

Nuclear Engineering

Postgraduate coursework programs

Never Stand Still

Engineering

Electrical Engineering and Telecommunications

YOUR FUTURE. YOUR CHOICE.

Global employment opportunities in the nuclear sector continue to grow with exciting opportunities in areas like nuclear research, nuclear energy, monitoring and control, and the medical uses of nuclear materials.

The Master of Engineering Science in Nuclear Engineering, the first of its kind in Australia, provides graduate students with the opportunity to train for an exciting career in the nuclear industry.

SCHOOL OF ELECTRICAL ENGINEERING AND TELECOMMUNICATIONS

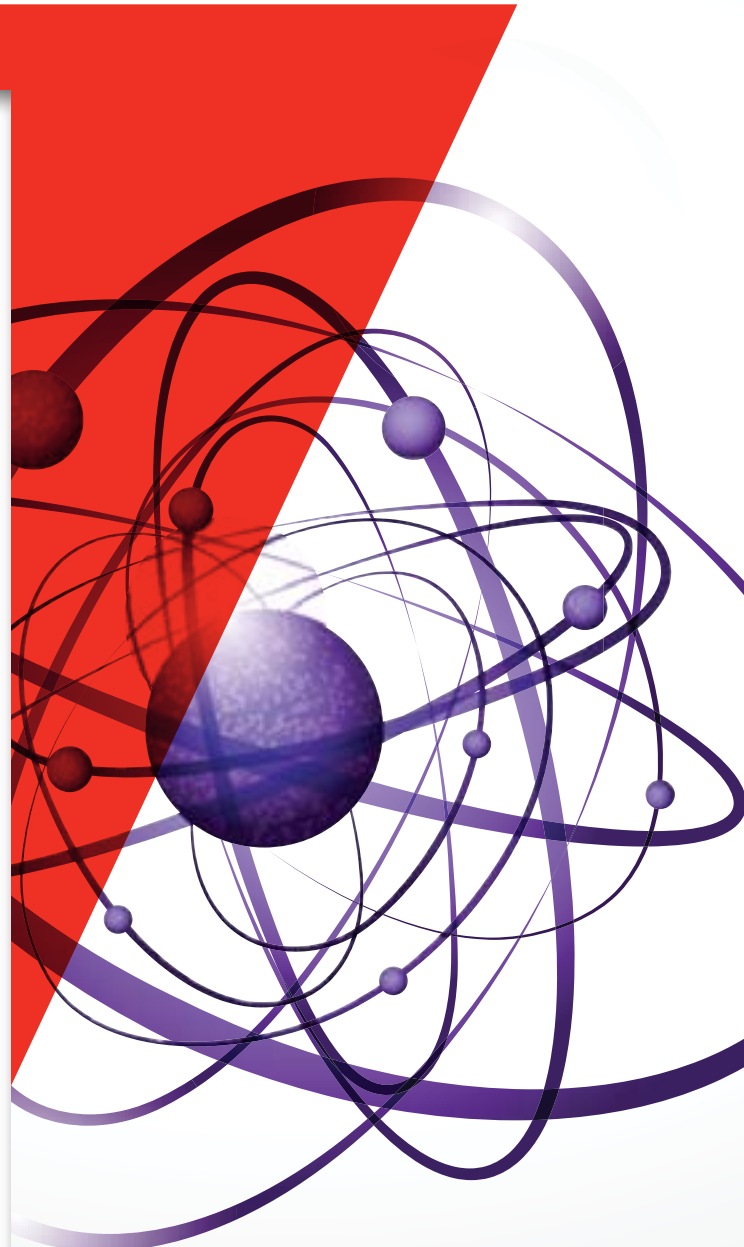
With a 60 year track record, the School of Electrical Engineering and Telecommunications courses are renowned for being on the very cusp of research innovation and contemporary industry practice.

Our staff interests cover an extraordinary range of theoretical, practical and management areas. Active industry involvement, state-of-the-art facilities, cutting-edge research and an ongoing course review and enhancement program ensure that our courses are at the forefront of global education in electrical engineering and telecommunications.

We offer exceptional course flexibility that allows students to consolidate a specialisation from an undergraduate degree, take advantage of professional development or refresher courses, or accelerate towards research or R&D careers.

COURSEWORK PROGRAMS

- Master of Engineering Science (Nuclear Engineering).



MASTER OF ENGINEERING SCIENCE

Nuclear engineering continues to be a growing field. In addition to the increasing 'new build' proposals in the western world, there is an existing set of reactors that require maintenance, servicing, operation and eventual decommissioning. There is waste to be managed and a fuel cycle that requires servicing and handling. All this requires engineers with an understanding of the unique environment of a nuclear site.

There is an ageing workforce in the sector thus a strong need for a new generation of nuclear-conversant engineers, and developing nuclear engineering skills is a fantastic opportunity for engineering graduates.

PROGRAM OPTIONS	PROGRAM CODE	UNITS OF CREDIT	DURATION*	COMMENCE
Master of Engineering Science (Nuclear Engineering)	ENGGPS8338	96	2 years	Feb, Jul

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

TYPICAL PROGRAM STRUCTURE

The aim of the Nuclear Engineering specialisation is to educate and inform engineering graduates in the underpinning theory behind nuclear engineering techniques, technologies and processes, and provides a stream that allows engineering graduates from traditional engineering disciplines to prepare themselves for a career in nuclear engineering.

You will learn from national and international experts in the Nuclear Engineering sector including staff from the Centre for Nuclear Engineering at Imperial College, London, and the Australian Nuclear Science and Technology Organisation (ANSTO) in Australia.



DISCIPLINARY KNOWLEDGE COURSES

With approval, students can choose subjects from relevant disciplines such as Maths, Physics, Electrical, Mechanical, Civil, and Mining. Up to 12 UOC foundational Disciplinary Knowledge Courses may be taken to provide necessary background and only with program authority approval.

Sample list for an electrical engineer:

- ELEC4611 Power System Equipment
- ELEC4612 Power System Analysis
- ELEC9714 Electricity Industry Planning
- ELEC9715 Electrical Industry Operation
- GSOE9143 Sustainable Energy Technology Assessment.

ADVANCED DISCIPLINARY COURSES

Students should take the following three core courses (18 UOC):

- ELEC9741 Introduction to Nuclear Engineering
- ELEC9742 Reactor Physics for Engineers
- ELEC9743 Fuel Cycle, Waste Management and Life-cycle Management.

PLUS they can choose one or two of the advanced electives (6-12 UOC) in the following list:

- ELEC9744 Safety, Security and Safeguards
- MINE8930 Uranium Mining Fundamentals.

ELECTIVES

At least one elective (6 UOC) must be taken from the approved list of Engineering and Technical Management Courses. All other electives (18 UOC) may also be taken from Disciplinary or Advanced Disciplinary Knowledge Courses from this specialisation or 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 COURSES

Students must complete a research component that gives them 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.

- ELEC9771 Project Report A
- ELEC9772 Project Report B
- GSOE9010 Engineering Postgraduate Coursework Research Essentials.

ENTRY REQUIREMENTS

A student must hold a Bachelor of Engineering with at least Honours II/2 (or equivalent) or hold a Graduate Diploma of Engineering with at least a credit average in a relevant discipline or an equivalent qualification from UNSW or another recognised university or tertiary institution in order to be admitted to the program. Relevant disciplines include biomedical, chemical, civil, computer, electrical, industrial chemistry, manufacturing, materials, mechanical, mechatronic, mining, naval, photovoltaic, renewable energy and telecommunications engineering.

EXEMPTIONS OR ADVANCED STANDING

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

DELIVERY MODE

A proportion of the course content will be delivered by international experts in nuclear engineering in an intensive mode. The recommended program has been scheduled such that the majority of Semester One classes are delivered in this block, intensive mode.

STUDENT TESTIMONIAL

"The Nuclear Engineering specialisation has exceeded expectations that I had of UNSW. It is a valuable course which is delivered primarily by practising experts in nuclear engineering. My project work with ANSTO on control rod vibrations is providing me with practical experience of the issues that nuclear reactor operators face. I feel the degree is preparing me for future employment in the nuclear area and opening avenues for international opportunities."



MARK GREENHALF
MASTER OF ENGINEERING
SCIENCE (NUCLEAR
ENGINEERING)



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

The **Sir William Tyree Foundation UNSW Nuclear Engineering Masters Award** offers eligible students the opportunity to apply for scholarships of up to A\$5,000. 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.

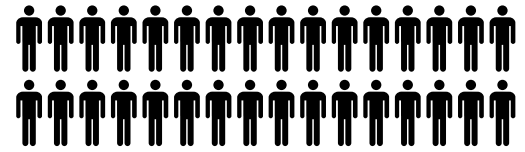
To find out more about studying at UNSW, visit unsw.edu.au and search for Student Life.

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

CRICOS Provider Code: NSW 00098G



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



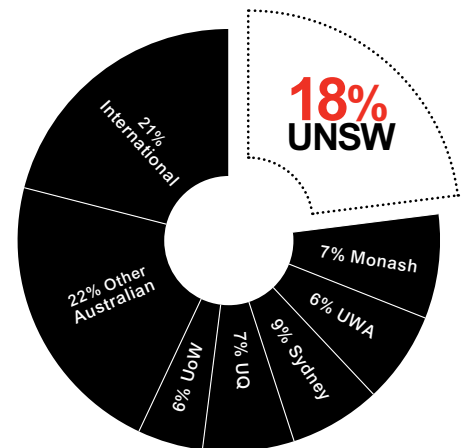
More technology entrepreneurs

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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