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 geostorage and energy sectors.

UNSW Minerals and Energy Resources Engineering

- We're 1st in Australia, and 2nd globally and for Mineral and Mining Engineering (QS World Ranking by Subject, 2025).
- Geoenergy and Geostorage builds on the foundations of Petroleum Engineering for which UNSW is ranked 2nd in Australia and 9th in the world. (QS World Ranking by Subject, 2024).
- We have strong relationships with Australia's minerals, Geoenergy & Geostorage 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, CO_2 storage and geothermal energy, with 73 years of research, development, and education experience.
- Study in our geostorage, geomechanics, petrophysics, controlled mine environment, and mineral processing, ventilation laboratories, VR/AR simulators, drilling simulator, X-ray CT facility, and more

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Program details

Duration: Four-year embedded honours degree

Study areas: Energy Resource Geology & Geophysics, Geomechanics, Formation Characterisation, Suburface Data Science, Drilling Engineering, Reservoir Engineering, Decommissioning & Sustainability, Hydrogen Geostorage, CO_2 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

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 reservoir engineering, drilling, sustainability and environmental consulting, petroleum engineering, minerals and energy resources exploration, project management and management consulting in the energy or mining 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

Year 1	
Term 1	**CHEM1811** Engineering Chemistry 1A
	PHYS1131 Higher Physics 1A OR **PHYS1121** Physics 1A
	MATH1131 Mathematics 1A OR **MATH1141** Higher Mathematics 1A
Term 2	**MATH1231** Mathematics 1B OR **MATH1241** Higher Mathematics 1B
	Free Elective^
Term 3	**GEOS1111** Investigating Earth and Its Evolution
	ENGG1811 Computing for Engineers
	DESN1000 Engineering Design and Innovation

Year 2	
Term 1	**ENGG2500** Fluid Mechanics for Engineers
	MATH2089 Numerical Methods and Statistics
Term 2	**ENGG2400** Mechanics of solids 1
	MERE2810 Mineral Resource Geology & Geophysics
	Free Elective*
Term 3	**MMAN2700** Thermodynamics
	DESN2000 Engineering Design and Professional Practice
	MATH2018 Engineering Mathematics 2D

Year 3	
Term 1	**MINE3310** Mining Geomechanics
	MERE3001 Formation Evaluation
	Discipline Elective
Term 2	**MERE3002** Drilling and Completion Engineering
	MERE3003 Reservoir Engineering
	MERE5004 Reservoir Characterisation and Data Science
Term 3	**MERE5003** Transient Flow Analysis
	MERE5005 Resources Project Economics

Year 4	
Term 1	**MERE4951** (4 UoC) Research Thesis A
	MERE5006 Decommissioning and Sustainability
	MERE5007 Geostorage Modelling
Term 2	**MERE4952** (4 UoC) Research Thesis B
	MERE5008 Geostorage Project
	General Education Course
Term 3	**MERE4953** (4 UoC) Research Thesis C
	Discipline Elective (Recommended PTRL5119)
	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!