniques, and mine ventilation will be discussed. Selection of equipment for surface and underground mining operations and optimization of mine performance will be considered.

*Prerequisites: MIEN Intro to Mining Engineering,
MIEN Geology, MIEN Rock Mechanics
Credits: 3*

Mine Ventilation

Introduction of subsurface ventilation systems including ventilating sections, blowing and exhaust, and a face setup. Fundamentals of thermodynamics, impeller theory, fan laws, and ventilation (fan) economics will be discussed.

*Prerequisites: Fluids Mechanics CVEN 3100
Credits: 3*

Mineral Processing and Resource Recovery

An introductory course in mineral processing highlighting unit operations involved, including comminution, sizing, froth flotation, gravity separation, electrostatic separation, magnetic separation, and flocculation. Other topics discussed include the remediation of contaminant effluents and the unit operations associated with recycling post-consumer materials using mineral processing techniques, and an overview of reclamation techniques and impoundments /tailings dam construction.

*Prerequisites: MIEN Intro to Mining Engineering,
CHEM 1110/1111
Credits: 3*

Mineral Economics & Feasibility

An introduction to the concepts of the time value of money and the application of economic decision criteria to mineral project evaluation, investment situations, commodity forecasting, macroeconomic impacts and risks, and projects.

*Prerequisites: MIEN Intro to Mining Engineering
Credits: 3*