



UNSW Engineering

# Bachelor of Engineering (Honours) (Photovoltaics and Solar Energy Engineering)

## What do photovoltaic engineers do?

Photovoltaic engineering harnesses solar radiation to create electricity through the unlimited power of the sun. With increasing limitations on traditional energy sources, this industry is essential to the future of humanity on Earth. You'll study the manufacture and use of solar cells, with options to learn more about technology development, manufacturing, quality control, reliability, cell interconnection and encapsulation, photovoltaic system design and analysis, policy development and more.

## What will your study involve?

This award-winning degree was specifically designed to respond to a rapidly growing industry. It features a solid grounding in engineering, plus industry-specific training in everything from the manufacturing

and quality control of relevant technologies to policy development. You'll gain hands-on experience working with photovoltaic devices, modules and systems. Enrich your degree by studying 18 units of credit in a different specialisation.

## UNSW Photovoltaic and Renewable Energy Engineering

- We have been researching photovoltaics since 1975, with the commercially dominant PERC solar cell developed at UNSW.
- We're internationally recognised for research in the areas of photovoltaic devices and systems. Our renewable energy engineering interests extend to biomass, wind energy, solar thermal, policy and the sustainable use of conventional electricity.
- Our academics, researchers, staff and students are based in the Tyree Energy Technologies Building, a \$123.5 million, 6-Star Green Star rated building.

## Program details

**Lowest Selection Rank (2023):** 90

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

**Study areas:** Cell Interconnection and Encapsulation, Manufacturing, Policy Development, Quality Control, Reliability and Life-Cycle Analysis, , Solar Cell Applications, Solar Energy, Technology Development, Photovoltaic 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](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

Rapid growth in this industry means there is an increased need for specialised photovoltaic engineers. Graduates can work for solar cell manufacturers, research organisations, energy utilities and communication

companies and in system design and integration. There's no limit to what you can achieve in photovoltaics as new technologies are developed continuously

## Student Testimonials

"I chose this degree because I wanted the technical background to contribute to the clean energy revolution. My dream job is to contribute by working for the Australian Renewable Energy Agency funding clean tech venture capital, developing innovative business models and creating an enabling policy environment."

**Oscar Wilkie, Photovoltaics and Solar Energy Engineering (Honours)**



### Example study plan

	TERM 1			TERM 2			TERM 3		
<b>YEAR 1</b>	Introduction to Engineering Design & Innovation	Computing for Engineers	Mathematics 1A	Elective	Physics 1A		Engineering Materials & Chemistry	Mathematics 1B	Physics 1B
<b>YEAR 2</b>	Elective	Intro to Electronic Devices	Elective	Engineering Mathematics 2D	Project in Photovoltaics & Renewable Energy		Numerical Methods & Statistics	Engineering Design and Professional Practice	Applied Photovoltaics
<b>YEAR 3</b>	Elective	Solar Cells	General Education	Low Energy Buildings and Photovoltaics	Photovoltaic Technology & Manufacturing		Elective	General Education	Elective
<b>YEAR 4</b>	Strategic Leadership & Ethics	Elective	Thesis A	Energy Efficiency	Photovoltaic Systems Design	Thesis B	Elective	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.