



UNSW Engineering

Bachelor of Engineering (Honours) (Surveying)

What do surveyors do?

Surveying supports all construction activity and infrastructure engineering in urban and rural environments. Surveyors work alongside engineers, architects and land developers to define legal land boundaries and provide essential engineering support for urban development, large infrastructure projects, the development and operation of mines and the management of the environment and resources.

What will your study involve?

You'll learn how to use a range of high-tech surveying tools such as GPS, laser scanners, mapping drones and surveying robots to create high definition 3D models of the built and natural environment. You'll also learn how to apply maths and powerful software to deliver products for a range of applications. You'll choose a targeted final year thesis

project, sometimes in conjunction with an external industry partner to increase your career-readiness. Your thesis will help you understand real-world industry needs and form crucial professional networks you can leverage after graduating. Your thesis project will also help you develop sought-after research skills and let you broaden your knowledge in an area that sparks your interest.

UNSW Civil & Environmental Engineering

- 1st in Australia and 17th globally for Civil and Structural Engineering (QS Subject Rankings 2024).
- We have close links with key professional, commercial and industrial organisations, allowing us to offer exciting and innovative student-led projects and industry-based training.
- Our degrees place a strong emphasis on practical design and problem-solving.

Program details

Lowest Selection Rank (2024): 90

Duration: Four-year embedded honours degree

Study areas: Engineering and Mining Surveying, Cadastral Surveying and Land Law, Modern Geodesy, Navigation and Earth Observation, Precise GPS/GNSS Positioning, Satellite and Airborne Imaging, Laser scanning and drone mapping, Surveying Applications and Design, Business Management, Sustainable Land Development and Management, Water and Soil Engineering

Assumed knowledge: Mathematics Extension 1

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, accredited with Engineers Australia, and acknowledged by the Washington Accord which lets you work in over 20 countries across the globe upon graduation.

Career options

Surveying is a global profession facing a big skills shortage. There are excellent career

opportunities available in government, mining and private surveying as well as construction and civil engineering firms. Graduates can work in land management and planning, cadastral surveying and land law, hydrographic surveying, aerial imaging and cartography.

Student Testimonials

"They say working as a surveyor is half in the field and half in the office, and I love being outdoors. I think it would be awesome to have a job where I could travel through different countries – maybe to remote areas where they haven't got terrific maps – so I could do surveys for topographic drawings. That'd be the dream."

Hannah Pearce, Surveying



Example study plan

| | TERM 1 | | | TERM 2 | | | TERM 3 | | |
|---------------|---|--|--------------------------------|---------------------------------|--|--------------------------|-----------------------------------|--------------------------------|----------------------------|
| YEAR 1 | Introduction to Engineering Design & Innovation | Mathematics 1A | Physics 1A | Elective | Surveying & Geospatial Eng | Mathematics 1B | Computing for Engineers | Engineering Mechanics* | |
| YEAR 2 | Fluid Mechanics for Engineers | Foundations of Geodesy & Geospatial Ref Frames | Engineering Mathematics 2E | Engineering Computations | Engineering Design and Professional Practice | Surveying Computations A | Surveying & Geospatial Technology | Surveying Computations B | |
| YEAR 3 | Surveying Application & Design | Surveying Field Projects | Geospatial Information Systems | General Education | Geodetic Positioning & Apps | | Engineering Operations & Control | Cadastral Surveying & Land Law | Remote Sensing & Photogram |
| YEAR 4 | Water Resources Engineering | Land Management Project* | Thesis A | Geospatial Information Science* | Field Projects 2 | Thesis B | Professional Elective | General Education | Thesis C |

You'll be required to complete 60 days of Industrial Training throughout your degree.

*Recommended elective

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.