



UNSW Engineering

# Bachelor of Engineering (Honours)/ Master of Biomedical Engineering

## What do biomedical engineers do?

Biomedical Engineering uses engineering techniques and analysis to solve problems and create solutions in medicine and health. Biomedical Engineers develop solutions to improve the diagnosis, treatment and quality of life of people with life-threatening or debilitating diseases and conditions. This dual degree combines a four-year Bachelor of Engineering (Honours) and an 18-month Master of Biomedical Engineering into a single five-year full-time program. Biomedical Engineering courses are taken throughout the program.

## What will your study involve?

The Bachelor of Engineering (Honours) component of this dual degree provides a solid background in mathematics, natural sciences and computing. In the Master of Biomedical Engineering, we cover principles for the development of technologies and solutions in healthcare-related fields such as medical devices, biomaterials,

tissue engineering, neural engineering, biomechanics, bioinformatics, telehealth, biosignal processing, medical imaging and computational modelling. Our graduates are equipped with significant knowledge provided by their degree in engineering combined with high-level skills specific to Biomedical Engineering.

## Students benefit from:

- A high-quality, industry-relevant biomedical educational program which utilises world-class facilities and technologies and gives you access to our alumni community
- Being embedded in research teams performing ground-breaking research across many areas of Biomedical Engineering
- Research in the Tyree Foundation Institute of Health Engineering which brings together clinicians, technologists and industry to develop new medical technologies.

## Program details

**Lowest Selection Rank (2025):** 92.00

**Duration:** five-year embedded dual degree

**Study areas:** A Master of Biomedical Engineering can be combined with a Bachelor of Engineering (Honours) in the following disciplines: Bioinformatics Engineering, Chemical Engineering, Computer Engineering, Electrical Engineering, Materials Science, Mechanical Engineering, Robotics and Mechatronic Engineering, Software Engineering, Telecommunications

**Assumed knowledge:** Mathematics Extension 1, Physics, Chemistry

**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

Graduates can pursue career opportunities in the area of medical devices, pharmaceutical and biotechnology industries, hospitals, regulatory bodies, research institutions and tertiary education institutions. Plus, there are all the opportunities provided by the undergraduate degree.


# Example study plan

Sample program outline for the Bachelor of Engineering (Honours) in Robotics and Mechatronic Engineering/ Master of Biomedical Engineering.

	Year 1	Year 2	Year 3	Year 4	Year 5
Term 1	<b>DESN1000</b> Engineering Design and Innovation	<b>MATH2019</b> Engineering Math 2E <b>OR MATH2018</b> Engineering Math2D	<b>MTRN3210</b> Feedback Control Systems	<b>MTRN3020</b> Modelling and Control of Mechatronic Systems	<b>BIOM4951</b> Research Thesis A (4 UoC)
	<b>PHYS1121</b> Physics 1A <b>OR</b> <b>PHYS1131</b> Higher Physics 1A	<b>MATH2089</b> Numerical Methods and Statistics	<b>PHSL2121</b> Principles of Physiology A	<b>MTRN4010</b> Advanced Autonomous Systems	<b>BIOM9410</b> Regulatory Requirements of Biomedical Technology
	<b>MATH1131</b> Mathematics 1A <b>OR</b> <b>MATH1141</b> Higher Mathematics 1A	<b>ELEC2141</b> Digital Circuit Design	<b>Free Elective</b>	<b>Recommended Discipline Elective</b>	<b>Biomedical Engineering Course</b>
Term 2	<b>MATH1231</b> Mathematics 1B <b>OR</b> <b>MATH1241</b> Higher Mathematics 1B	<b>COMP2521</b> Data Structures and Algorithms	<b>MTRN3100</b> Robot Design	<b>MTRN4230</b> Robotics	<b>BIOM4952</b> Research Thesis B (4 UoC)
	<b>COMP1511</b> Programming Fundamentals	<b>MMAN2300</b> Engineering Mechanics 2	<b>DESN3000</b> Strategic Design Innovation	<b>Biomedical Engineering Course</b>	<b>BIOM9420</b> Clinical Laboratory Science
		<b>MMAN2700*</b> Thermodynamics			<b>Biomedical Engineering Course</b>
Term 3	<b>MMAN1130</b> Design and Manufacturing	<b>DESN2000</b> Engineering Design and Professional Practice	<b>MTRN3500</b> Computing Applications in Mechatronics Systems	<b>Biomedical Engineering Course</b>	<b>BIOM4953</b> Research Thesis C (4 UoC)
	<b>ENGG1300</b> Engineering Mechanics	<b>MTRN2500</b> Computing for Mechatronic Engineers	<b>ANAT2511</b> Fundamentals of Anatomy	<b>Biomedical Engineering Course</b>	<b>Biomedical Engineering Course</b>
	<b>ELEC1111</b> Electrical Circuit Fundamentals		<b>Discipline Elective</b>	<b>Biomedical Engineering Course</b>	<b>Discipline Elective</b>

## Biomedical Engineering electives:

Biological Signal Analysis	Biomedical Instrumentation	Biosensors and Transducers	Bionics and Neuromodulation	Biomedical and Health Informatics
Biocompatibility	Cellular and Tissue Engineering	Mechanics of the Human Body	Medical Imaging	Mass Transfer in Medicine
Mechanical Properties of Biomaterials	Health Technology Innovation	Modelling Organs, Tissues and Devices	Rehabilitation Engineering and Assistive Technology	Bioelectronics and Physiological Measurement

NOTES	<p>You'll be required to complete 60 days of Industrial Training throughout your degree.</p>		<p>Visit the Degree Finder page here!</p>
	<p>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 <a href="http://www.handbook.unsw.edu.au">www.handbook.unsw.edu.au</a>.</p>		
	<p>UNSW's new 'flex-semester' calendar is scheduled to start in 2028. For more information see <a href="https://www.unsw.edu.au/academic-calendar-project">https://www.unsw.edu.au/academic-calendar-project</a>.</p>		