

Photovoltaics and Renewable Energy

Postgraduate coursework programs

Never Stand Still

Engineering

Photovoltaics and Renewable Energy Engineering

YOUR FUTURE. YOUR CHOICE.

Engineers interested in the burgeoning photovoltaics and renewable energy industries, can choose advanced study options at UNSW Engineering.

Our programs can develop your existing skills or help you retrain and refocus in the direction of renewable energy technologies, systems and integration with existing energy systems.

SCHOOL OF PHOTOVOLTAIC AND RENEWABLE ENERGY ENGINEERING

For more than two decades UNSW has been a world leader in research and commercialisation of high performance silicon solar cells. Our renewable energy engineering interests extend beyond that, to biomass, wind energy, heat and electricity generation from solar thermal systems, sustainable use of electricity and integration of renewables with existing energy systems.

The School of Photovoltaic and Renewable Energy Engineering was established in order to enable a greater number of students to specialise in this growing area. Many of our Masters students have gone on to work in some of the world's largest photovoltaics and renewable energy companies.

The purpose-built Tyree Energy Technologies Building has been designed to provide a space where renewable energy engineering research, education and industry can collaborate to develop and implement sustainable energy technologies.

COURSEWORK PROGRAMS

- Master of Engineering Science (Photovoltaics and Solar Energy Engineering)
- Graduate Diploma of Engineering Science (Photovoltaics and Solar Energy Engineering)
- Master of Engineering Science (Renewable Energy Engineering)
- Graduate Diploma of Engineering Science (Renewable Energy Engineering).

MASTER OF ENGINEERING SCIENCE

THE DEGREE OF CHOICE FOR THE ENGINEERING PROFESSIONAL

The **Engineering Science** program at UNSW Engineering is designed especially for graduate engineers seeking to develop or enhance their careers through cross-training, re-training and specialisation.

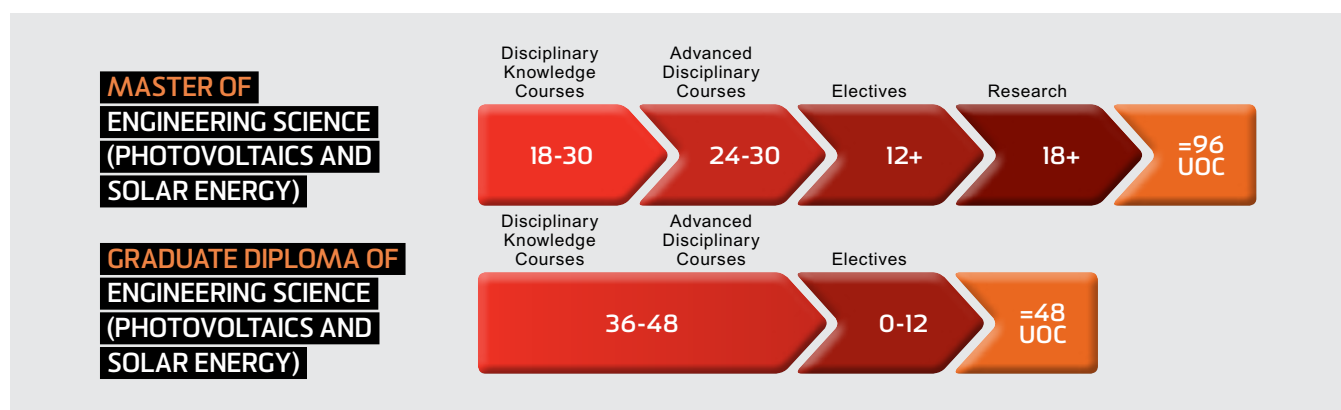
Our courses are rich with stimulating and comprehensive content that will inspire your learning and motivate you to move ahead into the next phase of your engineering future. An extensive research component ensures every graduating student is armed with the practical and analytical skills only possible through this high standard of education.

PROGRAM OPTIONS	PROGRAM CODE	UNITS OF CREDIT	DURATION*	COMMENCE
Master of Engineering Science (Photovoltaics and Solar Energy)	SOLACS8338	96	2 years	Feb, Jul
Graduate Diploma of Engineering Science (Photovoltaics and Solar Energy)	SOLAES5341	48	1 year	Feb, Jul
Master of Engineering Science (Renewable Energy Engineering)	SOLADS8338	96	2 years	Feb, Jul
Graduate Diploma of Engineering Science (Renewable Energy Engineering)	SOLAFS5341	48	1 year	Feb, Jul

* Eligible students may apply for credit for up to eight courses (48 UOC) of the Master of Engineering Science or four courses (24 UOC) of Graduate Diploma programs depending on previous study and professional experience. This can reduce the time taken by up to a year.

TYPICAL PROGRAM STRUCTURE - PHOTOVOLTAICS AND SOLAR ENERGY

This specialisation is designed to build on the previous education of engineers from other engineering disciplines who are attracted to the booming solar photovoltaic energy industry. It includes courses about photovoltaic devices, photovoltaic systems, applications and integration with electricity systems. As well as the Masters program, students can opt for a Graduate Diploma.



DISCIPLINARY KNOWLEDGE COURSES

Students can choose from:

- SOLA3010 Low Energy Buildings and Photovoltaics
- SOLA3020 Solar Cell Technology and Manufacturing
- SOLA3507 Solar Cells
- SOLA4012 Grid-Connected Photovoltaics
- SOLA5056 Sustainable Energy in Developing Countries
- SOLA9001 Photovoltaics.

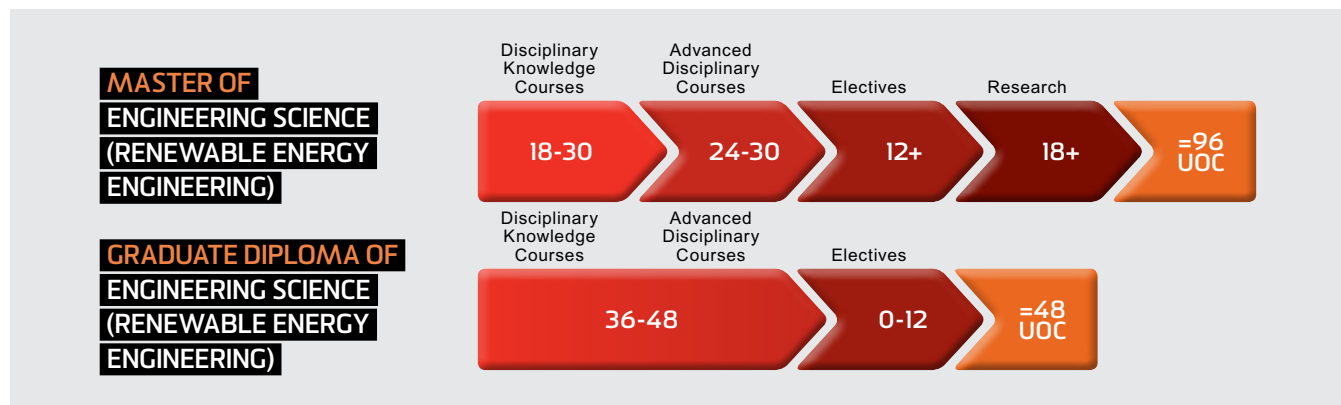
ADVANCED DISCIPLINARY KNOWLEDGE COURSES

Students can choose from:

- SOLA9120 Advanced Photovoltaic Manufacturing
- SOLA9101 Advanced Photovoltaics
- SOLA9102 Advanced Solar Cell Characterisation
- SOLA9104 Hybrid Renewable Energy Systems
- SOLA9014 Stand-Alone System Design and Installation
- SOLA9019 Photovoltaic Materials Processing Technology
- GSOE9017 Managing Energy Efficiency.

TYPICAL PROGRAM STRUCTURE - RENEWABLE ENERGY ENGINEERING

The specialisation in Renewable Energy is designed to build on the previous education of engineers who are currently being attracted to the booming renewable energy industry. Students undertake courses in renewable energy and energy efficiency, including technology, systems engineering, integration with existing energy systems, and assessment frameworks.



DISCIPLINARY KNOWLEDGE COURSES

Students can choose from:

- SOLA3010 Low Energy Buildings and Photovoltaics
- SOLA4012 Grid-Connected Photovoltaics
- SOLA5052 Biomass
- SOLA5053 Wind Energy Converters
- SOLA5057 Energy Efficiency
- SOLA9001 Photovoltaics
- MECH3610 Advanced Thermofluids.

ADVANCED DISCIPLINARY KNOWLEDGE COURSES

Students can choose from:

- SOLA9103 Renewable Energy System Performance Modelling and Analysis
- SOLA9104 Hybrid Renewable Energy Systems
- GSOE9122 Integrated Design Studio 4 High Performance Buildings
- MECH9720 Solar Thermal Energy Design
- ELEC9714 Electricity Industry Planning and Economics
- ELEC9715 Electricity Industry Operation and Control
- SOLA9101 Advanced Photovoltaics.

ELECTIVES (BOTH SPECIALISATIONS)

Students must choose at least one course from the approved list of Engineering and Technical Management Courses. Electives may also be taken from the Photovoltaic and Solar Energy or Renewable Energy specialisation courses or from another specialisation within the Master of Engineering Science program as long as the student is eligible to enrol.

A full and current list of courses is available online in the UNSW Handbook.

RESEARCH (BOTH SPECIALISATIONS)

Central to this program is a compulsory research component of 18 UOC that gives students the opportunity to broaden their understanding of something that they are passionate about through practical application with the close support of a practicing engineering researcher.

- GSOE9010 Engineering Postgraduate Coursework Research Essentials
- SOLA9914 Project Report A
- SOLA9915 Project Report B.

ENTRY REQUIREMENTS

Masters: Students need a recognised four year Bachelor degree in an appropriate area of engineering with at least Honours II/2 or equivalent.

Graduate Diploma: Students need a three or four year degree in a relevant discipline of engineering or science plus relevant professional experience. The Graduate Diploma is a common pathway to the Masters.

EXEMPTIONS OR ADVANCED STANDING

Students may be granted credit for some courses. Those with a four year honours degree (for example in Mechanical Engineering) can apply for credit for up to 48 UOC for the Masters (effectively reducing it to one year full time) or 24 UOC for the Graduate Diploma. Full details can be found on the program handbook page.

DELIVERY MODE

Face-to-face teaching is our strength, all part of our campus experience. Certain courses are offered in intensive short course mode and may also be offered by distance to suit busy professionals.

WHY UNSW ENGINEERING?

UNSW Engineering is the largest Engineering Faculty in Australia. We continue to foster and develop elite-level engineers across a broad range of disciplines exposing them to world-class innovation, cutting-edge research and dedicated teaching staff. As such, we are recognised as Australia's top Engineering university.*

WHY NOT JOIN US?

- **Cutting-edge programs** – be inspired by our research-led, industry-relevant curriculum.
- **Real-world focus** – continually updated programs ensure graduates are armed with the very latest knowledge and techniques to be able to stand at the top of their field.
- **Flexibility** – programs can be tailored to suit your interests, entry points twice a year, out-of-hours classes and distance learning options.

TAKING THE NEXT STEP

HOW TO APPLY

To gain entry to UNSW you'll need to successfully meet both the academic entry requirements and the English language requirements. For assistance with the application process, contact a UNSW official representative at international.unsw.edu.au/contact-us

Apply online at apply.unsw.edu.au

The UNSW Apply Online service has quick links to key information for applicants, including the application tracking service which allows you to check the progress of your application.

Closing Dates

Semester One (February): Applications must be lodged by 30 November.

Semester Two (July): Applications must be lodged by 30 May.

Not all programs have a Semester Two start date.

Late applications

Late applications will be accepted after the closing dates subject to the availability of places. Please note that whilst UNSW endeavour to process applications as quickly as possible, due to time constraints it cannot be guaranteed that a late application will be processed in time for semester commencement.

International Students

Applications are made directly to UNSW Australia, via our Apply Online portal at apply.unsw.edu.au For more information on what you need and how to apply go to international.unsw.edu.au

Most international students will require a student visa to study in Australia (application and processing of this visa may take some time). More information can be found at international.unsw.edu.au/living-sydney/visas/

SCHOLARSHIPS

There are a number of scholarships available for eligible students. To find out more about available postgraduate scholarships, eligibility and application process go to scholarships.unsw.edu.au

FEES

A postgraduate coursework fee calculator for both domestic and international students can be found at apply.unsw.edu.au

ACCOMMODATION

UNSW offers a range of accommodation options, visit housing.unsw.edu.au for full details.

STUDENT LIFE

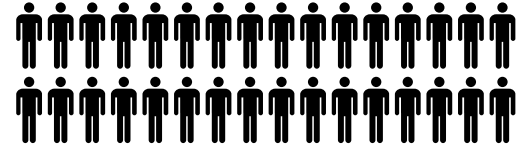
At UNSW there is an abundance of support available to students. To find out more about studying at UNSW, visit unsw.edu.au and search for Student Life.

* Shanghai Jiao Tong University's Academic Ranking of World Universities in Engineering/Technology and Computer Sciences 2014.

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in Australia according to Shanghai Jiao Tong University's Academic Ranking of World Universities in Engineering/Technology and Computer Sciences 2014.



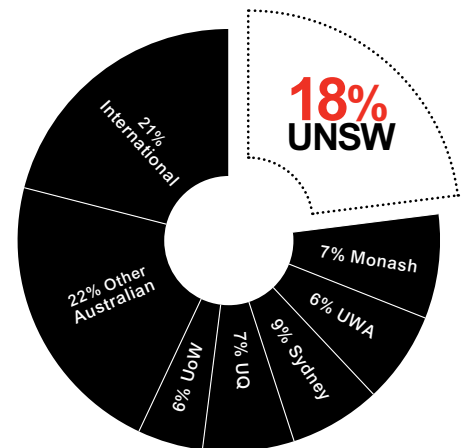
More technology entrepreneurs

than any other university in Australia.
(Crunchbase Report 2013)



QS World University Rankings by Subjects 2014

18th in Civil, 29th in Computing, 33rd in Electrical, 37th in Mechanical and 46th in Chemical.



18% of the **top 100** most influential engineers in Australia are UNSW Graduates*

*Engineers Australia Top 100 list in 2014

CONTACT US

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