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 1st in Australia, and 2nd globally for Mineral & Mining Engineering (QS Subject Rankings, 2025)
- 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, CO^2 storage and geothermal energy, 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, drilling simulator, X-ray CT facility, and more.

Program details

Lowest Selection Rank (2025): 92

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 'ngineering #dmission Scheme F'#S 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 Testimonial

"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

Year 1	
Term 1	**DESN1000** Engineering Design and Innovation
	PHYS1121 Physics 1A OR **PHYS1131** Higher Physics 1A
	MATH1131 Mathematics 1A OR **MATH1141** Higher Mathematics 1A
Term 2	**ENGG1811** Computing for Engineers
	MATH1231 Mathematics 1B OR **MATH1241** Higher Mathematics 1B
	ENGG1300 Engineering Mechanics
Term 3	**GEOS1111** Investigating Earth and Its Evolution
	Free Elective Course*

Year 2	
Term 1	**ENGG2400** Mechanics of Solids 1
	CEIC2001 Fluid and Particle Mechanics
	MATH2019 Engineering Mathematics 2E OR **MATH2018** Engineering Mathematics 2D
Term 2	**MERE2810** Mineral Resource Geology & Geophysics
	MINE2820 Minerals Processing
	DESN2000 Engineering Design and Professional Practice
Term 3	**MATH2089** Numerical Methods and Statistics
	Free Elective Course

Year 3	
Term 1	**MINE3220** Resource Estimation
	MINE3310 Mining Geomechanics
	MINE3430 Mining Systems
Term 2	**MINE3230** Mine Planning
	MINE3910 Socio-Environmental Aspects of Mining
	General Education Course
Term 3	**MINE3510** Mine Ventilation
	MINE3630 Rock Breakage

Year 4	
Term 1	**MERE4951** (4 UoC) Research Thesis A
	MINE4250 Hardrock Mine Design and Feasibility Project
	MINE4310 Mine Geotechnical Engineering
Term 2	**MERE4952** (4 UoC) Research Thesis B
	MINE4710 Mine Management
	Discipline Elective Course
Term 3	**MERE4953** (4 UoC) Research Thesis C
	Discipline Elective Course
	General Education Course

NOTES

You'll be required to complete 60 days of Industrial Training throughout your degree.

This degree example is indicative only and subject to change at any time without prior notice.
For the latest degree information visit the relevant UNSW Handbook page at www.handbook.unsw.edu.au.

UNSW's new 'flex-semester' calendar is scheduled to start in 2028.
For more information see https://www.unsw.edu.au/academic-calendar-project.

Visit the Degree Finder page here!