# Study Area Engineering



Sulman, Pakistan Bachelor of Civil Engineering (Honours)

# Why study with us

The role of an engineer is ever-changing. From building complex computer systems and influencing the infrastructure we use every day, to finding new ways to harness energy or even designing prosthetic limbs to help amputees – engineers play a critical role in overcoming the challenges our world faces. Challenges like food and water security, climate change, data protection and the increasing impact growing populations have on society. As a global leader in engineering higher education, including being ranked No. 13 in the world for Automation and Control Engineering, this is the place to develop world-changing solutions.





Top 100 in the world - Civil and Structural Engineering<sup>1</sup>

**No. 1** in Australia for Automation and Control Engineering<sup>2</sup>

\*



See the website for a full list of our degree options and programs

THEFT

# Bachelor of Chemical Engineering (Honours)

| CRICOS code              | 018788M  |
|--------------------------|--|
| Duration                 | 4 yrs FT   |
| Locations                | Newcastle – Callaghan                                      |
| Indicative<br>annual fee | 2021 A\$38,005<br>2022 A\$38,955                           |
| IELTS                    | IELTS overall minimum - 6.0<br>IELTS section minimum - 6.0 |
| Intake                   | S1, S2   |
| Practical experience     | Opportunities available                                    |

# **Course overview**

Want to use mathematics, science and creativity to overcome challenges and find solutions? Chemical engineers help develop everyday products like toothpaste, chocolate, lipstick, paracetamol and petrol. You could work as part of a team developing high efficiency insulation products that improve heating and cooling. You could work on biofuel production in remote communities. You might work in the food industry. The possibilities are diverse and exciting.

# What you will study

Become job-ready through four professional practice courses and diversify your skills with an elective pathway. Build critical technical engineering skills in:

- heat transfer and the design of energy systems
- thermodynamics
- mass transfer and separation processes
  fluid mechanics
- kinetics and reaction engineering
- green engineering and sustainability processes

# **Professional recognition**

Our degree is accredited through Engineers Australia and the Institution of Chemical Engineers (UK), meaning graduates have greater opportunities for international mobility.

See the website for

more information

about this degree.

# Career opportunites/outcomes

- Some typical positions include:
- Biotechnology Engineer
- Chemical Safety Manager
- Engineer
- Environmental Remediation
- Mineral Processing Engineer
- Nuclear Engineer
- Water Treatment Designer

# Bachelor of Civil Engineering (Honours)

| CRICOS code              | 018786B  |
|--------------------------|--|
| Duration                 | 4 yrs FT   |
| Locations                | Newcastle – Callaghan<br>Singapore*                        |
| Indicative<br>annual fee | 2021 A\$38,304<br>2022 A\$39,262                           |
| IELTS                    | IELTS overall minimum - 6.0<br>IELTS section minimum - 6.0 |
| Intake                   | S1, S2   |
| Practical<br>experience  | Opportunities available                                    |

# **Course overview**

Civil engineers are responsible for the physical infrastructure that enables modern societies to function. Buildings, highways and railways, tunnels, airports, power generation facilities and harbour facilities are all designed, built and managed by civil engineers. We educate our engineers to meet the global challenges of the future. With a Bachelor of Civil Engineering (Honours), you could engineer energy efficient buildings, or help develop sustainable and resilient infrastructure in developing countries.

# What you will study

All of our Civil Engineering students complete courses in the three core civil specialisations of structural, water and geotechnical engineering, making them highly employable upon graduation. Become job-ready through four professional practice courses and diversify your skills with an elective pathway:

- structural engineering
- water engineering
- geomechanics
- fluid dynamics
- civil engineering materials steel design

# **Professional recognition**

Professional recognition through Engineers Australia qualifies you as a professional engineer, meaning graduates have greater opportunities for international mobility.

# Career opportunites/outcomes

Civil engineers work for construction companies, consulting firms, project management companies, transport companies and governments.

- Some typical positions include:
- Civil Engineering Designer
- Geotechnical Engineer
- Stormwater Engineer
- Structural Engineer
- Transport Systems Engineer
- Urban Development Engineer

Students have the option for further study with a Master of Professional Engineering (see page 95 of the International Prospectus).



See the website for more information about this degree.

# Bachelor of Electrical and Electronic Engineering (Honours)

| CRICOS code              | 092849M  |
|--------------------------|--|
| Duration                 | 4 yrs FT   |
| Locations                | Newcastle – Callaghan<br>Singapore                         |
| Indicative<br>annual fee | 2021 A\$38,430<br>2022 A\$39,391                           |
| IELTS                    | IELTS overall minimum - 6.0<br>IELTS section minimum - 6.0 |
| Intake                   | S1, S2 – Callaghan<br>T1, T2, T3 – Singapore               |
| Practical<br>experience  | Opportunities available                                    |

# **Course overview**

Engineers solve problems and develop technology using mathematics, science and creativity for the advancement of humanity. Electrical and electronic technologies are at the heart of our world and our future, including things like alternative energy systems, high speed wireless data communications, electrical transportation systems, micro and nanoelectronics, robotics and automation, and medical technologies. Electrical and electronic engineers work on both the hardware and software (the intelligence) behind the myriad of devices essential to address the needs of modern society.

# What you will study

Take on real-world challenges through professional practice courses and diversify your skills with an elective pathway. Build critical technical and engineering skills in:

- electric energy systems and renewables
- electronics design
- embedded systems hardware and software
- communication systems and internet of things
- automation and feedback control systems

# **Professional recognition**

Professional recognition through Engineers Australia means graduates will be qualified as professional engineers, meaning graduates have greater opportunities for international mobility.

# Career opportunites/outcomes

Some typical positions include:

- Automatic Systems Designer
- Biomedical Instrumentation Designer
- Electrical Design Engineer
- Embedded System Designer
- Renewable Energy Systems Engineer
- Robotics Engineer
- Telecommunications Equipment Designer

Students have the option for further study with a Master of Professional Engineering (see page 95 of the International Prospectus).



# **Bachelor of Environmental Engineering (Honours)**

| CRICOS code              | 011012E  |
|--------------------------|--|
| Duration                 | 4 yrs FT   |
| Locations                | Newcastle – Callaghan                                      |
| Indicative<br>annual fee | 2021 A\$38,876<br>2022 A\$39,848                           |
| IELTS                    | IELTS overall minimum - 6.0<br>IELTS section minimum - 6.0 |
| Intake                   | S1, S2   |
| Practical experience     | Opportunities available                                    |

# **Course overview**

As an environmental engineer you may help rehabilitate land impacted by mining or work on the clean-up of an oil spill that threatens ecosystems. Applying your knowledge of chemistry, geomechanics, hydrology and land surface processes to find solutions to complex environmental problems. With a Bachelor of Environmental Engineering (Honours), you will be responsible for developing sustainable engineering practices that have a profound impact on health and quality of life - working with other specialists to optimise the use of resources and minimise long-term environmental impacts.

# What you will study

Become job-ready through professional practice courses and diversify your skills with an elective pathway. Build critical technical and engineering skills in:

- environmental chemistry
- · environmental legislation and planning
- fluid mechanics
- hydrobiological modelling
- land surface process and management
- water engineering

# **Professional recognition**

Professional recognition through Engineers Australia qualifies you as a professional engineer, meaning graduates have greater opportunities for international mobility

# Career opportunites/outcomes

This degree is flexible and diverse. You may prefer hands-on fieldwork, design and development, or a leadership role managing people and projects.

Some typical positions include:

- Climate Impact Assessment Expert
- Environmental Impact Consultant
- Environmental Remediation Technician
- Sustainable Fisheries Consultant
- Toxic Materials Control Engineer
- Water Reclamation Project Designer

# **Bachelor of Mechanical Engineering (Honours)**

| CRICOS code              | 018795A  |
|--------------------------|--|
| Duration                 | 4 yrs FT   |
| Locations                | Newcastle – Callaghan<br>Singapore                         |
| Indicative<br>annual fee | 2021 A\$37,874<br>2022 A\$38,820                           |
| IELTS                    | IELTS overall minimum - 6.0<br>IELTS section minimum - 6.0 |
| Intake                   | S1, S2 – Callaghan<br>T1, T2, T3 – Singapore               |
| Practical experience     | Opportunities available                                    |

# **Course overview**

Mechanical engineers design, manufacture and optimise specialist machines and processes. They solve important problems using robotics, advanced materials, and the laws of energy generation and transmission. They work on everything from power plants, to air conditioners, aircraft engines and race cars. You could design self-driving farm machinery for ultra-efficient food production, or build revolutionary biomechanical solutions for people living with disability.

# What you will study

Mechanical engineering is the broadest of all engineering disciplines. You will gain essential workplace skills with professional practice courses and diversify your skills with an elective pathway. Build critical technical and engineering skills in:

- mathematics, physics, design and mechanics
- · advanced materials and manufacturing
- bulk solids handling
- fluid dynamics
- thermodynamics
- computer-aided engineering

# **Professional recognition**

Professional recognition through Engineers Australia qualifies you as a professional engineer, meaning graduates have greater opportunities for international mobility.

# Career opportunites/outcomes

Almost all industries need mechanical engineers, such as medical, transport, aerospace, electronics, mining, renewable energy, robotics, automation and advanced manufacturing industries.

- Some typical positions include:
- Engineering Project Manager Mechanical Engineering Designer
- Mechanical Systems Supervisor
- Mechanical Technology Engineer
- Operating Plant Manager

Students have the option for further study with a Master of Professional Engineering (see page 95 of the International Prospectus).



See the website for more information about this degree.

# **Bachelor of Mechatronics Engineering (Honours)**

| CRICOS code              | 032765A  |
|--------------------------|--|
| Duration                 | 4 yrs FT   |
| Locations                | Newcastle – Callaghan                                      |
| Indicative<br>annual fee | 2021 A\$38,215<br>2022 A\$39,170                           |
| IELTS                    | IELTS overall minimum - 6.0<br>IELTS section minimum - 6.0 |
| Intake                   | S1, S2   |
| Practical experience     | Opportunities available                                    |

# **Course overview**

The Bachelor of Mechatronics Engineering (Honours) focuses on the connection between electrical, computer and mechanical technologies that lead to new solutions to industrial problems. You might build robots or unmanned aircraft, design bionic implants or even energy harvesting equipment. Mechatronics engineers are involved in the technical design, automation and operational performance of the electromechanical systems used in industries such as defence, advanced manufacturing, mining and health.

# What you will study

Gain essential workplace skills with professional practice courses and diversify your skills with an elective pathway. Build critical technical and engineering skills in:

- computer-integrated manufacturing
- electronic design
- mechatronics design
- microprocessor systems
- modelling and simulation
- · sensors and actuators

# Professional recognition

Professional recognition through Engineers Australia qualifies you as a professional engineer, meaning graduates have greater opportunities for international mobility.

# Career opportunites/outcomes

Mechatronic engineers play an essential role in a growing number of fields such as robotics, aerospace, chemical, defence, automotive, marine, manufacturing, mining or finance industries.

Some typical positions include:

- Avionics Engineer
- Industrial Automation Engineer
- Robotics Designer
- Smart Infrastructure Designer



See the website for more information about this degree.

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See the website for more information about this degree.



# Bachelor of Medical Engineering (Honours)

| CRICOS code              | 096509K  |
|--------------------------|--|
| Duration                 | 4 yrs FT   |
| Locations                | Newcastle – Callaghan                                      |
| Indicative<br>annual fee | 2021 A\$38,882<br>2022 A\$39,854                           |
| IELTS                    | IELTS overall minimum - 6.0<br>IELTS section minimum - 6.0 |
| Intake                   | S1, S2   |
| Practical experience     | Opportunities available                                    |
|                          |  |

# **Course overview**

A new and exciting discipline of engineering spanning medicine, biomedical science and engineering. Medical engineers seek to improve human health through the development and design of equipment, devices, computer systems and software. A degree in medical engineering allows you to combine your interest in health and medicine with creativity and problemsolving to address health care challenges such as metabolic disorders, remote diagnostics, and health care accessibility. Our graduates are uniquely placed to improve lives both locally and around the world.

# What you will study

Build critical medical and engineering skills through courses in:

- human pathophysiology
- engineering design
- programming and computing
- neurobiology
- fluid mechanics
- electronics design

Choose one of the following majors:

- Medical Biomechanics
- Medical Devices

# Career opportunites/outcomes

Depending on your area of specialisation, you could work with:

- artificial organs
- diagnostic equipment
- dialysis equipment
- implantable devices
- prosthetic limbs
- rehabilitation systems
- radiotherapy equipment
- respirators and ventilators
- surgical devices

# Bachelor of Renewable Energy Engineering (Honours)

| CRICOS code              | 099293G  |
|--------------------------|--|
| Duration                 | 4 yrs FT   |
| Locations                | Newcastle – Callaghan                                      |
| Indicative<br>annual fee | 2021 A\$38,131<br>2022 A\$39,084                           |
| IELTS                    | IELTS overall minimum - 6.0<br>IELTS section minimum - 6.0 |
| Intake                   | S1, S2   |
| Practical experience     | Opportunities available                                    |

# **Course overview**

One of the biggest challenges we all face is the transition to a renewable energy economy. The success of this evolution depends on the creative solutions of a new generation of renewable energy engineers with specialised skills. This includes disciplines of chemical, electrical and mechanical engineering. This program will prepare you to work across the whole spectrum of technologies for renewable energy capture, conversion, storage, delivery and management. You will also choose courses in related areas of climate change policy, law and economics and environmental sciences.

# What you will study

Build critical technical skills in:

- solar and wind
- geothermal, hydro, ocean and hybrid systems
- carbon accounting and energy auditing
  power electronics and renewable energy
- . systems
- bioenergy
- energy storage systems

Become job-ready through four professional practice courses and diversify your skills with an elective pathway.

# **Professional recognition**

This program has been granted provisional accreditation through Engineers Australia.

# Career opportunites/outcomes

Career examples include:

- Energy Accounting/Auditing
- Energy Management Consultant
- Energy Policy Development Officer
- Renewable Energy Engineer
- Renewable Energy Innovation
- Renewable Energy Systems Design

# Bachelor of Software Engineering (Honours)

| CRICOS code              | 021335C  |
|--------------------------|--|
| Duration                 | 4 yrs FT   |
| Locations                | Newcastle – Callaghan                                      |
| Indicative<br>annual fee | 2021 A\$37,081<br>2022 A\$38,008                           |
| IELTS                    | IELTS overall minimum - 6.0<br>IELTS section minimum - 6.0 |
| Intake                   | S1, S2   |
| Practical<br>experience  | Opportunities available                                    |
|                          |  |

# **Course overview**

Software engineering is behind much of the everyday technology we take for granted – from our tablets, computer software and mobile phones through to digital televisions, computer games and online banking. With the Bachelor of Software Engineering (Honours) you might develop software for digital forensics analysis to help fight crime, or work in defence and combat cyber attacks. You could design wearable health management devices or write the software that powers e-commerce websites.

# What you will study

Build critical technical and engineering skills in:

- database management systems
- enterprise software
- computer architecture
- formal languages and automation
- programming languages and paradigms
- software architecture and quality
- management • software development

# **Professional recognition**

Professional recognition through Engineers Australia and the Australian Computer Society means graduates will be qualified as professional engineers meaning graduates have greater opportunities for international mobility.

# **Career opportunites/outcomes**

You could work in a wide range of industries such as defence and security, aerospace, computer games and entertainment as well as government and commerce.

Some typical positions include:

- Applications Software Developer
- Software Engineer
- Software Development Manager
- Internet and Web Engineerw
- Telecommunications Engineer



See the website for more information about this degree.



See the website for more information about this degree.



See the website for more information about this degree. 3

# **Bachelor of Surveying (Honours)**

| CRICOS code              | 077826K  |
|--------------------------|--|
| Duration                 | 4 yrs FT   |
| Locations                | Newcastle – Callaghan                                      |
| Indicative<br>annual fee | 2021 A\$38,367<br>2022 A\$39,326                           |
| IELTS                    | IELTS overall minimum - 6.0<br>IELTS section minimum - 6.0 |
| Intake                   | S1, S2   |
| Practical experience     | Opportunities available                                    |

# **Course overview**

Surveyors specialise in the measurement, management, analysis and display of spatial information describing the Earth and its physical features. The work of surveyors knows no bounds and could see you play an important role both locally and globally. With the Bachelor of Surveying (Honours), you could be involved in projects like the preparation for building of a new tunnel, or mapping of flood areas for disaster preparedness. Your work as a surveyor could even see you involved in the prediction of earthquakes and surveying of the ocean floor.

# What you will study

Become job-ready through professional practice courses and build critical technical and surveying skills in:

- geodesy
- photogrammetry and laser scanning
- industrial and cadastral surveying
- land and mining surveying
- satellite positioning
- spatial data systems and remote sensing
- modern surveying techniques and computations

# **Professional recognition**

This degree program is accredited by the Council of Reciprocating Surveying Boards of Australia and New Zealand, and meets the requirements of the Board of Surveying and Spatial Information (BOSSI). This degree program is also accredited and recognised by the Land Surveyors Board, Malaysia.

# Career opportunites/outcomes

Our graduates enjoy great job prospects with 91 per cent finding work within four months of completing their degree.

Some typical positions include:

- Engineering
   Hydrographic
   Surveyor
   Surveyor
- Geographic
   Information Systems
   Surveyor
  - Registered Mine
- Geospatial Specialist Surveyor

Students have the option for further study with a Master of Professional Engineering (see page 95 of the International Prospectus).



Specialist

See the website for more information about this degree.

# Master of Materials Science and Engineering

| CRICOS code              | 0100265  |
|--------------------------|--|
| Duration                 | 2 yrs FT<br>Accelerated options available                  |
| Locations                | Newcastle – Callaghan                                      |
| Indicative<br>annual fee | 2021 A\$41,995<br>2022 A\$43,045                           |
| IELTS                    | IELTS overall minimum - 6.5<br>IELTS section minimum - 6.0 |
| Intake                   | S1, S2   |
| Practical experience     | Opportunities available                                    |

# **Course overview**

With a focus on the fast-growing field of advanced nanomaterials, you will learn how the processing of a material influences its structure, properties and performance. Delivered through the Global Innovative Centre for Advanced Nanomaterials (GICAN) and in collaboration with industry partner CSIRO, the Master of Materials Science and Engineering will prepare you to meet the global demand of this growing industry. You could work in fields like education, medicine, information technology, energy and environmental technologies, and spacial science.

# What you will study

This unique program focuses on the expanding field of advanced nanomaterials for use in energy, environment, biology and life science industries.

Through this program you will deepen your skills in:

- nanomaterials
- functional materials
- biomaterials
- drug carriers
- photovoltaics
- soft materials
- useful metal alloys

# Career opportunites/outcomes

- Career examples include:
- Forensic Scientist
- Formulation Chemist
- Industrial Chemist
- Laboratory Technician
- Market Researcher/Analyst
- Materials Scientist
- Metallurgist
- Product Analyst/Developer
- Quality Assurance Specialist
- Research Officer

# Master of Professional Engineering (Civil)

| CRICOS code              | 098283G  |
|--------------------------|--|
| Duration                 | 3 yrs FT<br>Accelerated options available                  |
| Locations                | Newcastle – Callaghan                                      |
| Indicative<br>annual fee | 2021 A\$40,604<br>2022 A\$41,619                           |
| IELTS                    | IELTS overall minimum - 6.5<br>IELTS section minimum - 6.0 |
| Intake                   | S1, S2   |
| Practical experience     | Opportunities available                                    |

# **Course overview**

This degree will help you develop the strategic and technical skills required to help build the physical infrastructure that enables our societies to thrive and grow. If you have a background in a related area, such as science or mathematics, the three-year MPE provides an opportunity to gain a professionally recognised qualification in engineering. For those with an engineering degree, you can apply for credit and take this program in accelerated mode (1-2 years) to gain professional recognition in Australia and advance your career.

# What you will study

You will deepen your skills through advanced civil engineering courses in areas such as hydrology, land surface process and management, and geotechnical and geoenvironmental engineering. Plus you can broaden your skill base with complementary courses in management, disaster preparedness, business and the environment as well as project planning, entrepreneurship and innovation. You will also complete a year-long advanced civil engineering project (design-based or theoretical).

# **Professional recognition**

This program has been granted provisional accreditation through Engineers Australia.

# Career opportunites/outcomes

Civil engineers work for construction companies, consulting firms, project management companies, transport companies and governments. You could specialise in engineering, water, transport or geotechnical engineering.

Engineering is one of the most in-demand qualifications in the world, with many countries desperate to fill a skills shortage in this field. A Master of Professional Engineering will open up even more varied career opportunities, empowering you to take on a leadership role, start your own business or manage major engineering projects.



See the website for more information about this degree.



See the website for more information about this degree.

# Master of Professional Engineering (Electrical and Electronic)

| CRICOS code              | 098284F  |
|--------------------------|--|
| Duration                 | 3 yrs FT<br>Accelerated options available                  |
| Locations                | Newcastle – Callaghan                                      |
| Indicative<br>annual fee | 2021 A\$41,916<br>2022 A\$42,964                           |
| IELTS                    | IELTS overall minimum - 6.5<br>IELTS section minimum - 6.0 |
| Intake                   | S1, S2   |
| Practical experience     | Opportunities available                                    |
|                          |  |

# **Course overview**

Gain advanced capabilities in emerging electrical engineering technologies, which are currently transforming modern society. Diversify your skills base in an area such as business and management, entrepreneurship or design. Be globally recognised - we are ranked at No.13 in the World and No.1 in Australia for Automation and Control\*. If you have a background in a related area, such as science or mathematics, the threeyear MPE provides an opportunity to gain a professionally recognised qualification in engineering. For those with an engineering degree, you can apply for credit and take this program in accelerated mode (1-2 years) to gain professional recognition in Australia and advance your career.

# What you will study

You will have the opportunity to diversify your engineering expertise with courses in specialised areas including renewable energy integration, control systems design and automation, digital and electronic design, advanced telecommunication and power electronics, drives and highly efficient power utilisation. Plus, you can choose a major project that's focused on design or research. Our professional practice and leadership courses will help you develop skills in project management, complex problem solving, innovation and communications.

# Professional recognition

This program has been granted provisional accreditation through Engineers Australia.

# **Career opportunites/outcomes**

Electrical engineers are employed in utilities, industry, manufacturing, consulting services and electronic design and development. You could specialise in electronics engineering, automation and control, robotics or power generation and distribution.

Engineering is one of the most in-demand qualifications in the world, with many countries desperate to fill a skills shortage in this field. A Master of Professional Engineering will open up even more varied career opportunities, empowering you to take on a leadership role, start your own business or manage major engineering projects.



See the website for more information about this degree.

# Master of Professional Engineering (Geospatial Engineering and Surveying)

| CRICOS code              | 092850G  |
|--------------------------|--|
| Duration                 | 2 yrs FT<br>Accelerated options available                  |
| Locations                | Newcastle – Callaghan                                      |
| Indicative<br>annual fee | 2021 A\$40,950<br>2022 A\$41,974                           |
| IELTS                    | IELTS overall minimum - 6.5<br>IELTS section minimum - 6.0 |
| Intake                   | S1, S2   |
| Practical experience     | Opportunities available                                    |
|                          |  |

# **Course overview**

If you are looking to start or advance your career in the field of surveying and spatial information, the Master of Professional Engineering (Geospatial Engineering and Surveying) at the University of Newcastle will help you develop management expertise, specialise and deepen your technical skills and be ready to lead projects and move into more senior roles. Those with a recognised degree in a area can apply for credit and take this program in accelerated mode to advance their career.

# What you will study

This flexible degree allows you to fast-track your career in surveying and geospatial engineering. You will have the opportunity to expand your expertise with courses in specialised spatial data collection, industrial surveying, remote sensing, photogrammetry, astronomy and satellite positioning, analysis and management, or complementary areas such as business and management, entrepreneurship and innovation, or design. Plus, you can choose a major project focused on design or research.

# Career opportunites/outcomes

Surveyors and geospatial engineers work on different projects across different environments, including industries like land surveying, mining surveying, remote sensing, geodesy and space research, construction, environmental management and transportation. Surveying and geospatial engineering continues to be one of the most in-demand qualifications in the world, with many countries needing to fill a shortage of professional skills in this field.



See the website for more information about this degree.

# Master of Professional Engineering (Mechanical)

| CRICOS code              | 098285E  |
|--------------------------|--|
| Duration                 | 3 yrs FT<br>Accelerated options available                  |
| Locations                | Newcastle – Callaghan                                      |
| Indicative<br>annual fee | 2021 A\$41,816<br>2022 A\$42,862                           |
| IELTS                    | IELTS overall minimum - 6.5<br>IELTS section minimum - 6.0 |
| Intake                   | S1, S2   |
| Practical<br>experience  | Opportunities available                                    |

# Course overview

Diversify your career with this degree. Specialise your technical skills and develop the professional attributes to provide innovative solutions to society's needs now and into the future. You will gain project management and complex problem-solving skills and learn how to apply design thinking and systems engineering principles. If you have a background in a related area, such as science or mathematics, the threeyear MPE provides an opportunity to gain a professionally recognised qualification in engineering. For those with an engineering degree, you can apply for credit and take this program in accelerated mode (1-2 years) to gain professional recognition in Australia and advance your career.

# What you will study

You will take advanced mechanical engineering courses in fluid mechanics, mechanical engineering design, materials science and engineering, engineering computations, dynamics of machines, mechanics of solids and heat transfer. You will also choose from courses in areas such as computer aided engineering and manufacturing, bulk materials handling and transport, renewable energy conversion and engineering economic analysis. Plus, you can choose a major project that's focused on design or research.

## Professional recognition

This program has been granted provisional accreditation through Engineers Australia.

# Career opportunites/outcomes

Almost all industries need mechanical engineers. They work in medical, transport, automotive, aerospace, electronics, and mining industries, and in growth sectors like renewable energy, robotics, automation and advanced manufacturing.

Engineering continues to be one of the most in-demand qualifications in the world, with many countries experiencing a skills shortage in this field. An MPE will open up even more varied career opportunities, empowering you to take on a leadership role, start your own business or manage major engineering projects.



See the website for more information about this degree. 5

|  | CRICOS  | <b>Duration</b><br>(Years, semesters<br>or trimesters) | Location | Intakes              | <b>IELTS</b><br>Overall Minimum/<br>Section Minimum | 2021 Indicative<br>Annual Fee A\$^ | 2022 Indicative<br>Annual Fee A\$^ |
|--|---------|--|----------|----------------------|---|------------------------------------|------------------------------------|
| Engineering  |         |  |          |                      |   |                                    |                                    |
| Bachelor of Chemical Engineering (Honours)   | 018788M | 4  | Ν        | S1, S2               | 6.0/6.0   | \$38,005                           | \$38,955                           |
| Bachelor of Chemical Engineering<br>(Honours)/Bachelor of Business   | 093505E | 5  | Ν        | S1                   | 6.0/6.0   | \$35,978                           | \$36,877                           |
| Bachelor of Chemical Engineering<br>(Honours)/Bachelor of Mathematics  | 088924F | 5  | Ν        | S1                   | 6.0/6.0   | \$37,254                           | \$38,185                           |
| Bachelor of Civil Engineering (Honours)  | 018786B | 4  | N<br>SG  | S1, S2<br>S2         | 6.0/6.0   | \$38,304                           | \$39,262                           |
| Bachelor of Civil Engineering (Honours)/<br>Bachelor of Business   | 093506D | 5  | Ν        | S1                   | 6.0/6.0   | \$35,831                           | \$36,727                           |
| Bachelor of Civil Engineering (Honours)/<br>Bachelor of Environmental Engineering<br>(Honours)                       | 088926D | 5  | Ν        | S1                   | 6.0/6.0   | \$38,861                           | \$39,833                           |
| Bachelor of Civil Engineering (Honours)/<br>Bachelor of Mathematics  | 088938M | 5  | Ν        | S1                   | 6.0/6.0   | \$37,154                           | \$38,083                           |
| Bachelor of Civil Engineering (Honours)/<br>Bachelor of Surveying (Honours)  | 088923G | 5  | Ν        | S1                   | 6.0/6.0   | \$38,430                           | \$39,391                           |
| Bachelor of Computer Systems Engineering<br>(Honours)  | 092848A | 4  | Ν        | S1, S2               | 6.0/6.0   | \$38,220                           | \$39,176                           |
| Bachelor of Computer Systems Engineering<br>(Honours)/Bachelor of Computer Science                                   | 088927C | 5  | Ν        | S1                   | 6.0/6.0   | \$37,622                           | \$38,562                           |
| Bachelor of Computer Systems Engineering<br>(Honours)/Bachelor of Mathematics  | 088928B | 5  | Ν        | S1                   | 6.0/6.0   | \$37,170                           | \$38,099                           |
| Bachelor of Electrical and Electronic<br>Engineering (Honours)   | 092849M | 4  | N<br>SG  | S1, S2<br>T1, T2, T3 | 6.0/6.0   | \$38,430                           | \$39,391                           |
| Bachelor of Electrical and Electronic<br>Engineering (Honours)/ Bachelor of<br>Business                              | 093507C | 5  | Ν        | S1                   | 6.0/6.0   | \$35,564                           | \$36,453                           |
| Bachelor of Electrical and Electronic<br>Engineering (Honours)/ Bachelor of<br>Computer Systems Engineering (Honours | 093503G | 5  | Ν        | S1                   | 6.0/6.0   | \$38,399                           | \$39,358                           |
| Bachelor of Electrical and Electronic<br>Engineering (Honours)/Bachelor of<br>Mathematics                            | 088931G | 5  | Ν        | S1                   | 6.0/6.0   | \$37,333                           | \$38,266                           |
| Bachelor of Environmental Engineering<br>(Honours)   | 011012E | 4  | Ν        | S1, S2               | 6.0/6.0   | \$38,876                           | \$39,848                           |
| Bachelor of Mechanical Engineering<br>(Honours)  | 018795A | 4  | N<br>SG  | S1, S2<br>T1, T2, T3 | 6.0/6.0   | \$37,874                           | \$38,820                           |
| Bachelor of Mechanical Engineering<br>(Honours)/Bachelor of Business   | 093508B | 5  | Ν        | S1                   | 6.0/6.0   | \$35,884                           | \$36,781                           |
| Bachelor of Mechanical Engineering<br>(Honours)/Bachelor of Mathematics  | 088937A | 5  | Ν        | S1                   | 6.0/6.0   | \$37,317                           | \$38,250                           |
| Bachelor of Mechanical Engineering<br>(Honours)/Bachelor of Mechatronics<br>Engineering (Honours)                    | 088934D | 5  | Ν        | S1                   | 6.0/6.0   | \$38,535                           | \$39,498                           |
| Bachelor of Mechatronics Engineering<br>(Honours)  | 032765A | 4  | Ν        | S1, S2               | 6.0/6.0   | \$38,215                           | \$39,170                           |
| Bachelor of Mechatronics Engineering<br>(Honours)/Bachelor of Electrical and<br>Electronic Engineering (Honours)     | 093504F | 5  | Ν        | S1                   | 6.0/6.0   | \$38,493                           | \$39,455                           |

# **KEY FOR LOCATIONS**

# NC Newcastle – City N Newcastle – Callaghan S Sydney CC Central Coast – Ourimbah SG Singapore

# **KEY FOR INTAKES**

- S1 Semester 1S2 Semester 2T1 Trimester 1
- T2 Trimester 2 T3 Trimester 3
- W Winter

|  | CRICOS  | Duration<br>(Years, semesters<br>or trimesters) | Location | Intakes | <b>IELTS</b><br>Overall Minimum/<br>Section Minimum | 2021 Indicative<br>Annual Fee A\$^ | 2022 Indicative<br>Annual Fee אלי |
|--|---------|---|----------|---------|---|------------------------------------|-----------------------------------|
| Engineering  |         |   |          |         |   |                                    |                                   |
| Bachelor of Mechatronics Engineering<br>(Honours)/Bachelor of Mathematics      | 088936B | 5   | Ν        | S1      | 6.0/6.0   | \$36,824                           | \$37,744                          |
| Bachelor of Medical Engineering (Honours)                                      | 096509K | 4   | Ν        | S1, S2  | 6.0/6.0   | \$38,882                           | \$39,854                          |
| Bachelor of Renewable Energy Engineering<br>(Honours)                          | 099293G | 4   | Ν        | S1, S2  | 6.0/6.0   | \$38,131                           | \$39,084                          |
| Bachelor of Software Engineering (Honours)                                     | 021335C | 4   | Ν        | S1, S2  | 6.0/6.0   | \$37,081                           | \$38,008                          |
| Bachelor of Surveying (Honours)  | 077826K | 4   | Ν        | S1, S2  | 6.0/6.0   | \$38,367                           | \$39,326                          |
| Bachelor of Surveying (Honours)/Bachelor<br>of Business                        | 093510G | 5   | Ν        | S1      | 6.0/6.0   | \$35,747                           | \$36,641                          |
| Master of Materials Science and<br>Engineering                                 | 0100265 | 4 semesters                                     | Ν        | S1, S2  | 6.5/6.0   | \$41,995                           | \$43,045                          |
| Master of Professional Engineering (Civil) #                                   | 098283G | 6 semesters                                     | Ν        | S1, S2  | 6.5/6.0   | \$40,604                           | \$41,619                          |
| Master of Professional Engineering<br>(Electrical and Electronic) #            | 098284F | 6 semesters                                     | Ν        | S1, S2  | 6.5/ 6.0  | \$41,916                           | \$42,964                          |
| Master of Professional Engineering<br>(Geospatial Engineering and Surveying) # | 092850G | 4 semesters                                     | Ν        | S1, S2  | 6.5 /6.0  | \$40,950                           | \$41,974                          |
| Master of Professional Engineering<br>(Mechanical) #                           | 098285E | 6 semesters                                     | Ν        | S1, S2  | 6.5/ 6.0  | \$41,816                           | \$42,862                          |

# **KEY FOR LOCATIONS**

 NC
 Newcastle – City

 N
 Newcastle – Callaghan
 S
 Sydney

 CC
 Central Coast – Ourimbah
 SG
 Singapore

# **KEY FOR INTAKES**

S1 Semester 1 Semester 2 **T1** Trimester 1

T2 Trimester 2

T3 Trimester 3 W Winter

# Accelerated degree options available based on individual student backgrounds.

# Q University of Newcastle

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