



UNSW Engineering

# Bachelor of Engineering (Honours) (Geoenergy and Geostorage Engineering)

## What do geoenergy and geostorage engineers do?

Drive progress towards a sustainable future through clean energy resource solutions. Geoenergy and Geostorage Engineering is an innovative field that focuses on sustainable practices in the extraction and management of subsurface resources such as carbon dioxide storage, hydrogen storage, and heat and energy extraction from the earth.

Be equipped for tomorrow's global energy landscape, this new degree reflects the evolving needs of the energy sector, building on the foundations of petroleum engineering by integrating principles of reservoir engineering, geomechanics and environmental science.

## What will your study involve?

This degree provides a comprehensive understanding of heat and energy extraction from the earth. You will build on the foundations of petroleum engineering and learn about reservoir engineering, geomechanics, and environmental sciences. This degree will equip you to work in the mining and energy sectors.

## UNSW Minerals and Energy Resources Engineering

- We're UNSW's top ranked subject - 2nd in Australia and 3rd globally for Mineral and Mining Engineering (QS Subject Rankings 2024).
- Geoenergy and Geostorage builds on the foundations of Petroleum Engineering for which UNSW is ranked 2nd in Australia and 9th in the world. (QS Subject Rankings 2024).
- 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 and research including space resources engineering, low emission technologies, CO2 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

**Duration:** Four-year embedded honours degree

**Study areas:** Energy Resource Geology & Geophysics, Geomechanics, Formation Characterisation, Subsurface Data Science, Drilling Engineering, Reservoir Engineering, Decommissioning & Sustainability, Hydrogen Geostorage, CO2 Sequestration, Geothermal Engineering

**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](https://unsw.to/feas)

## Accreditation

Accreditation by Engineers Australia will be sought for this new degree

## Career options

Graduates will contribute to a net-zero future by addressing critical challenges related to subsurface energy extraction.

You can work in areas such as petroleum engineering, minerals and energy resources exploration, drilling, sustainability and environmental consulting, project management and management consulting in the mining or energy sectors.

*"Geoenergy and geostorage is a key part of the transition to a cleaner future. As home to the leading School of Minerals & Energy Resources, UNSW is well placed to prepare graduates for this vital and emerging field."*

**Professor Chistoph Arns, Geoenergy & Geostorage Discipline Lead**



### Example study plan

	TERM 1			TERM 2			TERM 3		
YEAR 1	Engineering Design and Innovation	Higher Physics 1A	Mathematics 1A or Higher Mathematics 1A	Mathematics 1B or Higher Mathematics 1B	Engineering Chemistry 1A	Elective	Investigating Earth and its Evolution	Computing for Engineers	
YEAR 2	Fluid Mechanics for Engineers	Numerical Methods and Statistics	Engineering Design and Professional Practice	Mechanics of Solids 1	Mineral Resource Geology & Geophysics	Engineering Mathematics 2E	Thermodynamics	Elective	
YEAR 3	Mining Geomechanics	Formation Evaluation	Elective	Drilling and Completion Engineering	Reservoir Engineering	Reservoir Characterisation and Data Science	Transient Flow Analysis	Resources Project Economics	
YEAR 4	Research Thesis A	Decommissioning and Sustainability	Geostorage Modelling	Research Thesis B	Geostorage Project	General Education Course	Research Thesis C	Elective	General Education Course

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

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.