UNSW Engineering

Bachelor of Engineering (Honours) (Mining Engineering)

What do mining engineers do?

Mining Engineering is the science of extracting and processing mineral resources from the earth in a safe and sustainable way. Mining engineers focus on sustainable recovery, planning, processing, marketing and financial management of mineral resources. Fundamental engineering principles and their application to complex mining systems play a large role in this career. Modern mining engineers rely on technical skills in areas such as geology and mineral economics, geomechanics, mine design & planning, automation, data analytics, technology integration and protection of our environments to achieve safe and productive sustainable mining practices.

What will your study involve?

This degree provides a comprehensive understanding of how complex mining systems work to meet the global need for minerals. It gives students a solid foundation in fundamental engineering principles and the essential elements of mining. This includes geology, geomechanics, mine planning and design, financial evaluation, safety and risk assessment, mineral processing, and data analytics.

UNSW Minerals and Energy Resources Engineering

- We're UNSW's top ranked subject - 4th globally for Mineral & Mining Engineering (QS Subject Rankings 2023)
- We have strong relationships with Australia's minerals, oil and gas industry through sponsored scholarships and work experience programs.
- UNSW is at the forefront of mining education & research including space resources engineering, low emission technologies, CO2 storage, with 73 years of research, development, and education experience.
- Study in our controlled mine environment, geomechanics, mineral processing, ventilation, and petrophysics laboratories, VR/AR simulators, X-ray CT facility, and more.

Program details

Lowest Selection Rank (2023): 90

Duration: Four-year embedded honours degree

Study areas: Geotechnical Engineering, Mine Design and Planning, Mining Engineering, Mining Management and Sustainability, Mining Systems, Mining Technologies, Rock Breakage

Assumed knowledge: HSC level Mathematics Extension 1, Physics

Portfolio Entry: UNSW offers the Faculty of Engineering Admission Scheme (FEAS) which is a pathway for students interested in studying undergraduate engineering to support their academic results, find out more at unsw.to/feas

Accreditation

Your Bachelor of Engineering (Honours) degree is recognised globally, is accredited with Engineers Australia, and is also acknowledged by the Washington Accord, which lets you work in over 20 countries across the globe upon graduation.

Career options

Mining engineering graduates have many career options available to them. You can decide if you want to work in the field or in the office. Graduates enjoy successful careers in mining companies at the operational or corporate level, service supply companies, in quarrying and tunnelling industries, consultancies, investment firms and government.

Student Testimonials

"I chose Mining Engineering because I love the outdoors, travelling and being active. Here, I can combine my love of the outdoors with problem-solving, innovation, creativity and my interest in geology. I'd like to share my passion for mining with people from all walks of life."

Annette Au, Mining Engineering

Example study plan

	TERM 1			TERM 2			TERM 3		
YEAR 1	Introduction to Engineering Design & Innovation	Mathematics 1A	Elective	Computing for Engineers	Mathematics 1B	Physics 1A	Engineering Mechanics	Investigating Earth and its' Evolution	
YEAR 2	Fluid and Particle Mechanics	Mechanic of Solids	Engineering Mathematics 2E	Mineral Resource Geology & Geophysics	Numerical Method & Statistics	Elective	Mineral Processing	Engineering Design and Professional Practice	
YEAR 3	Resource Estimation	Mining Geomechanics	Mining Systems	Socio-Enviromental Aspects of Mining	Mine Planning	Disciplinary Elective*	Rock Breakage	Mine Ventilation	
YEAR 4	Thesis A	Mine Geotechnical Engineering	General Education	Thesis B	Mine Management	Mine Design & Feasibility Project	Thesis C	Disciplinary Elective*	General Education

You'll be required to complete 60 days of Industrial Training throughout your degree.
*Elective courses such as Engineering Vertically Integrated Project (ENGG2600, ENGG3600, ENG4600), Data Analytics and Automated Technologies for Minerals and Energy Resources (MERE8810), Technology Management and Innovation in Mining (MINE8130), Sustainable Tailings Management (MINE8950) etc.

This is a sample degree outline only and may be subject to change. Please refer to the UNSW Handbook for further information and relevant course codes.