UNSW Engineering

Bachelor of Engineering (Honours) (Bioinformatics Engineering)

What do bioinformatics engineers do?

Bioinformatics mixes our core computing and maths courses with life sciences, including biology, chemistry and genetics. Genes and proteins are analysed to propose cures and solutions in biomedical and environmental sciences through the use of computer analysis.

In addition to computing careers, graduates work in biosciences, pharmaceutical and biotechnology industries, and all industries requiring data analysis, such as financial institutions.

What will your study involve?

This degree covers both computing and biosciences, alongside maths and specialised bioinformatics subjects. Students can choose subjects that focus on their particular areas of interest – including computing electives such as advanced programming, artificial intelligence, computer networks, cyber security or databases – or biological science electives like genetics, molecular biology, microbiology or biotechnology. There's a strong hands-on laboratory focus too so you can put your learnings into practice.

UNSW Computer Science and Engineering

- UNSW Computer Science and Engineering is ranked #1 in Australia by Times Higher Education.
- UNSW Computer Science and Engineering is one of the largest schools of its kind in Australia which provides the most technically challenging computing degrees in the country.
- UNSW Computer Science and Engineering is home to five-time world robot soccer champions, the UNSW 'rUNSWift' team.

Program details

Lowest Selection Rank (2022): 90

Duration: four-year embedded honours degree

Study areas: Biology, Computing, Data Management, DNA Data Analysis, Genomics and Genetics, Machine Learning, Mathematics, Web App Programming

Assumed knowledge: Mathematics Extension 1, Chemistry

Alternative 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

The degree is also accredited by the Australian Computer Society.

Career options

The bioinformatics, agritech, pharmaceutical, banking and finance industries provide many jobs. Graduates are also equipped to work with big data, and in consulting, development, digital services, education, health, IT, logistics, research, software engineering, computer security and more.

Student Testimonials

"This degree covered all the subjects I was interested in, from computer science to molecular biology, through statistics and genetics. Plus, with my thesis, having the freedom to run a significant project in a fascinating topic (the genetics of mental health) as an undergraduate has been truly empowering."

Sam Bassett, Bioinformatics Engineering (Honours)

Example study plan

	TERM 1			TERM 2			TERM 3		
YEAR 1	Programming Fundamentals	Mathematics 1A	Molecules, Cells and Genes	Computer System Fundamentals	Software Engineering Fundamentals	Mathematics 1B	Introduction to Engineering Design & Innovation	Discrete Mathematics	
YEAR 2	Physics 1A	Data Structures and Algorithms	Chemistry 1A	Molecular Cell Biology 1	Software Construction	Object-Oriented Design and Programming	Engineering Design and Professional Practice	Principles of Molecular. Biology (Advanced)	
YEAR 3	Molecular Biology of Nucleic Acids	Microbiology 1	Algorithms and Programming Techniques	Applied Bioinformatics	Theory of Statistics	General Education	Computational Bioinformatics	Elective	
YEAR 4	Professional Issues and Ethics in Information Technology	Database Systems	Research Thesis A	Elective	Elective	Research Thesis B	Elective	General Education	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.