UNSW Engineering

Bachelor of Engineering (Honours) (Mechatronic Engineering)

What do mechatronic engineers do?

Mechatronics and robotics engineers design automation processes and create autonomous systems, such as smart machines, self-operating drones and robots. They will integrate sensors and actuators with intelligent software, creating intelligent machines with decision-making capabilities.

What will your study involve?

In this degree you'll learn about the conception, design, construction, maintenance, integration and repair of smart machines. These machines include everything from precision medical robots to autonomous vehicles to massive turbines powering our lives. You'll focus on the application of engineering science, development and management in these fields.

You'll get hands-on experience with opportunities to apply the skills learned in your degree.

UNSW Mechanical & Manufacturing 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: Computing, Control Systems, Electronics, Mechanical Design, Microprocessors, Robotics, Autonomous Systems

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

Mechatronic engineers work in one of the many industries where automation is in demand, such as manufacturing, automotive, mining, cargo handling and agriculture. They may also work in companies that design and manufacture consumer devices, such as mobile phones, game consoles and biomedical devices.

Student Testimonials

"I believe robotics and control systems will be in every part of our future. Whether it's autonomous vacuum cleaners, quadcopters or robot soccer, I want to be a part of these amazing robotic technologies. The atmosphere at UNSW is energetic. There's always an aura of students trying to build the next big thing."

Hayden Smith, Mechatronic 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	Programming Fundamentals	Engineering Mechanics		Electrical Circuit 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	Linear Systems and Control	Elective	Elective	Robot Design	Strategic Design Innovation	General Education Course	Computing Applications in Mechatronics Systems	Elective	
YEAR 4	Modelling and Control of Mechatronic Systems	Advanced Autonomous Systems	Research Thesis A	Robotics	Elective	Research Thesis B	General Education Course	Elective	Research 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.