



UNSW Engineering

# Bachelor of Engineering (Honours) (Mechanical and Manufacturing Engineering)

## What do mechanical and manufacturing engineers do?

As a manufacturing engineer, you'll apply scientific and engineering knowledge to the development, manufacture and distribution of all types of products, including the machines that create them. Working as a manufacturing engineer involves supply chain management, logistics and distribution, quality management, and environmental and life-cycle management of products.

## What will your study involve?

In this degree, you'll learn how to transform a design from a conceptual stage into a prototype and then into a commercially viable product. You'll integrate the knowledge gained from this degree into a framework and process that allows you to implement your designs, solutions and ideas in a commercial environment.

The final year courses are based on world-wide industry best practice

in manufacturing and industrial engineering. You'll study across the following subjects like Strategy and management, Operations and supply chains, Analysis and decision-making, Design of product-process systems, Technology and automation.

## UNSW Mechanical & Manufacturing Engineering

- 1st in Australia for Mechanical, Aeronautical & Manufacturing Engineering (QS Subject Rankings 2024)
- 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 (2024):** 90

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

**Study areas:** Computer Aided Design and Manufacturing (CAD/CAM), Fluid Dynamics, Materials Science, Mechanics of Solids, Process Technology and Automation, Process Modelling and Simulation, Reliability and Maintenance Engineering, Thermodynamics

**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

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

Our graduates work in a wide variety of manufacturing industries, including

automotive, defence, aerospace and any industry that creates new products out of raw materials. If you're a young entrepreneur, you may even choose to create a start-up and introduce brand new products to the world.

## Student Testimonials

"I initially chose a flexible first year, but soon my interests in design and production led me to this degree. The projects I've experienced have been fantastic! From drink coolers to bakeries to full-scale beer production facilities, conceptualising these processes has been my favourite academic experience thus far."

**Zac Chin, Mechanical and Manufacturing**



### Example study plan

	TERM 1			TERM 2			TERM 3		
YEAR 1	Introduction to Engineering Design & Innovation	Electives	Mathematics 1A	Mathematics 1B	Physics 1A	Design and Manufacturing	Engineering Mechanics	Elective	
YEAR 2	Computing for Engineers	Engineering Mathematics 2E	Thermodynamics	Mechanics of Solids 1	Engineering Mechanics 2		Engineering Design and Professional Practice	Electrical & Telecommunications Engineering	Fluid Mechanics
YEAR 3	Design and Analysis of Product-Process Systems	Numerical Methods & Statistics	Mechanical Design 1	Technology & Automation	Strategic Design Innovation	Linear Systems and Control	General Education	General Education	
YEAR 4	Design of Intelligent Manufacturing Systems	Reliability and Maintenance Engineering	Thesis A	Process Modelling & Simulation	Elective	Thesis B	Engineering Management	Elective	Thesis C

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.