Clean energy is clever energy.
Clean energy is clever energy. As fossil fuels rapidly run out, we need to find clean energy alternatives and the best ways to store and use them. Our postgraduate engineering courses will equip you to develop and deliver smarter solutions for running our planet.
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Discover
Engineering and Professional Engineering

You may have various reasons to consider postgraduate study. Whether you want to qualify for a profession, enhance your career prospects or change careers, our specialised engineering postgraduate programs can help you achieve your goals.

Study at a highly ranked university
The University of Sydney is ranked among the top 50 engineering and technology universities in the world by QS World University Rankings and Times Higher Education World University Rankings.

The University is also one of the world’s top research universities and a member of Australia’s prestigious Group of Eight network. We received the highest ranking of five – ‘well above world standard’ – for engineering research performance in the Excellence in Research for Australia rankings.

Connected with industry
We understand the importance of working closely with industry. Our courses are designed with, and taught by, industry professionals. We partner with leaders from business, industry and academia.

Our expertise and facilities are highly sought after by industry, with our staff invited to provide professional consulting services for many businesses and government agencies.

“The Australian Research Council Training Centre I am involved in includes researchers from engineering, agriculture, science and medicine, as well as international collaborators and 10 food and biotechnology industry partners.”

Professor Fariba Dehghani
Co-director of the Australian Research Council Training Centre for the Australian Food Processing Industry in the 21st Century
“My research covers the development of biomaterials for bone and cartilage regeneration. This work has led to the development of new materials with characteristics similar to natural bone that the body won’t reject. Materials with the same strength and porosity as bone allow blood and nutrients to penetrate, kickstarting the body’s regeneration process and encouraging growth of bone that will completely replace the implant over time. The materials can be 3D printed, and have the potential to improve the quality of life of millions of people around the world.”

Professor Hala Zreiqat
Head of Biomaterials and Tissue Engineering Research

Globally recognised qualifications
Our Master of Professional Engineering is accredited by Engineers Australia, the national engineering accreditation body, enabling you to practise as an engineer in Australia and around the world.

Multidisciplinary strengths
By uniting expertise across disciplines, we make a real difference to our understanding of today’s world. We attract a diverse group of leading researchers from around the globe and provide an environment that encourages collaboration and innovation. Our research breaks down conventional disciplinary barriers to develop truly holistic solutions to today’s big issues.

“The electricity industry is poised for a revolution and my research into intelligent energy networks is supporting this change. I work with energy providers from around the world, helping them to develop smart grid technology. A smart grid can detect and react to changes in power usage. It is the cornerstone of more robust, flexible and efficient power networks. The work will enable us to meet the power demands of this and future generations.”

Professor Joe Dong
Head of School of Electrical and Information Engineering
International partnerships

We are committed to internationalising teaching, research and industry collaborations. We encourage our students, researchers and staff to engage in various forms of collaboration that deepen their knowledge and broaden their global outlook. The faculty has developed partnerships with key international institutions, including a landmark biomedical engineering alliance with Shanghai Jiao Tong University in China.

Innovative learning environment

Our labs, teaching spaces and learning hubs are designed to help you get the most out of your learning experience. They incorporate the latest technology and equipment and allow interactive study, research and collaboration.

Our high-calibre facilities include:

- the Australian Centre for Field Robotics, one of the world’s leading robotics research institutes, which has been instrumental in developing breakthrough technologies in field robotics principles and systems
- our Institute of Biomedical Engineering and Technology, which undertakes pioneering research with major national and international organisations in the areas of image processing and data management, image visualisation and analysis, bioinformatics and data mining, medical devices and networking, biomaterials and regenerative tissue engineering
- the Computing and Audio Research Laboratory, which, in collaboration with the Auditory Neuroscience Laboratory and the Acoustics Research Laboratory, is one of the three largest spatial audio research groups in the world
- our Centre for Advanced Structural Engineering, which houses one of the largest structural engineering laboratories in the southern hemisphere.

“I was delighted to be recognised for my contribution to furthering education, science and technology in China. It is the highest award issued by the Chinese government to foreign experts and I am truly honoured to receive it.”

Professor Branka Vucetic
Wireless communications expert; Recipient of a Chinese Government Friendship Award

“I am undertaking research into advanced control systems for robotic spacecraft at Texas A&M University, working with researchers at the LASR Laboratory and the Massachusetts Institute of Technology — and later, with NASA Johnson Space Center.”

Ben Morrell
PhD candidate
Scholarships
We offer various scholarships and other forms of financial assistance to help you achieve your personal and professional goals, including:

Commonwealth-supported places
Eligible domestic students enrolling in the Master of Professional Engineering can apply for a Commonwealth-supported place. This means the government contributes to the cost of your study and you pay a ‘student contribution amount’.

Dr Abdul Kalam International Scholarships
A former president of India, Dr Kalam established these merit-based scholarships for international students commencing a master’s program in the faculty.

Sydney Achievers Scholarships
This flagship scholarship program for international students rewards students with outstanding academic results. Each scholarship is valued at A$10,000 per year for the length of the degree.

Research scholarships
We offer a number of different research and supplementary scholarships including the Mick Boyle Research Scholarship in Engineering, designed to encourage research and innovation to create sustainable communities and infrastructure.

View all our scholarship opportunities at
- sydney.edu.au/scholarships
- sydney.edu.au/engineering/scholarships

Our programs
Coursework
The Faculty of Engineering and Information Technologies offers two engineering postgraduate coursework programs:
- Master of Engineering (page 6)
- Master of Professional Engineering (page 8).

If you are not sure which coursework program is right for you, the case studies on pages six and eight may help.

Research
We offer two postgraduate research programs in engineering (see page 10):
- Master of Philosophy (MPhil)
- Doctor of Philosophy (PhD).
Join
Master of Engineering

The Master of Engineering is a specialised program for qualified engineers seeking to move into a management role.

Case study
Lucy has a bachelor’s degree in civil engineering from an Australian university and is aiming to further her technical expertise in structural engineering as she progresses through to management in a large civil engineering firm.

Solution
The Master of Engineering will allow Lucy to build on her engineering expertise as well as develop professional and management skills that she can apply in the workplace in order to advance her career.

This program is designed to help qualified engineers strengthen their management capability and technical expertise. Qualified engineers looking to specialise or update their skills could also consider this program.

The Master of Engineering will allow you to build on your existing engineering undergraduate degree by developing specialised technical knowledge in one of 13 engineering majors:
- automation and manufacturing systems engineering
- biomedical engineering
- chemical and biomolecular engineering
- civil engineering
- electrical engineering
- fluids engineering
- geomechanical engineering
- mechanical engineering
- power engineering
- software engineering
- structural engineering
- sustainability and environmental engineering
- telecommunications engineering.

Course structure
This program comprises core units of study along with electives to broaden your knowledge. You will complete a sequence of specialist units that comprises a major in your chosen field. It has a strong focus on project work to enhance self-directed learning.

Professional engineering management subjects will enhance your leadership and commercial capabilities, providing you with greater opportunities to advance your career. They include:
- sustainable design, engineering and management
- entrepreneurship for engineers
- project process planning and control
- safety systems and risk management.

Research pathways are available within all majors, allowing you to complete a research project as preparation for a research degree.

Course duration
1.5 years full time
Depending on the level and type of your prior studies, you may be eligible for recognition of prior learning. This will reduce the length of your degree.
Admission requirements
To apply for this degree, you need to have a recognised Bachelor of Engineering degree in the same or a similar field of study to the major for which you are applying, with at least a credit average. Alternatively, you need to hold a Graduate Diploma in Engineering from the University of Sydney, with at least a credit average.

You may be considered for entry if you have a science degree or equivalent, with a major in a discipline that relates to your chosen engineering major, and you can demonstrate suitable prior learning.

If you don’t meet these criteria, you may be considered for entry into the Graduate Diploma in Engineering. If you achieve a credit average in the first semester, you can apply to transfer into the Master of Engineering.

More information
For detailed information regarding each specialisation, including units of study, see

- sydney.edu.au/courses

“Telecommunications technology moves rapidly. I chose the Master of Engineering for its focus on emerging technologies. I now have both strong management skills and the technical knowledge to put me at the top of my field.”

Rowena Larkins
Master of Engineering
Join
Master of Professional Engineering

The Master of Professional Engineering will provide you with a solid foundation for a career in engineering and a qualification that is in high demand around the world.

Course structure
The course comprises foundation units, elective units in the area of your specialisation and a 12-week practical industry experience component. You can also choose from several professional electives and complete a capstone project in your final year.

Specialisations
Fully accredited by Engineers Australia, the national accreditation body:
- biomedical engineering
- chemical and biomolecular engineering
- civil engineering
- electrical engineering
- mechanical engineering
- power engineering
- structural engineering
- telecommunications engineering

Provisionally accredited by Engineers Australia, the national accreditation body:
- aerospace engineering
- fluids engineering
- geomechanical engineering
- software engineering

*Current as at June 2015

Case study
Steven has a bachelor’s degree in science from an overseas university and wants to complete a master’s degree. He is looking to enhance his existing qualifications and specialise in software engineering, to work around the world as an engineer.

Solution
The Master of Professional Engineering will give Steven both the practical engineering practice and research skills in software engineering he needs to be recognised as an Australian graduate engineer.

If you would like to change careers and become an engineer, obtain accredited qualifications that will enable you to practise in Australia and overseas, or simply move into a different field of engineering, you might consider this master’s program.

The Master of Professional Engineering will provide you with the engineering professional practice and research skills that lead to recognition as an Australian graduate engineer. Your qualifications will be recognised internationally through the Washington Accord of the International Engineering Alliance.

This degree will also help you develop the sound communication, management and decision-making capabilities necessary to interpret and discuss complex issues in your area of specialisation.

Michell Liu
Master of Professional Engineering

“The undergraduate degree I studied in India focused on science. I wanted to build a stronger foundation in chemical engineering and become a professional engineer. Choosing the Master of Professional Engineering is one of the best decisions I’ve made. I’m now working as a risk and safety engineer in Sydney.”
“Studying professional engineering at Sydney changed my life – the flexible program made it easy for me to move into biomedical engineering. I have gone on to complete a PhD and founded my own biotech start-up.”

Ali Fathi
Master of Professional Engineering and PhD

Course duration
The Master of Professional Engineering is a three-year program. Depending on the level and type of your previous tertiary studies, you may be eligible for recognition of prior learning. This will reduce the length of your degree.

<table>
<thead>
<tr>
<th>Existing qualification</th>
<th>Recognition of prior learning</th>
<th>Duration (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of science or equivalent</td>
<td>up to 24 credit points</td>
<td>2.5–3</td>
</tr>
<tr>
<td>Bachelor of Engineering in unrelated field</td>
<td>up to 24 credit points</td>
<td>2.5</td>
</tr>
<tr>
<td>Bachelor of Engineering in related field</td>
<td>up to 48 credit points</td>
<td>2</td>
</tr>
</tbody>
</table>

Note: This table is indicative only. Eligibility for recognition of prior learning will be assessed on a case-by-case basis.

Admission requirements
Applicants need to have a recognised bachelor’s degree in engineering, science or applied science with at least an honours, honours equivalent or credit average, and sufficient tertiary knowledge of mathematics and science-based units, depending on your chosen specialisation.

More information
For detailed information regarding each specialisation, including units of study, see
- sydney.edu.au/courses
Join Research programs

Regularly ranked in the top 0.3 percent of universities worldwide, our researchers are leaders in their fields and use their knowledge and skills to change lives in Australia and around the world.

Our faculty focuses on multidisciplinary research centred on various key themes:
- field robotics
- agricultural engineering
- biomedical engineering and technologies
- human-centred technology
- complex systems
- materials and structures
- food processing
- clean, intelligent energy networks
- water and the environment.

We offer the opportunity to pursue research with a Master of Philosophy or a Doctor of Philosophy.

**Master of Philosophy (MPhil)**
**Duration: 2 years**
The Master of Philosophy program involves preparing a thesis considered to make an original contribution to the subject concerned. Applicants need to have a bachelor’s degree with first or second-class honours or an equivalent qualification from an accredited institution.

Candidates who achieve an outstanding performance may be eligible to upgrade to the Doctor of Philosophy.

**Doctor of Philosophy (PhD)**
**Duration: 3 years**
The Doctor of Philosophy program involves preparing a thesis considered to make a substantial and original contribution to the subject concerned. Applicants need to have a master’s degree by research or a bachelor’s degree with first or second-class honours or equivalent from a recognised institution.

**Supporting our researchers**
We support our researchers in various ways, from providing strategic advice on research opportunities to assisting them to access funding.

As well as supporting our researchers to excel in their chosen field, we help them to develop transferable skills in research leadership and management, commercialisation, communication and cross-disciplinary capabilities.
Mouna Hamad came to the University of Sydney after completing a Bachelor of Medicinal Chemistry (Advanced). Her interest in chemical and biomolecular engineering inspired her to pursue a PhD in this field.

Mouna’s research involves stem cells and their use in regenerative medicine, including the treatment of bone defects, Parkinson’s disease, diabetes and leukaemia.

Her current focus is on the most critical problem leukaemia patients still face – the difficulty in obtaining matching bone marrow for transplant.

“My research focuses on stem cell technology in the treatment of leukaemia,” Mouna says. “We face a critical shortage of matching bone marrow for transplant. My work has led to the development of new techniques that will potentially use some of the patient’s healthy stem cells to bioengineer bone marrow for transplant without risk of rejection.”

Because stem cells are such a powerful biomedical tool, this technique could later be applied to virtually all tissue engineering applications.
The next steps
How to apply

Coursework
If you are a domestic or international applicant, we invite you to apply online for postgraduate study by coursework, by following these steps:

Step 1
Search for the course you are interested in at
− sydney.edu.au/courses

Step 2
Select the program of study you wish to apply for and check that you meet the admission requirements.

Step 3
Click the ‘apply now’ button to proceed with your application.

You can also apply for recognition of prior learning which, if approved, can significantly reduce the length of your degree.

Research
If you would like to apply for a research degree, we ask you to follow these steps:

Step 1: Find an academic supervisor
Our Research Supervisor Connect online portal lists all the University research opportunities currently available for new students. Search through research ideas, read about supervisors’ areas of interest and expertise, and make initial contact with them:
− sydney.edu.au/research/opportunities

Step 2: Develop a research proposal
Once you have had a talk with an academic, you need to develop and submit an initial research proposal. The supervisor will read and comment on your proposal, and indicate if they are willing to supervise you before you submit your application. You can find more information about developing a proposal under ‘how to apply’ at
− sydney.edu.au/research/opportunities

Step 3: Identify academic referees
You will need to provide details of two academic referees who are familiar with your previous academic qualifications and achievements, who can then submit an academic referee report on your behalf. Instructions are provided within your online application form.

Step 4: Submit your application
We invite you to lodge your application online:
− visit sydney.edu.au/courses and search for your program of study
− select the degree for which you wish to apply
− click on the ‘apply’ button to begin the application process.

Need more information?
Domestic students
sydney.edu.au/ask-domestic
1800 SYD UNI (1800 793 864)

International students
sydney.edu.au/ask-international
+61 2 8627 1444 (outside Australia)
# What’s on offer

## Faculty courses at a glance

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Duration (years)</th>
<th>Credit points</th>
<th>Mode of delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate Diploma in Computing</td>
<td>1.5</td>
<td>60</td>
<td>full time, part time, block mode, flexible</td>
</tr>
<tr>
<td>Information Technology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate Certificate in Information Technology</td>
<td>0.5</td>
<td>24</td>
<td>full time, part time, block mode, flexible</td>
</tr>
<tr>
<td>Graduate Diploma in Information Technology</td>
<td>1</td>
<td>48</td>
<td>full time, part time, block mode, flexible</td>
</tr>
<tr>
<td>Master of Information Technology</td>
<td>1.5</td>
<td>72</td>
<td>full time, part time, block mode, flexible</td>
</tr>
<tr>
<td>Information Technology Management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate Certificate in Information Technology Management</td>
<td>0.5</td>
<td>24</td>
<td>full time, part time, block mode, flexible</td>
</tr>
<tr>
<td>Graduate Diploma in Information Technology Management</td>
<td>1</td>
<td>48</td>
<td>full time, part time, block mode, flexible</td>
</tr>
<tr>
<td>Master of Information Technology Management</td>
<td>1.5</td>
<td>72</td>
<td>full time, part time, block mode, flexible</td>
</tr>
<tr>
<td>Master of Information Technology / Master of Information Technology Management</td>
<td>2</td>
<td>96</td>
<td>full time, part time, block mode, flexible</td>
</tr>
<tr>
<td>Data Science</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate Certificate in Data Science</td>
<td>0.5</td>
<td>24</td>
<td>full time, part time, block mode, flexible</td>
</tr>
<tr>
<td>Master of Data Science</td>
<td>1</td>
<td>48</td>
<td>full time, part time, block mode, flexible</td>
</tr>
<tr>
<td>Health Technology Innovation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate Diploma in Health Technology Innovation</td>
<td>1.5</td>
<td>60</td>
<td>full time, part time, block mode, flexible</td>
</tr>
<tr>
<td>Master of Health Technology Innovation</td>
<td>2</td>
<td>96</td>
<td>full time, part time, block mode, flexible</td>
</tr>
<tr>
<td>Engineering</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate Certificate in Engineering</td>
<td>0.5</td>
<td>24</td>
<td>full time, part time, block mode, flexible</td>
</tr>
<tr>
<td>Graduate Diploma in Engineering</td>
<td>1</td>
<td>36</td>
<td>full time, part time, block mode, flexible</td>
</tr>
<tr>
<td>Master of Engineering</td>
<td>1.5</td>
<td>72</td>
<td>full time, part time, block mode, flexible</td>
</tr>
<tr>
<td>Professional Engineering</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Master of Professional Engineering</td>
<td>2-3</td>
<td>144</td>
<td>full time, part time, block mode, flexible</td>
</tr>
<tr>
<td>Project Management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate Certificate in Project Management</td>
<td>0.5</td>
<td>24</td>
<td>full time, part time, block mode, flexible</td>
</tr>
<tr>
<td>Graduate Diploma in Project Management</td>
<td>1</td>
<td>48</td>
<td>full time, part time, block mode, flexible</td>
</tr>
<tr>
<td>Master of Project Management</td>
<td>1.5</td>
<td>72</td>
<td>full time, part time, block mode, flexible</td>
</tr>
<tr>
<td>Project Leadership</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate Certificate in Project Leadership</td>
<td>0.5</td>
<td>24</td>
<td>full time, part time, block mode, flexible</td>
</tr>
<tr>
<td>Graduate Diploma in Project Leadership</td>
<td>1</td>
<td>36</td>
<td>full time, part time, block mode, flexible</td>
</tr>
<tr>
<td>Master of Project Leadership</td>
<td>1</td>
<td>48</td>
<td>full time, part time, block mode, flexible</td>
</tr>
<tr>
<td>Research</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Master of Philosophy</td>
<td>Min. 2</td>
<td>N/A</td>
<td>full time, part time, block mode, flexible</td>
</tr>
<tr>
<td>Doctor of Philosophy</td>
<td>Min. 3</td>
<td>N/A</td>
<td>full time, part time, block mode, flexible</td>
</tr>
</tbody>
</table>

Note: All courses have a mid-year intake. Please refer to sydney.edu.au/courses for up-to-date course information.
If you read only one thing, read this.

Your journey to university is as unique as you are.

At the University of Sydney, you have the opportunity to steer your own path. You can gain professional qualifications, customise your course and get involved in extracurricular activities to personalise your university experience.

This guide provides the key information you need to apply for a postgraduate degree in engineering, but the next step is up to you.

To learn more, come and see us on Open Day, call our helpline or visit our website.

1800 SYD UNI (1800 793 864)
+61 2 8627 1444 (outside Australia)

sydney.edu.au/futurestudents

Contact us
sydney.edu.au/ask-domestic
sydney.edu.au/ask-international
sydney.edu.au/engineering
1800 SYD UNI (1800 793 864)
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