



UNSW Engineering

Bachelor of Engineering (Honours) (Nuclear Engineering)

What do nuclear engineers do?

Nuclear engineers play a vital role in designing, developing, researching, and overseeing nuclear technologies, with a strong focus on safety, efficiency, and responsible application. As a graduate, you'll emerge with a broad and adaptable skill set that covers technical expertise, human factors, and policy considerations—skills that are not only crucial in the nuclear field but also highly sought after across diverse industries.

What will your study involve?

Our Nuclear Engineering degree focuses on the design and application of systems using nuclear and radiating processes across various disciplines. You'll learn about engineering design, atomic physics, reactor operations, and nuclear safety. Through the Challeng Program, you can participate in projects like AtomCraft to design, build and run the worlds' first student-led fusion energy reactor.

You'll apply principles of high-performance computing, radiation science and materials chemistry to solve complex problems throughout your degree and establish a diverse skill set to boost your engineering career and advance society in tangible and exclusive ways.

UNSW Mechanical & Manufacturing Engineering

- 1st in Australia for Mechanical, Aeronautical & Manufacturing Engineering (QS Subject Rankings 2024)
- UNSW is the only Australian university to offer a dedicated Bachelor of Engineering (Honours) degree in Nuclear Engineering
- 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 ANSTO, Australia Advanced Aerospace Technology, Hyundai NGV, The Boeing Company and Xinjiang Goldwind Science & Technology.

Program details

Lowest Selection Rank (2025): 92

Duration: Four-year embedded honours degree

Study areas: Atomic Energy, Thermohydraulics, Nuclear Engineering Design, Nuclear Materials Chemistry, Nuclear Safety, Reactor Engineering and Control.

Assumed knowledge:

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

Nuclear Engineering is currently seeking accreditation with Engineers Australia, which will have you Bachelor of Engineering (Honours) degree be recognised globally with acknowledgment by the Washington Accord, which lets you work in over 20 countries across the globe upon graduation..

Career options

Nuclear engineering design, develop, research and manage nuclear technologies while ensuring efficiency, safety and responsible use. You'll graduate with a versatile skill set spanning technical, human and policy issues, skills that are not only essential in nuclear engineering.

but also highly valued across a range of sectors. These include fields such as power generation, medicine and health, aerospace, advanced manufacturing, government and policy, defence and mining.

Student Testimonial

"Through studying nuclear engineering at UNSW, I've gained not just theoretical knowledge but the practical skills to apply it in real-world settings. These experiences have opened doors to exciting career opportunities around the world. As an international student, I can truly say it's been one of the most impactful decisions I've ever made."

– Eskil Tobias Aune
Nuclear Engineering Minor

Example Study Plan



Year 1		Year 2		Year 3		Year 4	
Term 1	DESN1000 Engineering Design and Innovation	Term 1	ATOM2000 Introduction to Atomic Energy	Term 1	ATOM3001 Nuclear Reactor Coolants	Term 1	Research Thesis A
	PHYS1121 Physics 1A <u>OR</u> PHYS1131 Higher Physics 1A		MATH2019 Engineering Mathematics 2E		ATOM3002 Neutronics		ENGG9744 Nuclear Safety, Security and Safeguards
	MATH1131 Mathematics 1A <u>OR</u> MATH1141 Higher Mathematics 1A		MATH2089 Numerical Methods and Statistics		Elective		General Education
Term 2	MATH1231 Mathematics 1B <u>OR</u> MATH1241 Higher Mathematics 1B	Term 2	PHYS2117 Introduction to Nuclear Physics	Term 2	ATOM3003 Nuclear Reactor Degradation and Lifecycle	Term 2	Research Thesis B
	MMAN1130 Design and Manufacturing		Elective		ATOM4001 Reactor Engineering and Control		ATOM4100 Nuclear Engineering Design
	Elective		General Education		DESN3000 Strategic Design Innovation		Elective
Term 3	MATS1110 Introduction to Materials for Engineering Applications	Term 3	MMAN2700 Thermodynamics	Industrial Placement		Term 3	Research Thesis C
	ENGG1811 Computing for Engineers		ENGG2500 Fluid Mechanics for Engineers				ARTS3100 Science, Technology and Responsibility: Ethics and the Nuclear Age
	Elective		DESN2000 Engineering Design and professional Practice				Elective

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>.



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degree
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