UNSW Engineering

Bachelor of Engineering (Honours) (Mechanical Engineering)

What do mechanical engineers do?

Mechanical engineers design and develop ground-breaking mechanical systems. They employ critical thinking, creative problem-thinking, and multi-disciplinary approach to engineer these designs into reality through advanced manufacturing techniques. They create transforming products that span a wide spectrum, including life-saving medical implants, cutting-edge transportation solutions, advanced energy storage solutions, sustainable development practices. With their advanced skills and expertise in modern technologies, mechanical engineers shape our world and drive societal improvement.

What will your study involve?

You'll learn how to design and manage the construction, operation and maintenance of advanced devices used in many industries. You'll study specialised mechanical engineering courses including fluid dynamics, mechanics of solids, thermodynamics and heat transfer.

You'll bring virtual products to life with computer aided design and simulation. In your last year, you'll bring together the engineering principles you've learned and apply these to solve problems through the development of a specific design, process or the investigation of a hypothesis.

UNSW Mechanical Engineering

- 1st in Australia and 49th globally for Mechanical, Aeronautical & Manufacturing Engineering (QS Subject Rankings 2023)
- Learn and explore in best-in-class teaching labs and cutting-edge facilities which include a flight simulator, mechatronics research space, a refrigeration and energy storage lab, laser labs, machines for tensile and compression testing, an aerodynamics laboratory with four wind tunnels and mechanical workshop
- UNSW has partnerships with industry leaders such as Australia Advanced Aerospace Technology, , Hyundai NGV, The Boeing Company and Xinjiang Goldwind Science & Technology

Program details

Lowest Selection Rank (2023): 90

Duration: Four-year embedded honours degree

Study areas: Motion and Energy, Thermodynamics, Fluid Mechanics, Solid Mechanics, Computer Aided Design and Manufacture (CAD/CAM), Materials Science, Engines and Power, Noise and Vibration

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

Mechanical Engineering underpins modern machines and devices. You'll work to design and optimise machines that are smaller and more powerful than their predecessors. There's a high demand for mechanical engineers across industries including power generation, transport, construction, mining, manufacturing and medical devices.

Student Testimonials

"Coming to UNSW Engineering was the best decision of my life. I have been able to experience so many amazing things and it has opened up so many ways for me to have a positive impact on the world. Where else would I have got to build, from scratch a working bionic hand with a team of first-year students?"

Tsing Lee, Mechanical Engineering

Example study plan

	TERM 1			TERM 2			TERM 3		
YEAR 1	Engineering Design and Innovation	Physics 1A	Mathematics 1A	Mathematics 1B	Design and Manufacturing		Engineering Mechanics	Electrical Circuit Fundamentals	Programming Fundamentals
YEAR 2	Mathematics 2D (2E)		Thermodynamics	Engineering Mechanics 2	Mechanics of Solids 1	Elective*	Engineering Design and Professional Practice	Fluid Mechanics for Engineers	Numerical Methods and Statistics
YEAR 3	Mechanical Design 1	Mechanics of Solids 2	Elective	Advanced Thermofluids	Strategic Design Innovation	Linear Systems and Control	General Education Course	Elective	
YEAR 4	Elective	Elective	Research Thesis A	Mechanical Design 2	Elective	Research Thesis B	Elective	Elective	Research Thesis C

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

* MATS1110

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.