



Engineering Postgraduate Guide 2015

Never Stand Still

Engineering

UNSW ENGINEERING
Your future. Your choice.



A WORLD OF POSSIBILITIES POSTGRADUATE ENGINEERING AT UNSW

Whatever your motivation and goals, advanced-level engineering education delivers valuable benefits to your career and personal development.

- Elevate existing technical knowledge and skills
- Acquire new skills in a given specialisation
- Explore innovative approaches to engineering management
- Interact with peers at the cutting edge of industry
- Be exposed to world-class research in a university environment.

We are Australia's leading engineering faculty and our programs reflect our reputation.

UNSW ENGINEERING.

IMPROVING LIVES BY CREATING

BOLD NEW SOLUTIONS TO GLOBALLY

RELEVANT CHALLENGES.



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BE A LEADER ENJOY SUCCESS...

the knowledge and skills you learn through postgraduate study will elevate you to new heights.

POSTGRADUATE STUDY AN IMPORTANT INVESTMENT...

in yourself and your future, so that your career heads in the direction you want.

GET THE EDGE IMPROVE YOUR PROSPECTS...

investing in a postgraduate degree shows employers you are serious about the future, adding the competitive edge needed in the market today.

WHAT STUDENTS SAY

"UNSW's globally acknowledged reputation and the latest technology, laboratories and facilities made choosing where to study easy, but it was the program outline and the variety of courses offered that attracted me the most. Guest lecturers from the industry's leading organisations, and industry expo events, helped provide me with a deeper understanding about what is happening in the industry."

– Baran Yildiz, Master of Engineering Science (Renewable Energy Engineering)

WHY UNSW ENGINEERING

UNSW Engineering is the largest Engineering Faculty in Australia and offers the country's most diverse range of programs. Our world-class research places us at the forefront of innovation with award-winning researchers focusing on areas critical to the future. We continue to foster and develop elite-level engineers across a broad range of disciplines and, as such, we are recognised as Australia's top Engineering university*.

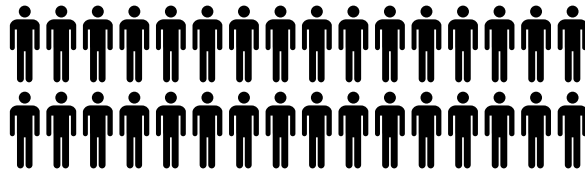
ENTRUST US WITH YOUR FUTURE

- **BROAD RANGE OF SPECIALISATIONS** – finely tune your skills in a particular area or retrain and refocus your current engineering career.
- **CUTTING-EDGE PROGRAMS** – our research-integrated curriculum drives and inspires our students, with a strong emphasis on design and problem solving.
- **REAL-WORLD FOCUS** – with extensive links to key players in industry and government our programs are continually updated to ensure you are armed with the very latest knowledge and techniques, using state-of-the-art facilities to give them a distinct industry advantage.
- **FLEXIBILITY** – the majority of our programs can be tailored to suit individual interests so you can choose electives from a broad range of areas. You can commence your postgraduate study either in February or July and classes run outside business hours. There are also distance learning courses in some areas.

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



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



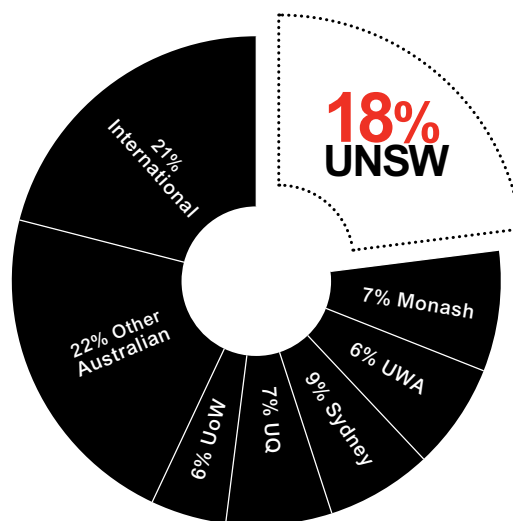
More technology entrepreneurs

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

PROGRAMS TO CHALLENGE TOP STUDENTS

Our Masters degrees are designed to challenge top students to achieve high levels of understanding and excellence in their chosen discipline. Created in consultation with industry and taught by handpicked academics and experts, our postgraduate coursework degrees give you specific skills, knowledge and confidence that can make a real difference to your future.

MASTER OF ENGINEERING SCIENCE

Our flagship Masters degree is designed for those who have a four year engineering honours degree who want to advance their education and evolve their career. There is a core of key engineering subjects that can be applied to all fields, and an expansive choice of specialisations and electives depending on what interests you.

MASTER OF ENGINEERING

This two year program is designed for those wanting to enter the engineering profession or for currently practicing engineers who wish to expand their knowledge and skills in engineering management, acquire an in-depth knowledge of a particular specialisation, or gain technical confidence. The five specialisations are professionally accredited (or awaiting accreditation) by Engineers Australia.

SPECIALIST POSTGRADUATE PROGRAMS

These programs are designed to provide further education in fields such as mining, biomedical engineering, information technology and food science and technology.

THE CHOICE IS YOURS

MASTER OF ENGINEERING SCIENCE PROGRAM

Biomedical Engineering
Chemical Process Engineering
Civil Engineering
Electrical Engineering
Energy Systems*
Environmental Engineering
Food Process Engineering
Geospatial Engineering
Geotechnical Engineering and Engineering Geology*
Manufacturing Engineering and Management*
Mechanical Engineering
Nuclear Engineering
Petroleum Engineering
Photovoltaics and Solar Energy
Project Management
Renewable Energy Engineering
Satellite Systems Engineering
Structural Engineering*
Systems and Control*
Telecommunications
Transport Engineering*
Water Engineering: catchments to coast*
Water, Wastewater and Waste Engineering

MASTER OF ENGINEERING PROGRAM

Civil Engineering
Electrical Engineering
Environmental Engineering
Mechanical Engineering
Telecommunications

SPECIALIST PROGRAMS

Biomedical Engineering
Food Science and Technology
IT and Computing
Mining Engineering
Mine Geotechnical Engineering

* Students wishing to study these specialisations could also complete a Master of Engineering program in either Electrical Engineering or Civil Engineering by choosing electives in these areas.

PROGRAM QUICK VIEW

AREA OF SPECIALISATION	ENGINEERING SCIENCE			MASTER OF ENGINEERING 2 YEARS	SPECIALIST PROGRAMS AVAILABLE
	MASTERS 2 YEARS	GRADUATE DIPLOMA 1 YEAR	GRADUATE CERTIFICATE 6 MONTHS		
Biomedical Engineering	✓				✓
Chemical Process Engineering	✓	✓			
Civil Engineering	✓	✓	✓	✓	
Electrical Engineering	✓	✓		✓	
Energy Systems	✓	✓			
Environmental Engineering	✓	✓		✓	
Food Science and Technology	✓	✓			✓
Geospatial Engineering	✓	✓	✓		
Geotechnical Engineering and Engineering Geology	✓	✓			
IT and Computing					✓
Manufacturing Engineering and Management	✓	✓			
Mechanical Engineering	✓	✓		✓	
Mining Engineering					✓
Nuclear Engineering	✓				
Petroleum Engineering*	✓	✓	✓		
Photovoltaics and Solar Energy	✓	✓			
Project Management	✓	✓			
Renewable Energy Engineering	✓	✓			
Satellite Systems Engineering	✓				
Structural Engineering	✓	✓			
Systems and Control	✓				
Telecommunications	✓	✓		✓	
Transport Engineering	✓	✓			
Water Engineering: catchments to coast	✓	✓			
Water, Wastewater and Waste Engineering	✓	✓			

* Graduate Diploma specialisation in Petroleum Engineering is 1.5 years and the Graduate Certificate is 1 year.

MASTER OF ENGINEERING SCIENCE

ONE DEGREE, A WEALTH OF CHOICE

The **Master of Engineering Science** is the heart of postgraduate education at the Faculty of Engineering with majors in most fields of engineering. It is especially suited to students with a four year honours degree in engineering from a recognised institution.

Depending on how much time you have to invest, your previous education and the type of work experience you have, some specialisations also offer the option of a Graduate Diploma and Graduate Certificate.

WHICH LEVEL SUITS YOU?

MASTER OF ENGINEERING SCIENCE

16 courses
(96 UOC)

up to 2 years
full time*

This Masters is especially for professionals seeking to develop or enhance their careers through cross-training, re-training and specialisation – including a research component.

*Students may apply for credit for up to eight courses (or 48 UOC) reducing the time taken to one year.

GRADUATE DIPLOMA OF ENGINEERING SCIENCE

8 courses
(48 UOC)

up to 1 year
full time^

For graduate engineers who wish to retrain or undertake a shorter program of specialised study the Graduate Diploma is also a very handy step-up into the Masters program.

^Credit may be available for up to four courses (or 24 UOC) reducing the time taken to six months. Petroleum Engineering specialisation is 1.5 years full time.

GRADUATE CERTIFICATE OF ENGINEERING SCIENCE

4 courses
(24 UOC)

6 months
full time†

For engineers with professional experience seeking formal qualifications and graduate engineers who wish to retrain or specialise. The Graduate Certificate is a great step into postgraduate study, especially for those who may not quite qualify for direct entry to the Masters program.

†Petroleum Engineering specialisation is one year full time.

ENGINEERING SCIENCE PROGRAM STRUCTURE

When you study Engineering Science you need to complete specific subjects according to the specialisation you choose, but there is also plenty of scope to choose electives to enrich your degree with topics that particularly interest you.

Below is a sample graphic showing how each program works – and how flexible it can be. Each subject is worth a certain amount (usually 6 Units of Credit or 6 UOC) and you need to complete the required total UOC to graduate. Masters students also have exposure to research to add a greater dimension to their study. Some Graduate Diplomas also require a small research component, while others offer it as an option.



DISCIPLINARY KNOWLEDGE COURSES

These subjects are designed to develop core knowledge and skills in your chosen specialisation and prepare students for the Advanced Disciplinary Knowledge Courses. If you are moving from a different discipline, these courses are particularly valuable. On the other hand, a student holding an undergraduate degree in a similar discipline may be granted advanced standing in some of these courses. Talk to the relevant school for more information.

ADVANCED DISCIPLINARY KNOWLEDGE COURSES

These courses are what it's all about. They drill down to the intricate details of the discipline, fostering deep analysis and problem-solving skills that prepare graduates to really make a difference in their chosen career. Students are encouraged to consider choosing their electives from the Advanced Disciplinary Knowledge Courses list.

ELECTIVES

Electives are designed to give students the opportunity to tailor their program to what really drives them personally and provide extended training in key areas of technology management. Selections may be made from an approved list of Engineering and Technical Management courses, from the Disciplinary and Advanced Disciplinary Knowledge Course lists within the specialisation (and from other specialisations with approval), and sometimes from other disciplines altogether.

RESEARCH

Research of up to 24 UOC (depending on the specialisation) is an essential part of the Masters program – providing a greater depth to study. Many Graduate Diplomas have an option of a smaller research component, and in some it is compulsory. Exemption may be granted in some circumstances.

MASTER OF ENGINEERING

STEP UP YOUR ENGINEERING KNOWLEDGE

UNSW Engineering offers a two year **Master of Engineering** as an alternative to the Master of Engineering Science program. It is particularly suited to those wanting to enter the engineering profession or for currently practicing engineers who wish to expand their knowledge and skills and achieve accreditation with Engineers Australia.

The program is designed for students who have completed either of the following:

- A four year non-accredited (under the Washington Accord) Bachelor of Engineering degree or equivalent
- A three year Engineering Science degree, at least equivalent to the first three years of a relevant Engineering degree accredited under the Washington Accord.

The Master of Engineering is currently offered in the following:

- Civil Engineering*
- Electrical Engineering
- Environmental Engineering*
- Mechanical Engineering*
- Telecommunications.

Flexibility and choice, key parts of the two year program, are achieved through the wide choice of elective courses. No advanced standing will be granted for the Master of Engineering.

* Provisional accreditation of these programs is currently being sought with Engineers Australia.

SPECIALIST PROGRAMS

AREA OF STUDY	SPECIALIST PROGRAMS AVAILABLE
Biomedical Engineering	Master of Biomedical Engineering Graduate Diploma of Biomedical Engineering
Food Science and Technology	Master of Food Science Graduate Diploma of Food Science
IT and Computing	Master of Information Technology Graduate Diploma of Information Technology Graduate Certificate of Computing
Mining Engineering	Master of Mining Engineering <ul style="list-style-type: none">– in Mine Management– in Mine Geomechanics Graduate Diploma of Mining Engineering <ul style="list-style-type: none">– in Mine Management– in Mine Geomechanics Graduate Certificate of Mining Engineering Master of Mine Geotechnical Engineering <ul style="list-style-type: none">– in Coal Mine Strata Control– in Underground Mine Control Graduate Diploma of Mine Geotechnical Engineering <ul style="list-style-type: none">– in Coal Mine Strata Control– in Underground Mine Control Graduate Diploma of Mine Ventilation



AREAS OF STUDY

No matter whether you want to get ahead in your current field or are retraining and moving your career in a new direction, choosing to upgrade your qualifications is a big step. There are time and cost commitments to consider, and that's before you even decide what and where to study.

At UNSW Engineering we believe that choosing the right program for your needs is the number one priority. That's why we have tried to make the choice as easy as possible. We have presented our programs by area of study – so it is simple to navigate through and find the one that's just right for you.

WHERE WILL YOUR FUTURE TAKE YOU?

- Biomedical Engineering
- Chemical Engineering
- Civil Engineering
- Electrical Engineering
- Energy Systems
- Environmental Engineering
- Food Science and Technology
- Geospatial Engineering
- Geotechnical Engineering and Engineering Geology
- IT and Computing
- Manufacturing Engineering and Management
- Mechanical Engineering
- Mining Engineering
- Nuclear Engineering
- Petroleum Engineering
- Photovoltaics and Renewable Energy
- Project Management
- Satellite Systems Engineering
- Structural Engineering
- Telecommunications
- Transport Engineering
- Water Engineering: catchments to coast
- Water, Wastewater and Waste Engineering.

BIOMEDICAL ENGINEERING

Biomedical engineering is the application of engineering principles to developing technologies and solving problems in a diverse range of healthcare-related fields like implantable bionics, drug delivery systems, medical imaging, radiotherapies, orthopaedic devices, telemedicine, robotic surgery, cell and tissue engineering, records management, physical rehabilitation and much more. The Faculty of Engineering at UNSW offers advanced study programs for postgraduate students interested in biomedical engineering through both coursework and research.

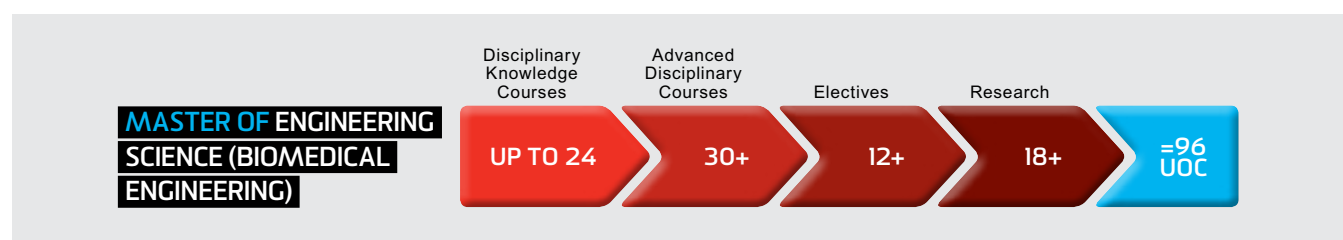
PROGRAM OPTIONS	PROGRAM CODE	UNITS OF CREDIT	DURATION*	COMMENCE
Master of Engineering Science (Biomedical Engineering)	BIOMBS8338	96	2 years	Feb, Jul
Master of Biomedical Engineering	8660	72	1.5 years	Feb, Jul
Graduate Diploma of Biomedical Engineering	5449	48	1 year	Feb, Jul

* 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.

MASTER OF ENGINEERING SCIENCE (BIOMEDICAL ENGINEERING)

This program is ideal for graduate engineers who wish to change direction in their careers. It provides a solid postgraduate coursework program for an engineering graduate to extend their knowledge into the field of biomedical engineering.

TYPICAL PROGRAM STRUCTURE



DISCIPLINARY AND FOUNDATIONAL COURSES

Students choose four Disciplinary Knowledge Courses from relevant disciplines such as Electrical, Chemical, and Mechanical Engineering on approval of the program authority. On approval, up to three Foundational Courses may also be taken to provide necessary background in anatomy and physiology.

ADVANCED DISCIPLINARY KNOWLEDGE COURSES

Students can select from a long list of courses including Medical Imaging, Cellular and Tissue Engineering and Implantable Bionics.

ELECTIVES

At least one course (6 UOC) must be taken from the approved list of Engineering and Technical Management Courses. The remainder can be chosen from Advanced Disciplinary Knowledge Courses from across the Master of Engineering Science program as long as the student is eligible to enroll.

RESEARCH

Students must complete a research component that gives them the opportunity to broaden their understanding of their chosen biomedical engineering topic through practical application with the close support of a practicing engineering researcher.

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

ENTRY REQUIREMENTS

A student must hold a Bachelor of Engineering with at least Honours II/2 (or equivalent) in a relevant discipline. Students can progress from the Graduate Diploma of Engineering Science into this program if they achieve an average of at least 65%.

EXEMPTIONS OR ADVANCED STANDING

Students may be granted credit for some courses. Those with a four year honours degree (for example in Chemical 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.

MASTER OF BIOMEDICAL ENGINEERING

The Biomedical Engineering program is designed for students with either a medical/biological science background or an engineering/physical science background who wish to further their education in the field of biomedical engineering. Qualified students can choose to enter at Masters level, but those who have less time (or who would like just a taste of postgraduate study) can begin with the Graduate Diploma.

TYPICAL PROGRAM STRUCTURE

Students with previous medical/biological science qualifications may take some foundation courses in mathematics, mechanics, electronics and computing. Students with a non-biosciences background may take foundation courses in physiology, anatomy, pathology or biochemistry.

Both groups of Masters students then choose from a common set of electives covering such areas as biomechanics, biomaterials, medical devices, regulatory requirements, signal and systems analysis. Additional electives include physiological systems and modelling, information systems, polymer chemistry and tissue engineering. Masters coursework degree candidates may also apply to include an optional research component.



ENTRY REQUIREMENTS

Masters: Students must have a four year Bachelor degree with at least honours II/2 in either engineering or a biomedical health-related discipline (medicine, physiology) or a graduate diploma in biomedical engineering.

Graduate Diploma: Students must have a minimum three year Bachelor degree from an approved university in a relevant discipline, such as engineering, medicine, medical sciences or health science. Students with a minimum average of 65% can progress from the Graduate Diploma into the Masters program.

STUDENT TESTIMONIAL

"With several years of work experience in prosthetics and orthotics, the next step for me was to gain some additional engineering knowledge through the Master of Biomedical Engineering at UNSW. Engineering knowledge, especially in areas such as biomechanics, implantable bionics, and mechanical properties of biomaterials, will equip me with a good understanding of how to improve the designs and function of the prosthetic and orthotic devices that I will be working on when I return to Namibia."

CHRISTOPHER MUBITA LIKANDO
MASTER OF BIOMEDICAL ENGINEERING

CHEMICAL PROCESS ENGINEERING

The Master of Engineering Science in Chemical Process Engineering is a program of advanced study especially for chemical engineers, allowing them to expand their knowledge and skills and increase career prospects. The program is also suited to other technical professionals who wish to redirect their engineering careers into this area. It teaches advanced technical and management skills and provides essential specialist knowledge in chemical engineering that is suitable across a wide range of areas including the fuel and energy sector, mineral processing, fine chemicals, pharmaceuticals, petrochemicals, consumer products, the food industry and more.

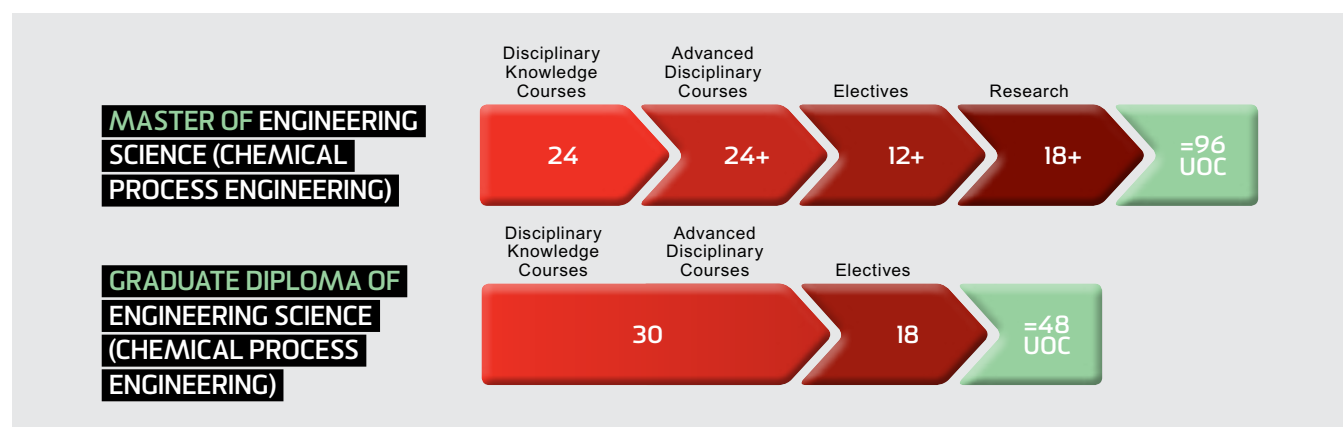
PROGRAM OPTIONS	PROGRAM CODE	UNITS OF CREDIT	DURATION*	COMMENCE
Master of Engineering Science (Chemical Process Engineering)	CEICJS8338	96	2 years	Feb, Jul
Graduate Diploma of Engineering Science (Chemical Process Engineering)	CEICMS5341	48	1 year	Feb, Jul

* Eligible students may apply for credit for up to eight courses (48 UOC) of Masters programs 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.

MASTER OF ENGINEERING SCIENCE (CHEMICAL PROCESS ENGINEERING)

This program looks at the efficient design, robust and objective analysis, and monitoring of chemical plants, processes and operations including extensive coverage of current business and environmental issues in the chemical and food industries. Qualified students can choose to enter at Masters level, but those who have less time (or who would like just a taste of postgraduate study) can begin with the Graduate Diploma.

TYPICAL PROGRAM STRUCTURE



DISCIPLINARY KNOWLEDGE COURSES

Students choose four Disciplinary Knowledge Courses from relevant disciplines such as Electrical, Chemical, and Mechanical Engineering on approval of the program authority. On approval, up to three foundational courses may also be taken to provide necessary background in anatomy and physiology.

ADVANCED DISCIPLINARY KNOWLEDGE COURSES

Masters students must take the following three courses (18 UOC) Advanced Process Control, Advanced Polymer Science and Research, Complex Fluid Microstructure and Rheology plus one extra course (6 UOC) from the Advanced Disciplinary Knowledge course list.

ELECTIVES

All students may choose electives from the list of Disciplinary or Advanced Disciplinary Knowledge courses or other approved courses for which they are qualified to enrol.

RESEARCH

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.

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: Your four year degree may also be in science. 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 Chemical 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.

HAVE YOU CONSIDERED?

- Master of Engineering Science in Food Process Engineering
- Graduate Diploma of Engineering Science in Food Process Engineering
- Master of Science in Food Science and Technology
- Graduate Diploma of Food Technology.

ACADEMIC IN FOCUS

Professor Rose Amal, leader of the Particle and Catalysis Group in the UNSW School of Chemical Engineering, was recently awarded \$2.38 million to develop technology to transform carbon dioxide into sustainable fuels, a process that could revolutionise the recycling of greenhouse gas.

Amal, the former director of the ARC Centre of Excellence for Functional Nanomaterials, is recognised as a pioneer and leading authority in the fields of fine particle technology, photocatalysis and functional nanomaterials.

Rose, who received her Bachelor of Chemical Engineering and PhD in Chemical Engineering from UNSW, has won many awards, including being named in Engineers Australia's top 100 most influential engineers.



SCIENTIA PROFESSOR
ROSE AMAL
SCHOOL OF CHEMICAL
ENGINEERING

CIVIL ENGINEERING

Civil Engineering is one of the oldest and largest fields of engineering – and as the most broadly based engineering discipline there are many options for specialisation. Postgraduate education in Civil Engineering is a smart way to give yourself an advantage. By honing your knowledge and skills in a specialist area you can advance your career in the direction of your choice.

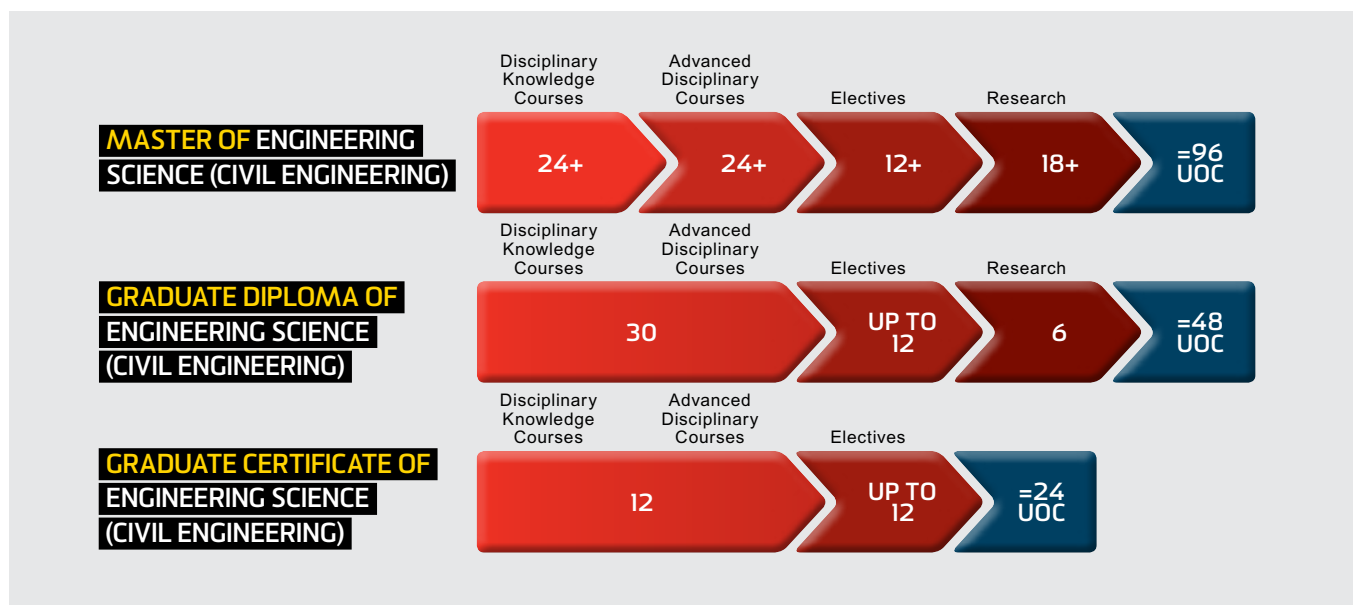
PROGRAM OPTIONS	PROGRAM CODE	UNITS OF CREDIT	DURATION*	COMMENCE
Master of Engineering Science (Civil Engineering)	CVENZS8338	96	2 years	Feb, Jul
Graduate Diploma of Engineering Science (Civil Engineering)	CVENAT5341	48	1 year	Feb, Jul
Graduate Certificate of Engineering Science (Civil Engineering)	CVENG7320	24	6 months	Feb, Jul
Master of Engineering (Civil Engineering)	CVENYS8621	96	2 years	Feb, Jul

* Eligible students may apply for credit for up to eight courses (48 UOC) of 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.

MASTER OF ENGINEERING SCIENCE (CIVIL ENGINEERING)

This broad and flexible program is designed to provide civil engineers with advanced study options across the range of civil engineering disciplines and allows the student to tailor their study in areas like project management, transport engineering, water and wastewater, surveying and construction management. Qualified students can choose to enter at Masters level, but those who have less time (or who would like just a taste of postgraduate study) can begin with the Graduate Diploma.

TYPICAL PROGRAM STRUCTURE



DISCIPLINARY KNOWLEDGE COURSES

To prepare students for the Advanced Disciplinary Knowledge Courses, they can select courses covering a wide range of subjects like project management, geotechnical engineering, structures, surveying, transport, and water and wastewater.

ADVANCED DISCIPLINARY KNOWLEDGE COURSES

These are the main courses that make up the chosen specialisation. As long as they are eligible to enrol, students may take courses from any postgraduate specialisation offered from the School of Civil and Environmental Engineering including project management, engineering geology, water and wastewater, transport, geotechnical engineering, environmental engineering and structural engineering.

ELECTIVES

At least one course (6 UOC) must be taken from the approved list of Engineering and Technical Management Courses. We recommend Engineering Economics and Financial Management, Design of Construction Operations, Project Management Framework, Environmental Management and Sustainability Assessment and Risk Analysis in Water and Energy Systems Planning. All other electives may be chosen across the faculty, as long as the student is eligible to enrol.

RESEARCH

Students who have not completed a four year degree which included a thesis must complete a 12 UOC Masters Thesis research component that gives them the opportunity to broaden their understanding of a topic that they are passionate about. The research will be supervised by an appropriate academic. All students must undertake GSOE9010 Engineering Postgraduate Coursework Research Essentials (6 UOC).

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

ENTRY REQUIREMENTS

Masters: You need a recognised four year Bachelor degree in an appropriate area of engineering with at least Honours II/2 or equivalent or an average mark of at least 65% over the final two years.

Graduate Diploma: You 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.

Graduate Certificate: You need a three year Bachelor degree in engineering or science with an average grade of at least 65% over the last two years. The Graduate Certificate is a pathway to the Graduate Diploma.

EXEMPTIONS OR ADVANCED STANDING

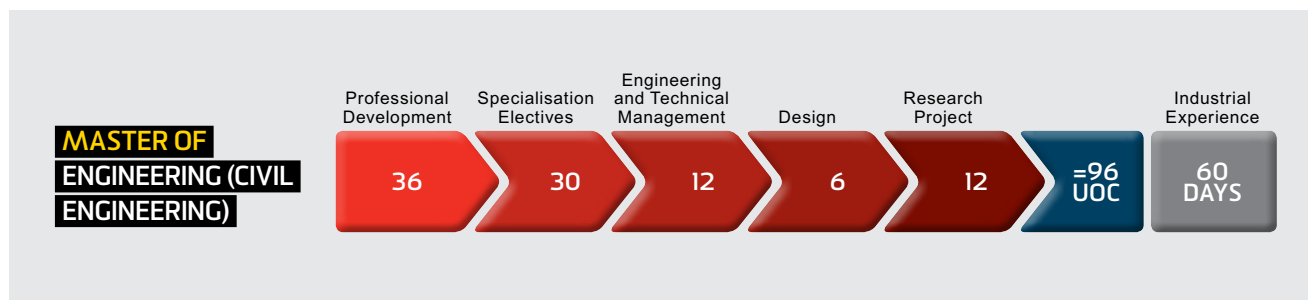
Students may be granted credit for some courses. Those with a four year honours degree (for example in Civil Engineering) can apply for credit for up to 48 UOC for the Masters (effectively reducing it to one year full time) or up to 24 UOC for the Graduate Diploma. Full details can be found on the program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

MASTER OF ENGINEERING (CIVIL ENGINEERING)

This two year Master of Engineering degree is especially designed for students who wish to increase their knowledge and skills in civil engineering but who may not qualify for entry to the Master of Engineering Science. Flexibility and choice are maintained throughout the program as many elective courses are offered. Students can specialise and gain depth of knowledge across a broad range of areas including project management, transport engineering, geotechnical engineering, water resources, waste and wastewater treatment.

TYPICAL PROGRAM STRUCTURE

The Master of Engineering degree requires students to complete at least 96 UOC including professional development courses in engineering management, analysis and design and engineering and the environment plus more in-depth civil engineering specialisation including project management and engineering management courses. A compulsory design course and research project plus 60 days of industrial experience mean students have a firm grasp of all aspects of civil engineering upon graduation.



ENTRY REQUIREMENTS

Entry is open to students with a four year non-accredited (under the Washington Accord) Bachelor of Engineering degree or equivalent. Alternatively, eligible applicants include those who hold a three year Engineering Science degree, at least equivalent to the first three years of a relevant Engineering degree accredited under the Washington Accord.

PROFESSIONAL RECOGNITION

The Master of Engineering in Civil Engineering is currently awaiting provisional professional accreditation by Engineers Australia.

HAVE YOU CONSIDERED?

We offer related Postgraduate Programs in Project Management, Transport Engineering, Water Engineering: catchments to coast, and Water, Wastewater and Waste Engineering. We also offer programs in Solar and Renewable Energy.

ELECTRICAL ENGINEERING

The School of Electrical Engineering and Telecommunications offers challenging programs that provide students with an outstanding set of analytical and problem-solving skills, as well as management strategies, which they can apply right across the industry. Our focus on flexible teaching delivery modes, such as open online lectures, incorporates educational technology developed at the School.

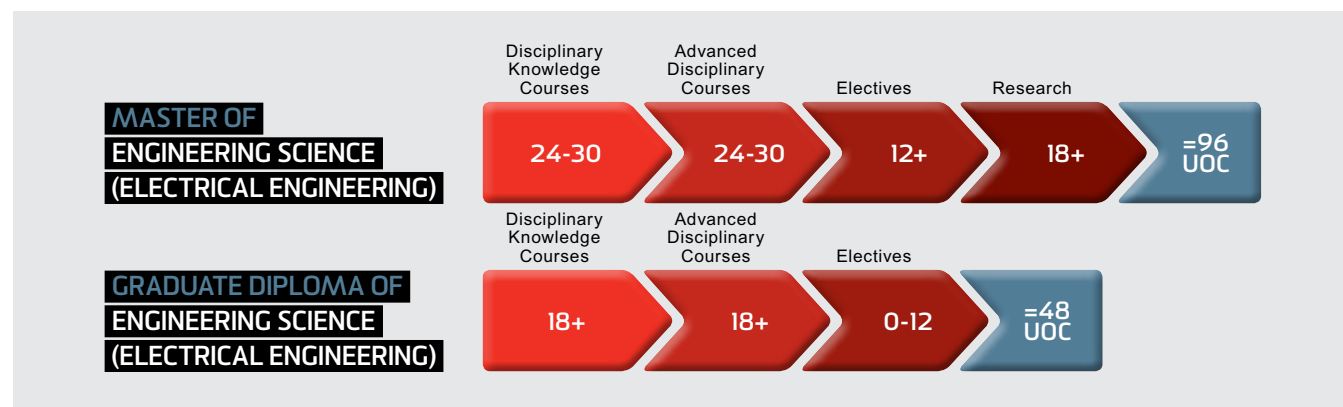
PROGRAM OPTIONS	PROGRAM CODE	UNITS OF CREDIT	DURATION*	COMMENCE
Master of Engineering Science (Electrical Engineering)	ELECBS8338	96	2 years	Feb, Jul
Master of Engineering Science (Systems and Control)	ELECP8338	96	2 years	Feb, Jul
Master of Engineering in Electrical Engineering	ELECAS8621	96	2 years	Feb, Jul
Graduate Diploma of Engineering Science (Electrical Engineering)	ELECQS5341	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.

MASTER OF ENGINEERING SCIENCE (ELECTRICAL ENGINEERING OR SYSTEMS AND CONTROL)

The Master of Engineering Science program provides a solid avenue for electrical engineers wishing to upgrade their skills or further their knowledge. There are two specialisations according to the electives chosen. Electrical Engineering allows students the option of a good depth of knowledge in one sub-discipline or a multidisciplinary approach. Systems and Control offers a broad range of theoretical and applications-based electives, including robust linear control, non-linear control systems, real-time computing and control, and computer vision. Qualified students can choose to enter at Masters level, but those who have less time (or who would like just a taste of postgraduate study) can begin with the Graduate Diploma (Electrical Engineering only).

TYPICAL PROGRAM STRUCTURE



DISCIPLINARY KNOWLEDGE COURSES

Students can select from a list of courses covering a wide range of subjects like Microelectronics, Energy Systems, Signal Processing, Control Systems, and Telecommunications.

Systems and Control students need to study three core courses: Continuous-Time Control System Design, Computer Control Systems, and Real-Time Engineering plus one or two further subjects from a list from Digital and Embedded Systems Design to Mobile and Satellite Communications Systems and plenty in between.

ADVANCED DISCIPLINARY KNOWLEDGE COURSES

Students may select courses from an extensive list including everything from Quantum Devices to High Voltage Systems and Speech Processing. Systems and Control students need to study three core courses: Robust and Linear Control Systems, Analysis and Design of Non-linear Systems, Real Computing and Control plus one or two further subjects from a list including topics from Computer Vision to Artificial Intelligence.

ELECTIVES

At least one course (6 UOC) must be taken from the approved list of Engineering and Technical Management Courses. All other electives may be chosen 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.

RESEARCH

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.

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

ENTRY REQUIREMENTS

Masters: You need a recognised four year Bachelor degree in an appropriate area of engineering with at least Honours II/2 or equivalent or an average mark of at least 65% over the final two years. Relevant disciplines considered for entry include electrical engineering, as well as electrical engineering (for Systems and Control, or Mechatronic Engineering including Control Systems).

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

EXEMPTIONS OR ADVANCED STANDING

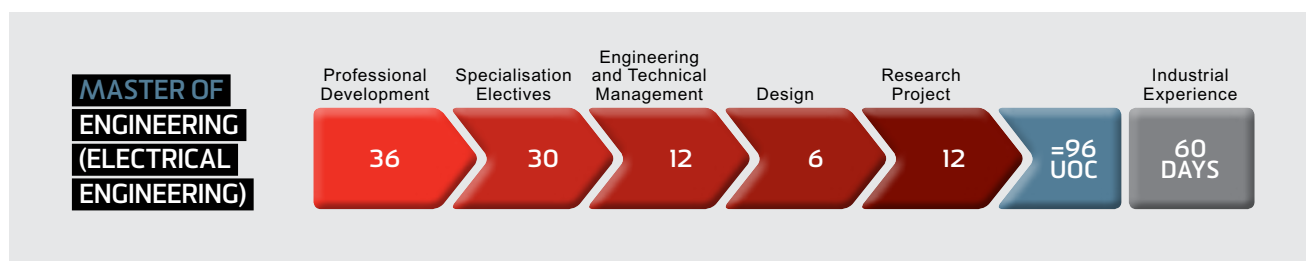
Students may be granted credit for some courses. Those with a four year honours degree (for example in Electrical Engineering) can apply for credit for up to 48 UOC for the Masters (effectively reducing it to one year full time) or up to 24 UOC for the Graduate Diploma. Full details can be found on the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

MASTER OF ENGINEERING (ELECTRICAL ENGINEERING)

This two year Masters degree provides a perfect avenue for those wanting to enter the engineering profession or for currently practicing engineers who wish to expand their knowledge and skills in engineering management, acquire an in-depth knowledge of a particular discipline, gain technical confidence, or simply meet the continuing professional development standards. It is designed as a pathway into professional engineering for students with degrees from non-accredited institutions or those with degrees at least equivalent to the first three years of a relevant accredited degree in Engineering (see more below in Entry Requirements). The specialisation is fully accredited by Engineers Australia.

TYPICAL PROGRAM STRUCTURE

The Masters degree requires students to complete at least 96 UOC (including professional development courses in microelectronics, energy systems, signal processing, or control systems plus more in-depth electrical engineering specialisation and engineering management courses. A compulsory design course and research project plus 60 days of industrial experience mean students have a firm grasp of all aspects of electrical engineering upon graduation.



ENTRY REQUIREMENTS

Students require a four year non-accredited (under the Washington Accord) Bachelor of Engineering degree or equivalent. Alternatively, eligible applicants include those who hold a three year Engineering Science degree, at least equivalent to the first three years of a relevant Engineering degree accredited under the Washington Accord.

PROFESSIONAL RECOGNITION

The two year Master of Engineering in Electrical Engineering is professionally accredited by Engineers Australia.

HAVE YOU CONSIDERED?

Engineering programs in Energy Systems or Renewable Energy.

ENERGY SYSTEMS

Energy systems engineering is currently undergoing a huge renaissance due to the introduction of smart grids (intelligent power supply systems), the growing need to interface renewable energy generation sources with the conventional electricity grid, and the increasing use of electric motors in everything from smartphones to hybrid cars to satellites.

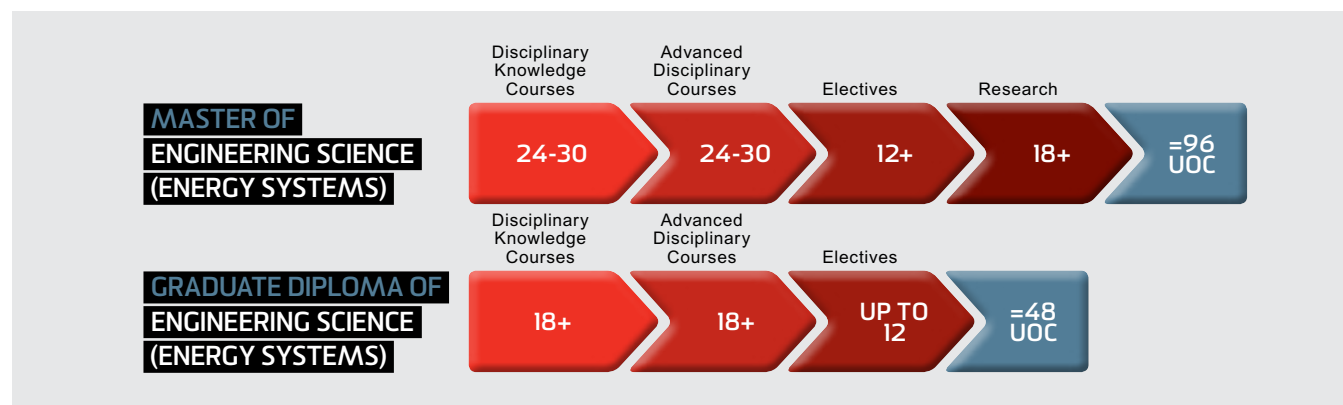
PROGRAM OPTIONS	PROGRAM CODE	UNITS OF CREDIT	DURATION*	COMMENCE
Master of Engineering Science (Energy Systems)	ELECIS8338	96	2 years	Feb, Jul
Graduate Diploma of Engineering Science (Energy Systems)	ELECRS5341	48	1 years	Feb, Jul

* Eligible students may apply for credit for up to eight courses (48 UOC) of Masters programs 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.

MASTER OF ENGINEERING SCIENCE (ENERGY SYSTEMS)

This program offers a broad range of theoretical and applications-based electives – including smart-grids, power electronics for renewable energy engineering, power system analysis and protection, high voltage engineering, power systems planning and economics, and electrical safety. Such a wide choice allows students to gain a deep, broad knowledge across several areas. It is a great avenue for electrical engineers wishing to upgrade their skills or further their knowledge. As well as the Masters program, students can opt for a Graduate Diploma if they don't qualify for entry or if they would like a taste of postgraduate education.

TYPICAL PROGRAM STRUCTURE



DISCIPLINARY KNOWLEDGE COURSES

Students select four or five subjects from an extensive list from Electrical Drive Systems to Advanced Digital Signal Processing and Optical Circuits and Fibres and many more.

ADVANCED DISCIPLINARY KNOWLEDGE COURSES

Students also need to select four or five courses from a list that includes High Voltage Systems, Electricity Industry Planning and Smart Grids and Distribution Networks plus more.

ELECTIVES

Electives can be taken from the approved list of Engineering and Technical Management Courses or 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.

RESEARCH

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.

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

ENTRY REQUIREMENTS

Masters: You need a recognised four year Bachelor degree in an appropriate area of engineering with at least Honours II/2 or equivalent or at least an average mark of at least 65% over the final two years. Relevant disciplines considered for entry include electrical engineering, as well as photovoltaic and renewable energy engineering where a sound foundation in electrical energy systems is provided.

Graduate Diploma: You 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 Electrical Engineering) can apply for credit for up to 48 UOC for the Masters (effectively reducing it to one year full time) or up to 24 UOC for the Graduate Diploma. Full details can be found on the program handbook page.

HAVE YOU CONSIDERED?

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



ENVIRONMENTAL ENGINEERING

Environmental engineering is concerned with safe, ecological, sustainable and ethical development of urban infrastructure. If you would like to explore options to help move your engineering career in the direction of environmental engineering or if you would like to gain formal qualifications, a postgraduate coursework program from the Faculty of Engineering at UNSW is an ideal way to deepen your knowledge and hone your skills.

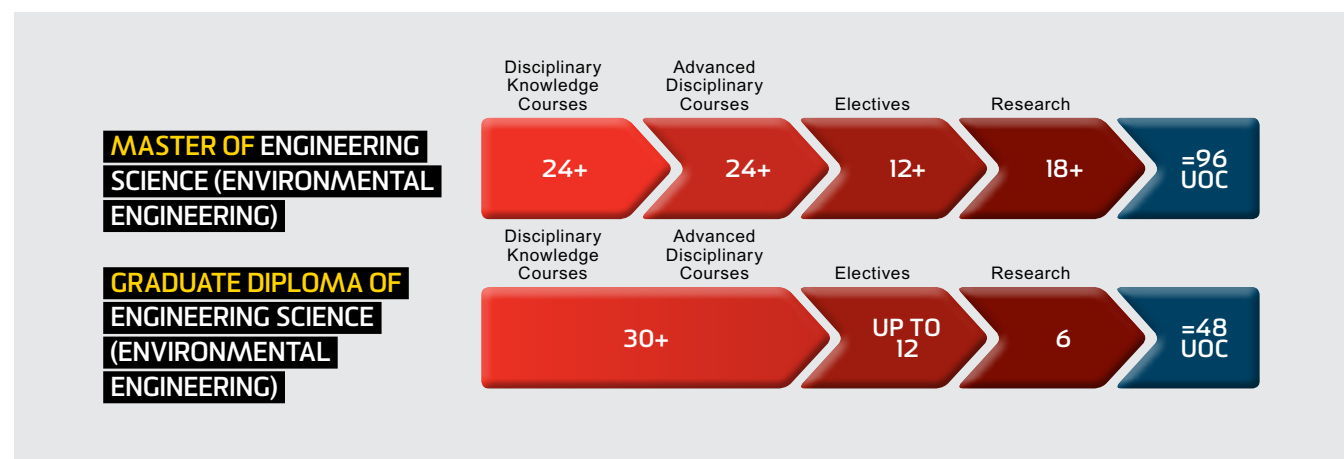
PROGRAM OPTIONS	PROGRAM CODE	UNITS OF CREDIT	DURATION*	COMMENCE
Master of Engineering Science (Environmental Engineering)	CVENMT8338	96	2 years	Feb, Jul
Graduate Diploma of Engineering Science (Environmental Engineering)	CVENDT5341	48	1 year	Feb, Jul
Master of Engineering (Environmental Engineering)	CVENLT8621	96	2 years	Feb, Jul

* Eligible students may apply for credit for up to eight courses (48 UOC) of 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.

MASTER OF ENGINEERING SCIENCE (ENVIRONMENTAL ENGINEERING)

The Master of Engineering Science provides students with advanced study options in environmental engineering. Designed specifically to develop skills in analysis and design of sustainable urban infrastructure, this program is ideally suited for both practising engineers and recent graduates planning a career in environmental engineering. As well as the Masters program, students can opt for a Graduate Diploma if they don't qualify for entry or if they would like a taste of postgraduate education.

TYPICAL PROGRAM STRUCTURE



DISCIPLINARY KNOWLEDGE COURSES

Students who are moving from a different discipline, or have not completed appropriate undergraduate courses, will be advised to take suitable courses (Disciplinary Knowledge) so they are prepared for the Advanced Disciplinary Knowledge Courses – these may range from Operations and Projects to Sustainability in Construction and Contaminated Site Engineering.

ADVANCED DISCIPLINARY KNOWLEDGE COURSES

Courses can be chosen from a list that includes Environmental Management, Sustainability Assessment, Environmental Engineering Science and many more.

ELECTIVES

Electives can be taken from the approved list of Engineering and Technical Management Courses, but we recommend Engineering Economics and Financial Management and Project Management Framework.

Electives 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. Popular electives include Solid Waste Management, Hazardous Waste Management, Water and Wastewater Analysis, Urban Transport Planning Practice, and Waves and Beaches.

RESEARCH

Students who have not completed a four year degree which included a thesis must complete a 12 UOC Masters Thesis research component that gives them the opportunity to broaden their understanding of a topic that they are passionate about. The research will be supervised by an appropriate academic. All students must undertake GSOE9010 Engineering Postgraduate Coursework Research Essentials (6 UOC).

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

ENTRY REQUIREMENTS

Masters: You need a recognised four year Bachelor degree in an appropriate area of engineering with at least Honours II/2 or equivalent or an average mark of at least 65% over the final two years.

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

EXEMPTIONS OR ADVANCED STANDING

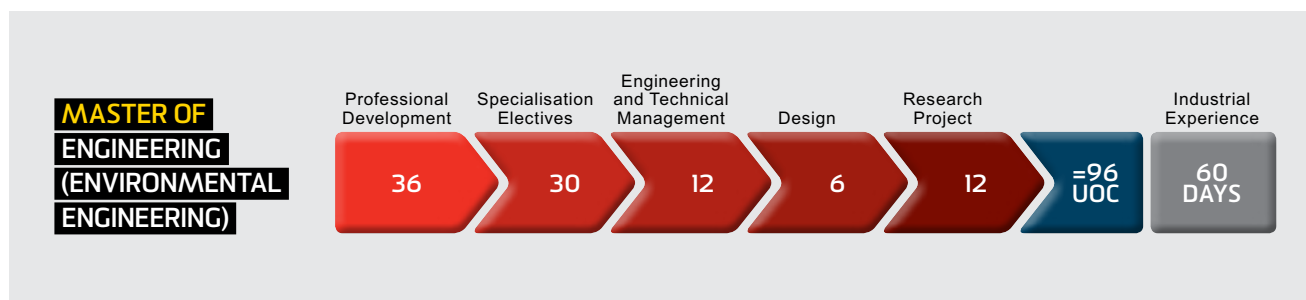
Students may be granted credit for some courses. Those with a four year honours degree (for example in Civil Engineering) can apply for credit for up to 48 UOC for the Masters (effectively reducing it to one year full time). Full details can be found on the program handbook page.

MASTER OF ENGINEERING (ENVIRONMENTAL ENGINEERING)

This two year Masters degree is especially designed for students who wish to increase their knowledge and skills in environmental engineering but who may not qualify for entry to the Master of Engineering Science. Flexibility and choice are maintained throughout the program as many elective courses are offered. Students can specialise and gain depth of knowledge across a broad range of areas including project management, transport engineering, geotechnical engineering, water resources, waste and wastewater treatment. The program is awaiting provisional professional accreditation through Engineers Australia and is the perfect entry point for those who wish to move into the environmental engineering profession.

TYPICAL PROGRAM STRUCTURE

The Masters degree requires students to complete at least 96 UOC including professional development courses in engineering management, analysis and design and engineering and the environment plus more in-depth environmental engineering specialisation and engineering management courses. A compulsory design course and research project plus 60 days of industrial experience mean students will have a firm grasp of all aspects of environmental engineering upon graduation.



ENTRY REQUIREMENTS

Entry is open to students with a four year non-accredited (under the Washington Accord) Bachelor of Engineering degree or equivalent. Alternatively, eligible applicants include those who hold a three year Engineering Science degree, at least equivalent to the first three years of a relevant Engineering degree accredited under the Washington Accord.

PROFESSIONAL RECOGNITION

The Master of Engineering in Environmental Engineering is currently awaiting provisional professional accreditation by Engineers Australia.

HAVE YOU CONSIDERED?

We offer related Postgraduate Programs in Project Management, Transport Engineering, Water Engineering: catchments to coast, and Water, Wastewater and Waste Engineering. We also offer programs in Solar and Renewable Energy.

FOOD SCIENCE AND TECHNOLOGY

If you are looking at increasing your knowledge in Food Science and Technology, then turn to UNSW Engineering's School of Chemical Engineering. Our advanced study options in Food Science and Technology provide a deeper understanding of the industry, strategies and tools to increase efficiency and performance, and the opportunity to learn alongside like-minded industry professionals. Whether you are coming at the industry from an engineering perspective, or from a science background, our programs can be tailored to suit you and boost your future prospects.

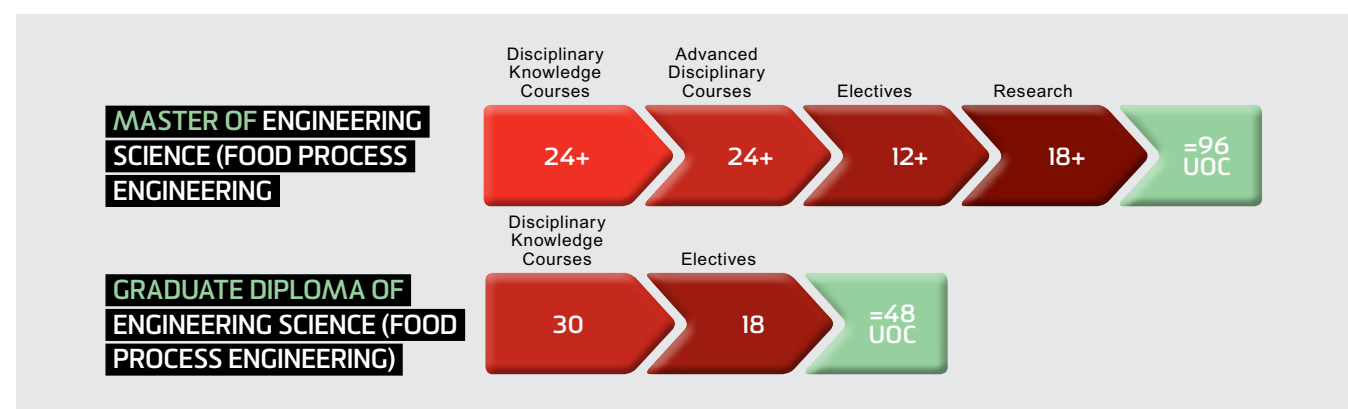
PROGRAM OPTIONS	PROGRAM CODE	UNITS OF CREDIT	DURATION*	COMMENCE
Master of Engineering Science (Food Process Engineering)	FOODNS8338	96	2 years	Feb, Jul
Graduate Diploma of Engineering Science (Food Process Engineering)	FOODOS5341	48	1 year	Feb, Jul
Master of Food Science	8037	96	2 years	Feb, Jul
Graduate Diploma of Food Science	5037	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.

MASTER OF ENGINEERING SCIENCE (FOOD PROCESS ENGINEERING)

This program is designed for engineers who want to specialise in the area of food science. It provides a thorough study of factors affecting the science, processes, operation technology and engineering of foods, and the life cycle of plants. Students also study issues that affect business decisions encountered in the food industry including a focus on efficient design and robust, objective analysis. It can also provide a solid postgraduate coursework program for the professional food scientist wishing to upgrade their skills or extend their knowledge. As well as the Masters program, students can opt for a Graduate Diploma if they don't qualify for entry or if they would like a taste of postgraduate education.

TYPICAL PROGRAM STRUCTURE



DISCIPLINARY KNOWLEDGE COURSES

Courses on offer range in diversity from Advanced Food Engineering to Nutrition and plenty in between.

ADVANCED DISCIPLINARY KNOWLEDGE COURSES

Masters students should take Advanced Process Control, Advanced Processing Technologies, and Complex Fluid Microstructure and Rheology plus one further course from a long list of advanced topics in engineering and management.

ELECTIVES

Electives can be taken from the approved list of Engineering and Technical Management Courses or 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. Up to two subjects (12 UOC) of foundation knowledge courses may also be taken.

RESEARCH

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.

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

ENTRY REQUIREMENTS

Masters: You need a Bachelor of Engineering in Chemical Engineering or Food Process Engineering with at least Honours II/2 or equivalent or hold a Graduate Diploma in Food Process Engineering with at least 65% average mark.

Graduate Diploma: You 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.

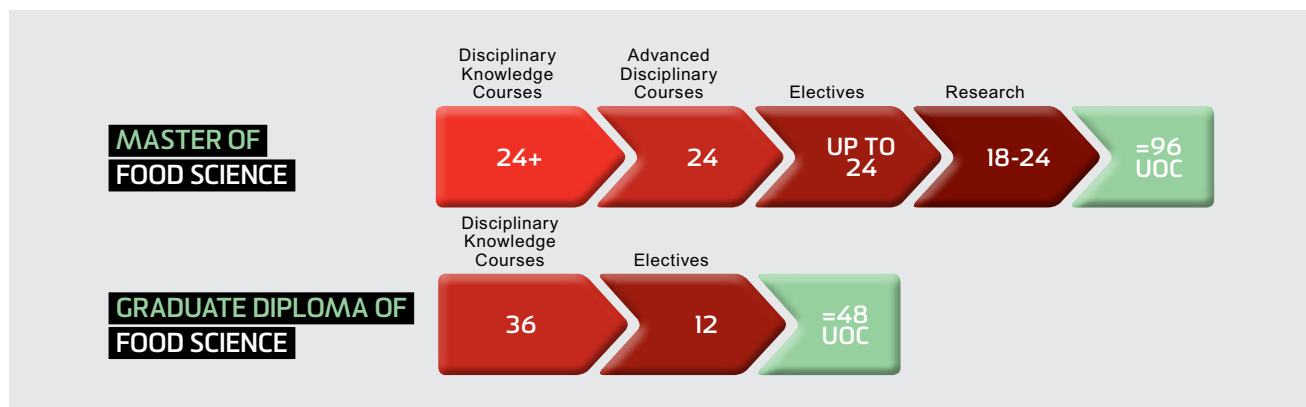
EXEMPTIONS OR ADVANCED STANDING

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

MASTER OF FOOD SCIENCE

The Food Science program is designed for those with a science background who wish to deepen their knowledge in the food science area. It's also designed for engineers who want to move into food science from a more science-based perspective. Students will gain a thorough understanding of theoretical aspects of the science, technology and engineering of foods, and have the opportunity to undertake an extensive research project. As well as the Masters program, students can opt for a Graduate Diploma if they don't qualify for entry or if they would like a taste of postgraduate education.

TYPICAL PROGRAM STRUCTURE



DISCIPLINARY KNOWLEDGE COURSES

Students need to choose four courses from a long list that includes from Advanced and Applied Nutrition to Food Microbiology, Food Preservation, and Product Design and Development.

ADVANCED DISCIPLINARY KNOWLEDGE COURSES

Students are required to take Advanced Processing Technologies, Complex Fluid Microstructure and Rheology, Sensory Analysis of Foods and Advanced Food Microbiology.

ELECTIVES

Students may choose any courses as electives as long as they are eligible to enroll. This could include any of the Disciplinary or Advanced Disciplinary Knowledge Courses on the list for this program. Suggested electives include Engineering Statistics and Experimental Design, Ethics and Leadership in Engineering and Economic Decision Analysis in Engineering.

RESEARCH

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.

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

ENTRY REQUIREMENTS

Masters: Students must hold either a Bachelor degree in Food Science with at least Honours II/2 (or equivalent), or a Graduate Diploma in Food Science from UNSW, or an equivalent qualification from another recognised university or tertiary institution.

Graduate Diploma: Students must hold a Bachelor degree in Food Science with an average mark of at least 65%, or an equivalent qualification from a recognised university or tertiary institution.

GEOSPATIAL ENGINEERING

The Geospatial Engineering program at UNSW Engineering provides advanced training to help you advance your career in your chosen field. Students will improve their analytical, problem-solving and communications skills, and develop capacities for teamwork and management plus undertake a compulsory research project that provides a greater practical experience in an area that they are passionate about.

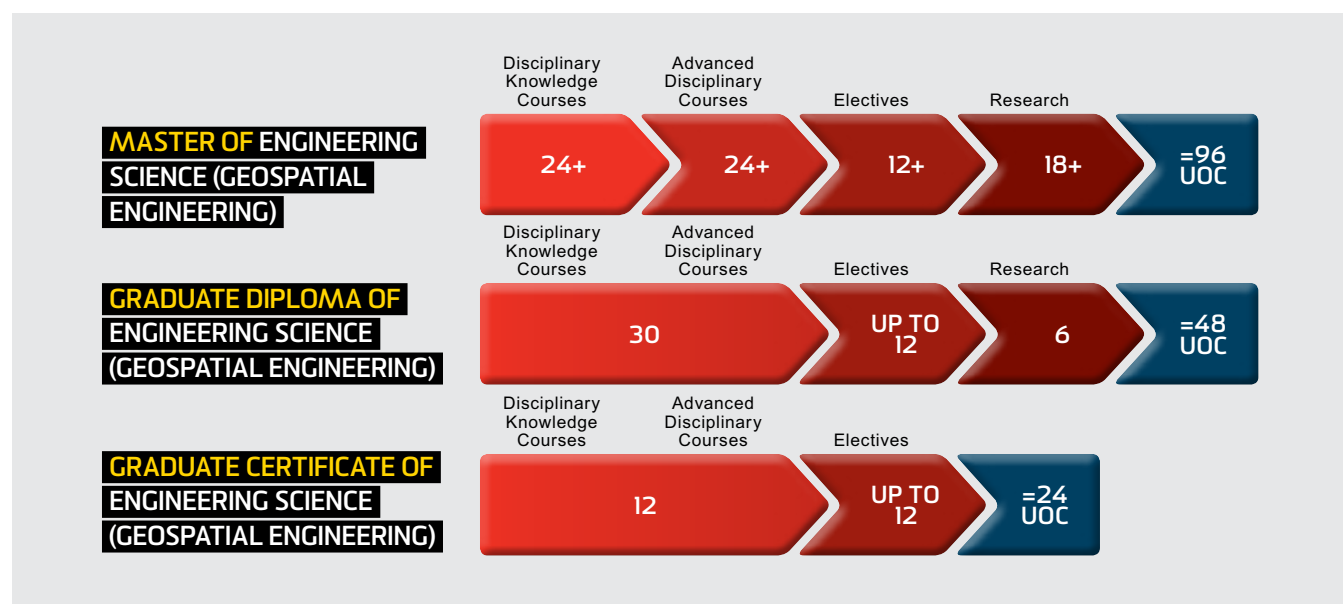
PROGRAM OPTIONS	PROGRAM CODE	UNITS OF CREDIT	DURATION*	COMMENCE
Master of Engineering Science (Geospatial Engineering)	CVENNT8338	96	2 years	Feb, Jul
Graduate Diploma of Engineering Science (Geospatial Engineering)	CVENPT5341	48	1 year	Feb, Jul
Graduate Certificate of Engineering Science (Geospatial Engineering)	CVENOT7320	24	6 months	Feb, Jul

* Eligible students may apply for credit for up to eight courses (48 UOC) of 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.

MASTER OF ENGINEERING SCIENCE (GEOSPATIAL ENGINEERING)

This specialisation provides students with advanced study options across a range of topics in geospatial engineering, including advanced surveying, modern geodesy and geopositioning, GPS/GNSS technology, geospatial image analysis, Geographic Information Systems (GIS), and remote sensing. The program provides sufficient knowledge about the science and practice of geospatial engineering which should be required for students moving to industry or staying in the graduate program pursuing their PhD studies. As well as the Masters program, students can opt for a shorter program if they don't qualify for entry or if they would like a taste of postgraduate education.

TYPICAL PROGRAM STRUCTURE



DISCIPLINARY KNOWLEDGE COURSES

Students who are moving from a different discipline, or have not completed appropriate undergraduate courses, will be advised to take suitable courses (Disciplinary Knowledge) so they are prepared for the Advanced Disciplinary Knowledge Courses. These may include Geospatial Information Science, Problem Solving for Engineers and Precise GPS Positioning and many more.

ADVANCED DISCIPLINARY KNOWLEDGE COURSES

These include Fundamentals of Geopositioning and Remote Sensing plus choose from a range of other areas like Modern Geodesy and Applications and Aerial and Satellite Imaging Systems.

ELECTIVES

At least one course (6 UOC) must be taken from the approved list of Engineering and Technical Management Courses. The following are recommended: Engineering Economics and Financial Management, Project Management Framework, Environmental Management. All other electives may be chosen across the faculty, as long as the student is eligible to enrol.

RESEARCH

Students who have not completed a four year degree which included a thesis must complete a 12 UOC Masters Thesis research component that gives them the opportunity to broaden their understanding of a topic that they are passionate about. The research will be supervised by an appropriate academic. All students must undertake GSOE9010 Engineering Postgraduate Coursework Research Essentials (6 UOC).

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

ENTRY REQUIREMENTS

Masters: You need a recognised four year Bachelor degree in an appropriate area of engineering with at least Honours II/2 or equivalent or an average mark of at least 65% over the final two years.

Graduate Diploma: You 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.

Graduate Certificate: You need a three year Bachelor degree in engineering or science with an average grade of at least 65% over the last two years. The Graduate Certificate is a pathway to the Graduate Diploma.

EXEMPTIONS OR ADVANCED STANDING

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

HAVE YOU CONSIDERED?

We offer Postgraduate Programs in Geotechnical Engineering and Engineering Geology, Civil Engineering, Project Management, Environmental Engineering, Structural Engineering, Transport Engineering, Water Engineering: catchments to coast, and Water, Wastewater and Waste Engineering.

GEOSPATIAL ENGINEERING FACILITIES

There are a number of specific Surveying and Geospatial Engineering facilities within the Satellite Navigation and Positioning (SNAP) Lab including:

- State-of-the-art computing facilities essential to this IT-intensive discipline
- A wide variety of GPS/GNSS equipment for tracking GPS, Glonass, Galileo, QZSS and Beidou
- Leica C5 Laser scanner and software
- Sensefly Swinglet Unmanned Aerial Vehicle and software
- Spirent GSS6560 GPS RF signal simulator with INS upgrade
- Two GPS software receivers: the DataFusion Matlab receiver, and the NordNav R30
- Several Altera FPGA development systems
- Several GPS Software Development Kits, inertial navigation sensors, pseudolites, wireless comms and UHF radio equipment, and a range of ancillary equipment to support research into GPS and other wireless location technologies
- A range of GPS software systems (many developed in-house) as well as the GAMIT and Bernese software packages
- Software for SAR and InSAR data processing (some developed in-house) as well as the APP and EV InSAR (Atlantis, Canada), PuISAR (Phoenix Systems, UK), ROI-PAC (JPL, USA) and DORIS (Delft University of Technology, Netherlands)
- Software packages to aid teaching and research for field-to-finish surveying systems: Leica Geomatics Office, GEOCOMP, CIVILCAD and AUTOCAD
- Other software support such as MATLAB, RTK-Lib and others.



GEOTECHNICAL ENGINEERING AND ENGINEERING GEOLOGY

At UNSW Engineering we offer a comprehensive program in Geotechnical Engineering and Engineering Geology. If you are seeking ways to expand your career options in this industry or would like to move your existing engineering career in a new direction, the Master of Engineering Science is the perfect way to acquire the skills and knowledge you need.

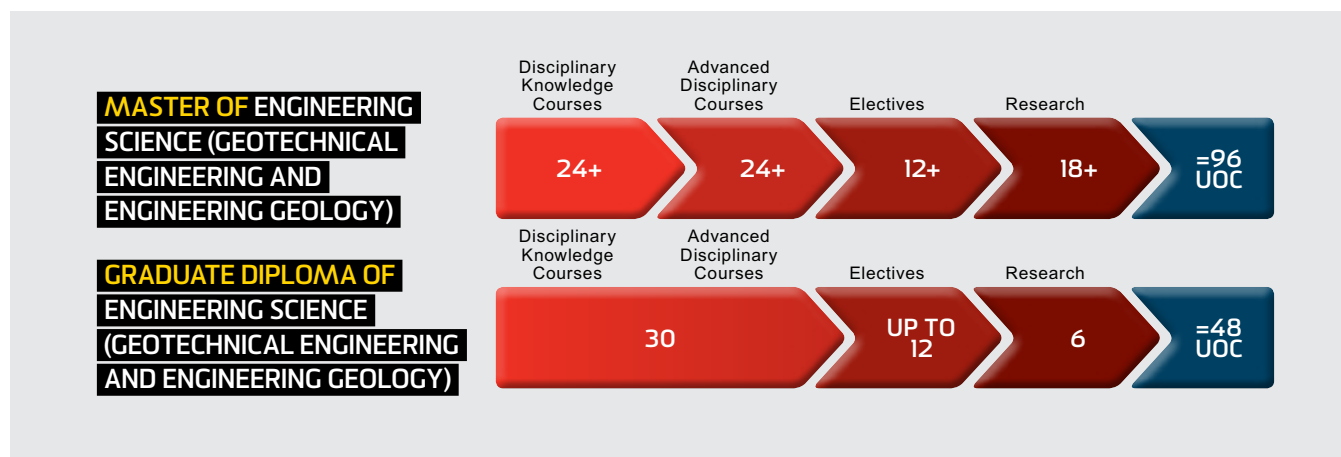
PROGRAM OPTIONS	PROGRAM CODE	UNITS OF CREDIT	DURATION*	COMMENCE
Master of Engineering Science (Geotechnical Engineering and Engineering Geology)	CVENRT8338	96	2 years	Feb, Jul
Graduate Diploma of Engineering Science (Geotechnical Engineering and Engineering Geology)	CVENST5341	48	1 year	Feb, Jul

* Eligible students may apply for credit for up to eight courses (48 UOC) of Masters programs 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.

MASTER OF ENGINEERING SCIENCE (GEOTECHNICAL ENGINEERING AND ENGINEERING GEOLOGY)

This specialisation provides students with advanced study options in geotechnical engineering and engineering geology. It has been developed for practitioners to enhance and deepen their practical and theoretical knowledge. Courses are taught by academic and industry experts usually with a one-week only attendance requirement at UNSW campus for each course. As well as the Masters program, students can opt for a Graduate Diploma if they don't qualify for entry or if they would like a taste of postgraduate education.

TYPICAL PROGRAM STRUCTURE



DISCIPLINARY KNOWLEDGE COURSES

Students who are moving from a different discipline, or have not completed appropriate undergraduate courses, will be advised to take suitable courses (Disciplinary Knowledge) so they are prepared for the Advanced Disciplinary Knowledge Courses. Courses may be chosen from a wide range of topics from Rock and Slope Engineering to Ground Improvement and Monitoring Techniques and Structural Dynamics. Those who have a limited background in geomechanics should choose Fundamentals of Geomechanics.

ADVANCED DISCIPLINARY KNOWLEDGE COURSES

These may be chosen from a broad list of topics including Geotechnical Models, Slope Instability and Geotechnical Engineering of Dams.

ELECTIVES

At least one course (6 UOC) must be taken from the approved list of Engineering and Technical Management Courses. We recommend Engineering Economics and Financial Management, Project Management Framework, Environmental Management and Sustainability Assessment and Risk Analysis in Water and Energy Systems Planning. All other electives may be chosen to compliment the student's interests, and are available in areas from project and construction management to transport engineering and structures, as long as the student is eligible to enrol.

RESEARCH

Students who have not completed a four year degree which included a thesis must complete a 12 UOC Masters Thesis research component that gives them the opportunity to broaden their understanding of a topic that they are passionate about. The research will be supervised by an appropriate academic. All students must undertake GSOE9010 Engineering Postgraduate Coursework Research Essentials (6 UOC).

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

ENTRY REQUIREMENTS

Masters: You need a recognised four year Bachelor degree in an appropriate area of engineering with at least Honours II/2 or equivalent or an average mark of at least 65% over the final two years.

Graduate Diploma: You 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 Civil Engineering) can apply for credit for up to 48 UOC for the Masters (effectively reducing it to one year full time) or up to 24 UOC for the Graduate Diploma. Full details can be found on the program handbook page.

HAVE YOU CONSIDERED?

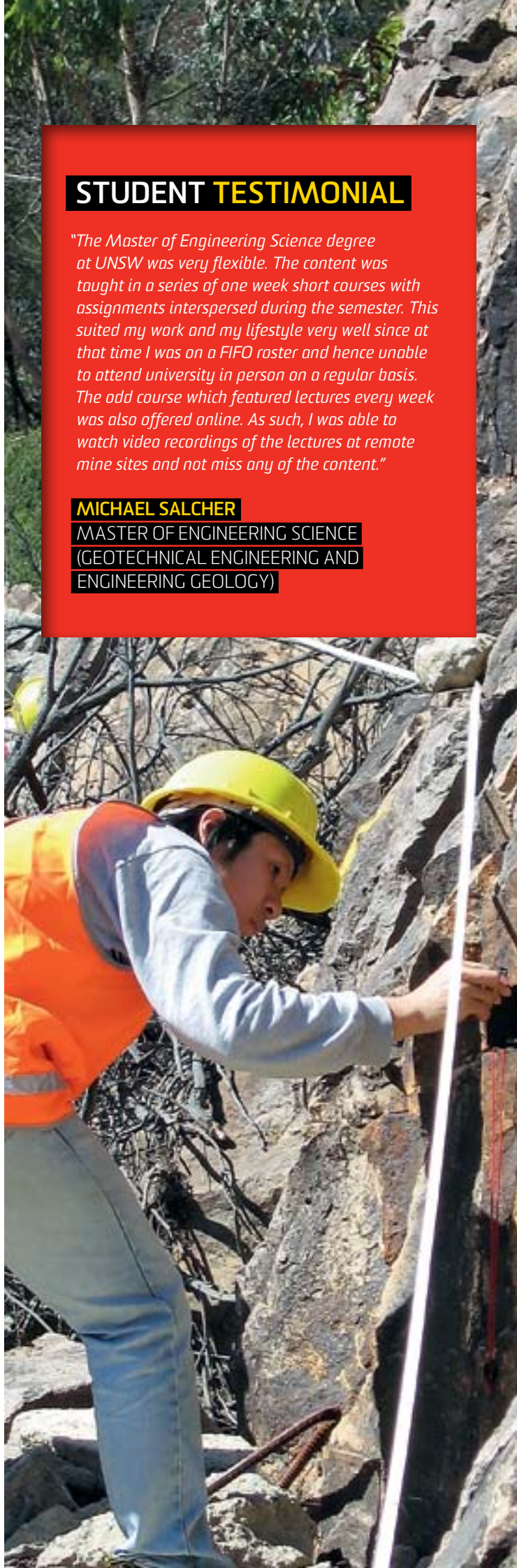
We offer Postgraduate Programs in Geoinformation Technology, Civil Engineering, Project Management, and Structural Engineering and more.

STUDENT TESTIMONIAL

"The Master of Engineering Science degree at UNSW was very flexible. The content was taught in a series of one week short courses with assignments interspersed during the semester. This suited my work and my lifestyle very well since at that time I was on a FIFO roster and hence unable to attend university in person on a regular basis. The odd course which featured lectures every week was also offered online. As such, I was able to watch video recordings of the lectures at remote mine sites and not miss any of the content."

MICHAEL SALCHER

**MASTER OF ENGINEERING SCIENCE
(GEOTECHNICAL ENGINEERING AND
ENGINEERING GEOLOGY)**



IT AND COMPUTING

The School of Computer Science and Engineering at UNSW Australia is one of the largest computer engineering schools and finest of its kind in Australasia. We offer fantastic opportunities for postgraduate study through our Master of Information Technology, plus shorter programs for those who want something a bit lighter or don't have the qualifications necessary to apply for a Masters. Postgraduate education in IT is a smart way to specialise in a particular area – the only complexity is deciding exactly where you want to direct your career.

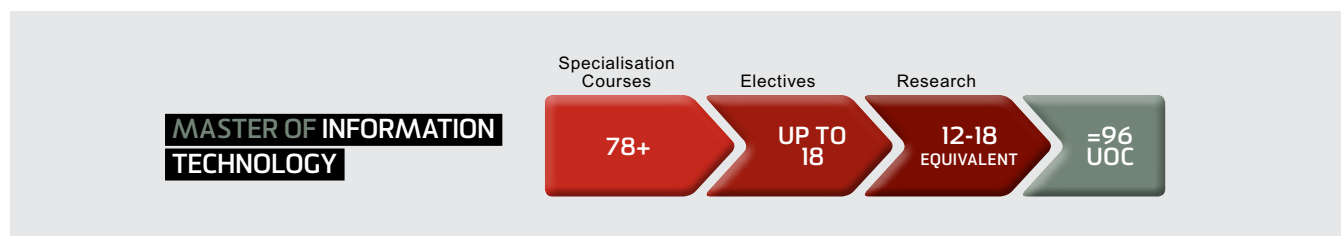
PROGRAM OPTIONS	PROGRAM CODE	UNITS OF CREDIT	DURATION	COMMENCE
Master of Information Technology	8543	96	2 years	Feb, Jul
Graduate Diploma of Information Technology	5543	72	1.5 years	Feb, Jul
Graduate Certificate of Computing	7543	24	6 months	Feb, Jul

MASTER OF INFORMATION TECHNOLOGY

This program offers a broad range of theoretical and applications-based electives – including smart-grids, power electronics for renewable energy engineering, power system analysis and protection, high voltage engineering, power systems planning and economics, and electrical safety. Such a wide choice allows students to gain a deep, broad knowledge across several areas. It is a great avenue for electrical engineers wishing to upgrade their skills or further their knowledge. As well as the Masters program, students can opt for a Graduate Diploma if they don't qualify for entry or if they would like a taste of postgraduate education.

TYPICAL PROGRAM STRUCTURE

Students need to complete 16 courses in total. They should select 13 courses from the CSE course list (with at least six selected from the list of the Advanced Disciplinary Knowledge Courses) with the option of 12-18 UOC of research for high performing students.



MAJORS

Students can choose up to two majors including Artificial Intelligence, Bioinformatics, Information Technology, Database Systems, e-Commerce Systems, Geospatial and Internetworking.

ENTRY REQUIREMENTS

A recognised four year Bachelor degree in engineering, science or a discipline that includes mathematics up to at least year two level, with an average grade of at least 65% over the final two years; a recognised three year Bachelor degree in computer science or engineering, with an average grade of at least 65% over the final two years; or completion of the Graduate Diploma of Information Technology.

EXEMPTIONS OR ADVANCED STANDING

Students may be granted credit for some courses. Those with a four year honours degree (for example in Computer 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.

GRADUATE DIPLOMA OF INFORMATION TECHNOLOGY

The Graduate Diploma in IT is intended for students with no or minimal prior computing background. Students with some computing background who want to obtain a broad understanding of computing might also find this program attractive. The Graduate Diploma will be most attractive to those who are not eligible for direct admission to the MIT program, as well as those seeking a shorter qualification.

TYPICAL PROGRAM STRUCTURE

The program consists of 12 courses totalling 72 units of credit (UOC). Two majors can be studied.



ENTRY REQUIREMENTS

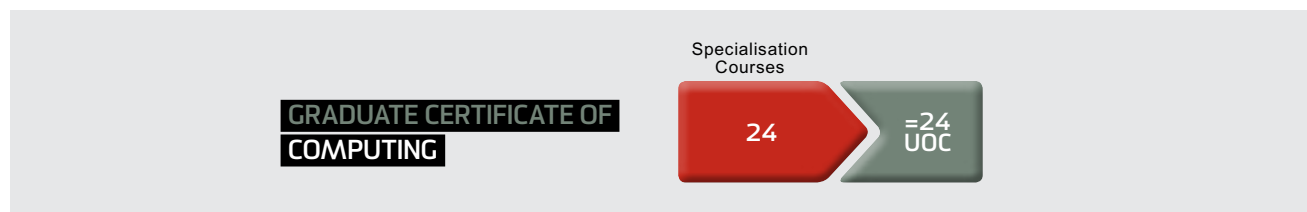
A recognised three year Bachelor degree in engineering or science or a discipline that included mathematics up to at least year two level, with a high credit average over the final two years; or completion of the Graduate Certificate in Computing.

GRADUATE CERTIFICATE IN COMPUTING

This program is an option if you are not eligible for entry to the Graduate Diploma of Information Technology, or wish to take a shorter postgraduate qualification. The Graduate Certificate in Computing develops students' knowledge and skills in information technology, and can lead to the Masters program.

TYPICAL PROGRAM STRUCTURE

The program consists of four courses (24 UOC) selected from the list of COMP courses offered in the Master of Information Technology program course list. Students can choose any course for which they are eligible to enrol.



ENTRY REQUIREMENTS

A recognised three year Bachelor degree in engineering or science, or a minimum of five years of work experience in an appropriate area of engineering or science. Other applicants will be considered on a case-by-case basis.

HAVE YOU CONSIDERED?

Mixing practical computing and biological sciences – like implantable bionics and artificial limbs? Check out the Master of Biomedical Engineering.

MANUFACTURING ENGINEERING AND MANAGEMENT

Are you interested in the manufacturing industry but unsure of how to move your career in that direction? Perhaps you are looking for a fast track way to get ahead in the industry? Postgraduate study in Manufacturing Engineering and Management could be the key to unlock the future career you desire.

Our programs are designed to integrate engineering, technology and management. Study options provide graduates from an engineering or science background with strong leadership, financial and manufacturing evaluation as well as project management skills, essential to excel in the current dynamic market place.

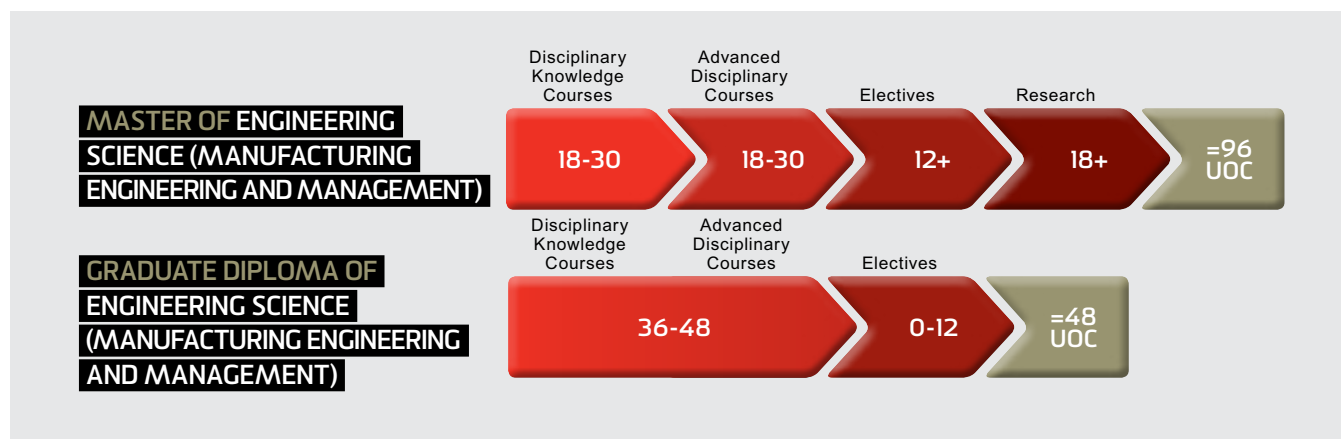
PROGRAM OPTIONS	PROGRAM CODE	UNITS OF CREDIT	DURATION*	COMMENCE
Master of Engineering Science (Manufacturing Engineering and Management)	MANFCS8338	96	2 years	Feb, Jul
Graduate Diploma of Engineering Science (Manufacturing Engineering and Management)	MANFFS5341	48	1 year	Feb, Jul

* Eligible students may apply for credit for up to eight courses (48 UOC) of Masters programs 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.

MASTER OF ENGINEERING SCIENCE (MANUFACTURING ENGINEERING AND MANAGEMENT)

This program covers a range of essential topics in product and process design, manufacture and delivery process aimed at achieving quality, timely delivery, minimum cost and flexible manufacturing through good manufacturing practices. Courses are especially suited to engineers in line management roles with operational, engineering, and/or research and development responsibilities. Qualified students can choose to enter at Masters level, but those who have less time (or who would like just a taste of postgraduate study) can begin with the Graduate Diploma.

TYPICAL PROGRAM STRUCTURE



DISCIPLINARY KNOWLEDGE COURSES

Students select three to five courses from a list including Reliability and Maintenance Engineering, Process Modelling and Simulation, Strategic Manufacturing Management and more.

ADVANCED DISCIPLINARY KNOWLEDGE COURSES

Students select three to five courses from a list including Industrial Management, Production Planning and Control, CAD/CAM and more.

ELECTIVES

Electives can be taken from the approved list of Engineering and Technical Management Courses. We recommend Life Cycle Engineering, Process and Product Quality in Engineering, Engineering Project Management, Economic Decision Analysis in Engineering, and Process Improvement and Maintenance Engineering. Electives 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.

RESEARCH

Students must complete a research component of 18 UOC, giving them the opportunity to broaden their understanding of something that they are passionate about through practical application with the close support of a supervisor. Both Masters and Graduate Diploma students are required to take a 6 UOC postgraduate coursework research essentials course.

Please note that not all of the courses are available in each semester. A full and current list of courses is available online in the UNSW Handbook.

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 Master of Engineering Sciences.

EXEMPTIONS OR ADVANCED STANDING

Students may be granted credit for some courses. Those with a four year honours degree (for example in Manufacturing or Industrial 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.

HAVE YOU CONSIDERED?

We offer the following related Postgraduate Programs:

- Master of Engineering Science (Mechanical Engineering)
- Master of Engineering (Mechanical Engineering)
- Graduate Diploma of Engineering Science (Mechanical Engineering).

STUDENT TESTIMONIAL

"There are numerous opportunities to participate in industrial and academic projects supervised by leading professors and scholars, allowing your problem-solving skills to be applied to real-world cases rather than just assignments and quizzes. Compared to other engineering disciplines, Manufacturing Engineering and Management provides me with opportunities to learn how to use both engineering and scientific principles to plan, design, implement and manage complex industrial systems."

SIMIN CHEN

**MASTER OF ENGINEERING SCIENCE
(MANUFACTURING ENGINEERING
AND MANAGEMENT)**

MECHANICAL ENGINEERING

Getting ahead in the competitive field of mechanical engineering sometimes means you need to stand out from the crowd. If you are looking to boost your career prospects, a postgraduate coursework program is an ideal way to upgrade your qualifications and deepen your knowledge of the field.

We offer two Masters programs in Mechanical Engineering at UNSW. The program you choose depends on your background, qualifications and what you want to achieve. We also offer a Graduate Diploma which is a shorter program and a great step up into the Master of Engineering Science.

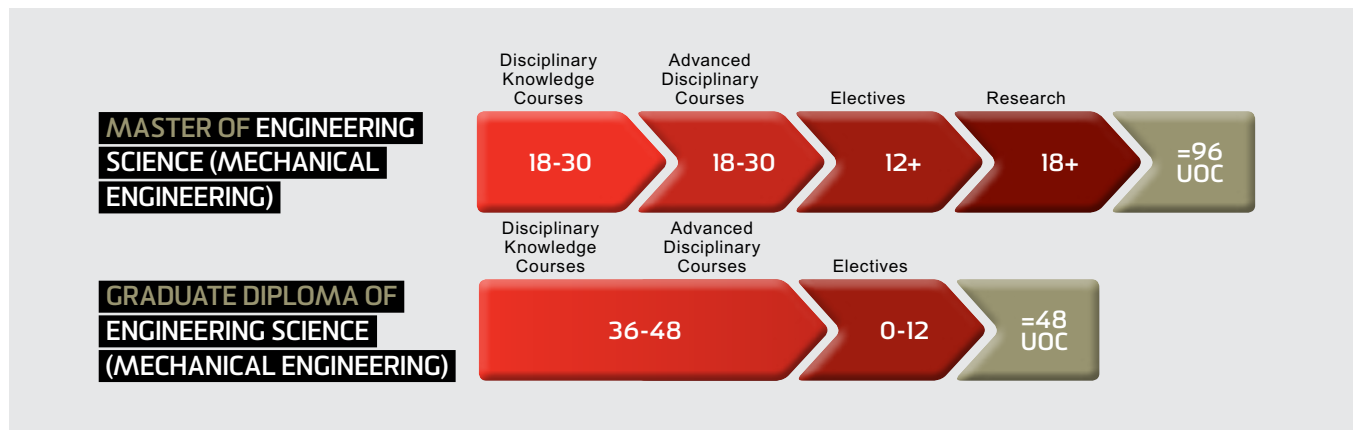
PROGRAM OPTIONS	PROGRAM CODE	UNITS OF CREDIT	DURATION*	COMMENCE
Master of Engineering Science (Mechanical Engineering)	MECHIS8338	96	2 years	Feb, Jul
Graduate Diploma of Engineering Science (Mechanical Engineering)	MECHZS5341	48	1 year	Feb, Jul
Master of Engineering (Mechanical Engineering)	MECHBS8621	96	2 years	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.

MASTER OF ENGINEERING SCIENCE (MECHANICAL ENGINEERING)

This program is designed for practising engineers who wish to upgrade their skills or extend their knowledge in mechanical engineering to enhance their career prospects. It covers the design, development, construction, operation and maintenance of machines, tools, plants and factories, including power generation, propulsion or manufacture of goods. It thoroughly covers the essential topics, methodologies and manufacturing applications. Qualified students can choose to enter at Masters level, but those who have less time (or who would like just a taste of postgraduate study) can begin with the Graduate Diploma.

TYPICAL PROGRAM STRUCTURE



DISCIPLINARY KNOWLEDGE COURSES

Students should select three to five courses from the list of Disciplinary Knowledge Courses including Mechanical Design, Refrigeration and Air Conditioning, and Mechanics of Fracture and Fatigue.

ADVANCED DISCIPLINARY KNOWLEDGE COURSES

Students should select three to five courses from the approved list of Advanced Disciplinary Knowledge Courses including CAD/CAM, Composite Materials and Mechanics and Automobile Engine Technology.

ELECTIVES

Students must choose at least one course from the approved list of Engineering and Technical Management Courses including Life Cycle Engineering, Process and Product Quality in Engineering, Engineering Project Management, Economic Decision Analysis in Engineering, Process Improvement and Maintenance Engineering. Electives may also be taken from the 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.

RESEARCH

Central to this program is a compulsory research component of 18 UOC. Students are required to conduct a significant research-based project of 12 UOC in their area of specialisation with guidance from a supervisor. Furthermore, students are required to take a 6 UOC postgraduate research essential course.

Please note that not all of the courses are available in each semester. A full and current list of courses is available online in the UNSW Handbook.

ENTRY REQUIREMENTS

Masters: You need a recognised four year Bachelor degree in an appropriate area of engineering with at least Honours II/2 or equivalent or an average mark of at least 65% over the final two years.

Graduate Diploma: You 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 of Engineering Science.

EXEMPTIONS OR ADVANCED STANDING

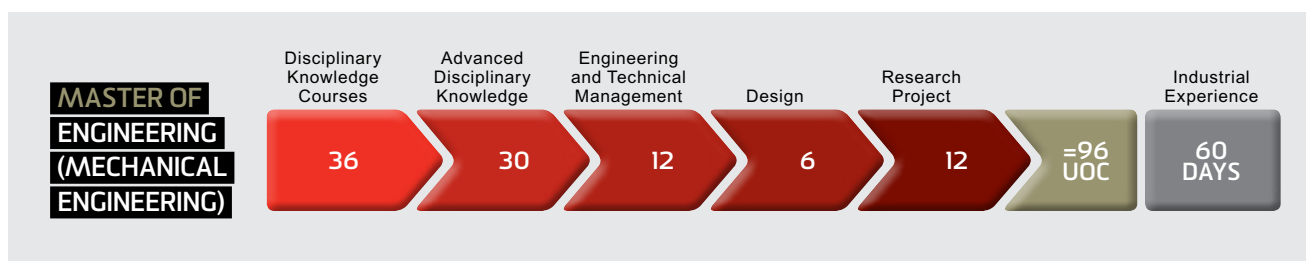
Students may be granted credit for some courses. Those with a four year honours degree (for example in Mechanical Engineering) can apply for credit for up to 48 UOC for the Masters (effectively reducing it to one year full time) or up to 24 UOC for the Graduate Diploma. Full details can be found on the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

MASTER OF ENGINEERING (MECHANICAL ENGINEERING)

This two year Masters degree is especially designed for students who wish to increase their knowledge and skills in mechanical engineering but who may not qualify for entry to the Master of Engineering Science. Flexibility and choice are maintained throughout the program as many elective courses are offered. Students can specialise and gain depth of knowledge across a broad range of areas, including mechanical design, mechanics, fluid dynamics, refrigeration and air-conditioning, composite materials, solar thermal energy and more. This program is the perfect entry point for those who wish to move into the engineering profession.

TYPICAL PROGRAM STRUCTURE

The Master of Engineering (Mechanical Engineering) degree requires students to complete at least 96 UOC in a range of specialised mechanical engineering topics and engineering management courses. A compulsory design course and research project plus 60 days of industrial experience results in students having a firm grasp of all aspects of mechanical engineering upon graduation.



ENTRY REQUIREMENTS

Students are required to hold a three year Engineering Science degree or a four year Bachelor of Engineering degree from a non-accredited institution with a minimum overall average of at least 65% or equivalent.

PROFESSIONAL RECOGNITION

The Master of Engineering in Mechanical Engineering is currently awaiting provisional professional accreditation by Engineers Australia.

HAVE YOU CONSIDERED?

We offer the following related Postgraduate Programs: Master and Graduate Diploma of Engineering Science (Manufacturing Engineering and Management).

MINING ENGINEERING

The best way to advance in the mining industry is by arming yourself with the latest skills and knowledge. So whether you're currently working in the industry, or planning to direct your career in that direction, postgraduate coursework programs can really make the world of difference.

Our programs cover topics as diverse as mine ventilation, geomechanics and mine management and include elements from a number of disciplines such as geology, metallurgy, sustainable practices, mineral economics and mine management.

PROGRAM OPTIONS	PROGRAM CODE	UNITS OF CREDIT	DURATION*	COMMENCE**
Master of Mining Engineering <ul style="list-style-type: none"> • Mine Geomechanics specialisation • Mine Management specialisation 	8335 MINEJS8335 MINEPS8335	72	1.5 years	Feb
Graduate Diploma of Mining Engineering <ul style="list-style-type: none"> • Mine Geomechanics specialisation • Mine Management specialisation 	5335 MINERS5335 MINEQS5335	48	1 year	Feb
Graduate Certificate of Mining Engineering	7335 MINEDS7335	24	0.5 year	Feb
Master of Mine Geotechnical Engineering <ul style="list-style-type: none"> • Coal Mine Strata Control specialisation • Underground Ground Control specialisation 	8059 MINEUS8059 MINETS8059	72	1.5 years	Feb
Graduate Diploma of Mine Geotechnical Engineering <ul style="list-style-type: none"> • Coal Mine Strata Control specialisation • Underground Ground Control specialisation 	5059 MINENS5059 MINEMS5059	48	1 year	Feb
Graduate Diploma of Mine Ventilation	5046	48	1 year	Feb

*Exemptions may be available for up to four courses (or 24 UOC) reducing the duration of some programs. Please contact School of Mining Engineering for more details about how you could reduce your program duration.

** All programs should commence in Semester One, however commencement in Semester Two is possible with written permission or at the School of Mining Engineering's discretion.

MASTER OF MINING ENGINEERING – GRADUATE DIPLOMA OF MINING ENGINEERING – GRADUATE CERTIFICATE OF MINING ENGINEERING

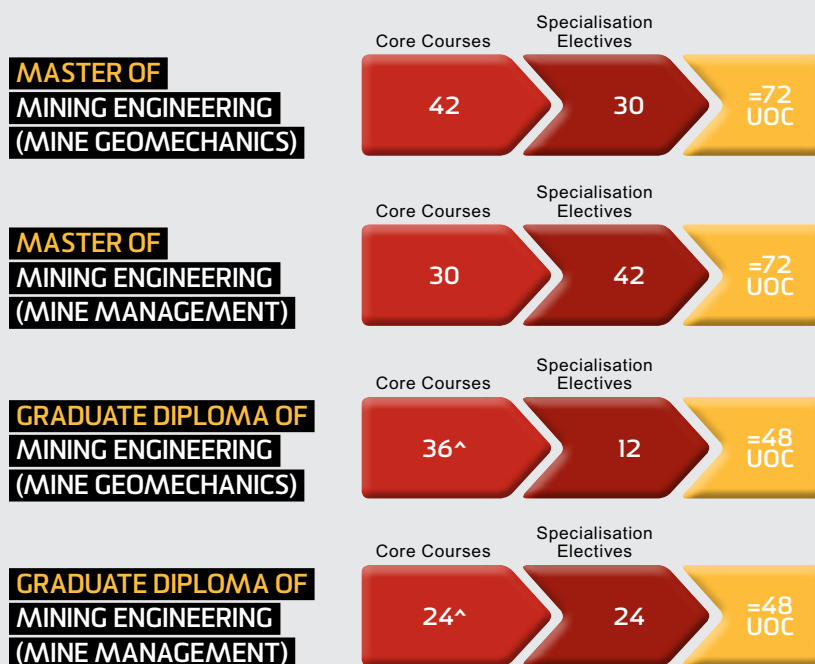
The Master of Mining Engineering provides advanced study in mining engineering, with various entry points and pathways of study depending on the student's background. Designed to cater for people with an engineering or technical background, the program can be undertaken on either a part-time or full-time basis. The program provides an opportunity for mining engineering graduates and minerals industry professionals to continue their professional development in specialised areas.

Students can choose the Masters program or enter via the Graduate Diploma and step up to the Masters at a later time. The Graduate Certificate of Mining Engineering is open to local students only and provides flexible entry for applicants who have limited tertiary qualifications.

There are two specialisations offered: **Mine Geomechanics** and **Mine Management**.

TYPICAL PROGRAM STRUCTURE

The courses are offered in block or distance format to allow employees of mining companies and associated service providers to attend on a part-time basis. The Graduate Diploma (Mine Management) specialisation can be completed fully in distance format. Some electives may only be offered every two years. See mining.unsw.edu.au for more information.



ENTRY REQUIREMENTS

Masters: Students must have a recognised four year Bachelor of Mining Engineering degree or four year Bachelor of Engineering Geology, Civil Engineering or Geotechnical Engineering with an average of at least 65% and no course fails. Experience in the mining industry will also be highly regarded.

Graduate Diploma: Students need a four year degree in Mining Engineering or related engineering or physical sciences discipline from a recognised institution, or a three year degree plus a minimum of one year relevant industry experience.

Graduate Certificate: Students need a three or four year degree in a technical discipline with at least one year of relevant mining industry experience.

Alternatively, those with at least four years of relevant responsible industry experience and vocational certificates may also gain entry with permission based on portfolio and interview. See mining.unsw.edu.au for more information.

PROFESSIONAL RECOGNITION

Mining engineering is an international profession with many of our graduates employed with mining companies operating in South East Asia, Africa, South and North America and Europe. Mining engineering graduates are trained to be versatile, adaptable and responsive to change in a physically and mentally challenging career. Our Graduate Diploma in Mining Engineering is considered a prerequisite qualification for State-based Mine Safety regulators to gauge competency for mine manager's certificates.

STUDENT TESTIMONIAL

"The variety of subjects offered in this program, along with the flexible form of delivery and interactive style of learning, makes the degree ideal for those who have come from a broad range of engineering and or science backgrounds. The degree also provides exposure to other areas of mining that many specialised engineers wouldn't otherwise be able to gain."

JAMES HARVEY

MASTER OF MINING ENGINEERING
(MINE MANAGEMENT)

MINING ENGINEERING CONT.

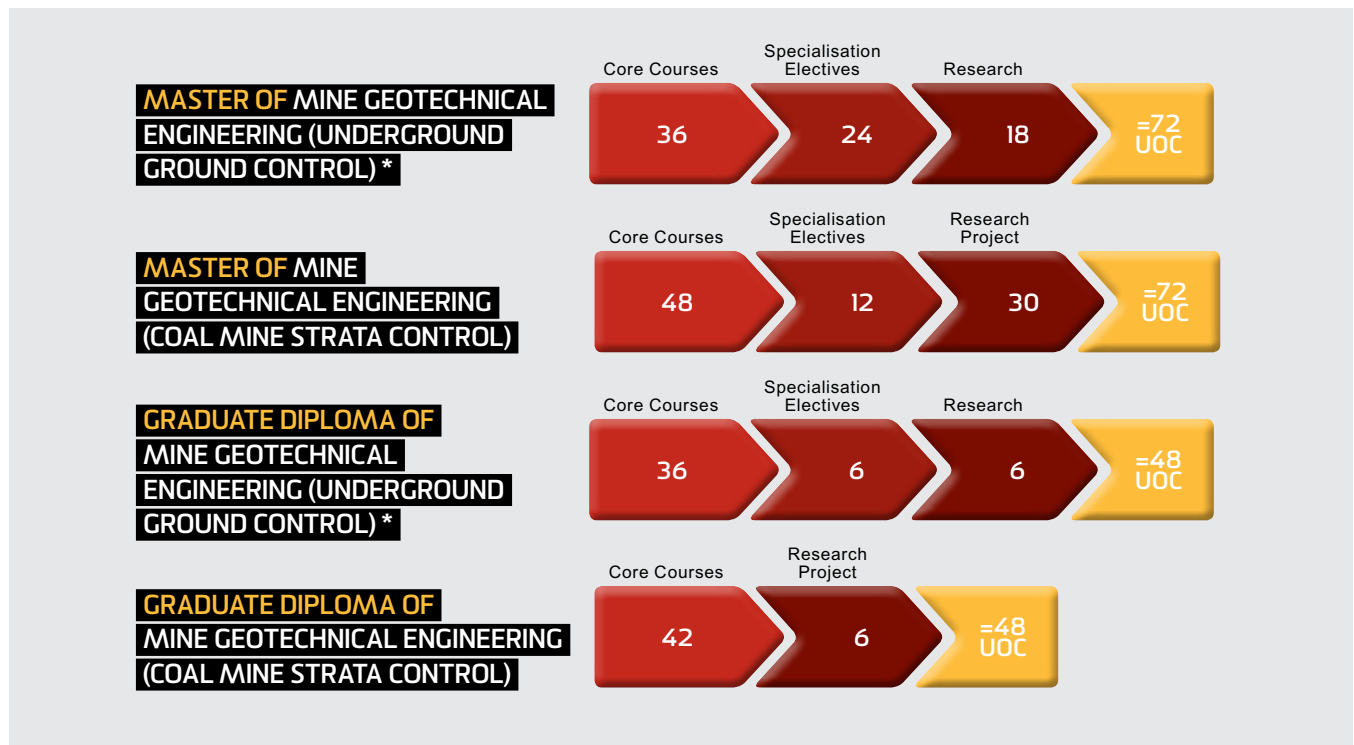
MASTER OF MINE GEOTECHNICAL ENGINEERING – GRADUATE DIPLOMA OF MINE GEOTECHNICAL ENGINEERING

This specialist program is designed for those who currently work within the underground hard rock or underground coal mining industry and who may have particular responsibilities in the field of strata control. It has been designed to cater for people with both engineering and scientific backgrounds and may be undertaken on either a part-time or full-time basis.

There are two specialisations offered: **Underground Ground Control** and **Coal Mine Strata Control**. International students should note that the Underground Ground Control specialisation does not allow them to enrol on a student visa.

TYPICAL PROGRAM STRUCTURE

Students study fundamental principles of rock mechanics and geotechnical engineering, followed by a comprehensive coverage of practical strata control applications. The program is offered in a flexible delivery format, with a large component available in a distance format, plus a limited number of face-to-face workshops/sessions and a research project. Some electives may only be offered every two years. See mining.unsw.edu.au for more information.



* This program is for local and international students. International students should note this program does not allow them to enrol on a student visa.

ENTRY REQUIREMENTS

Masters: Students need to have completed the Graduate Diploma in Mine Geotechnical Engineering with a minimum of 70% and no course fails. There is no direct entry path for this program, however, in rare exceptional circumstances, students who can demonstrate equivalent prior learning may be approved an alternative entry pathway by written permission of the Head of School or Director of Postgraduate Studies (Coursework).

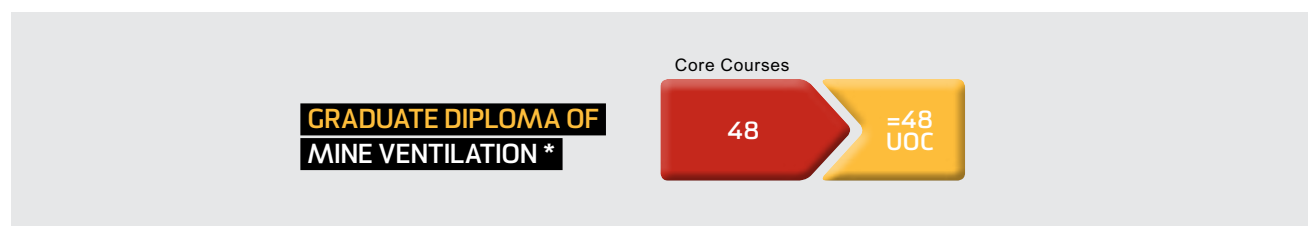
Graduate Diploma: Students need a three or four year degree in Mining or Civil Engineering or a Geosciences discipline from a recognised institution. Significant industry experience in underground mining is strongly recommended. Those with at least two years of relevant responsible industry experience may also gain entry with permission, based on portfolio and interview. See mining.unsw.edu.au for more information.

GRADUATE DIPLOMA OF MINE VENTILATION

This flexible program is delivered in a distance format, provides professional development in mine ventilation and environment for mining engineers and others who work in the mining industry. The program covers the needs of both the metalliferous and coal mining sectors. Options in the Diploma include the accredited programs offered by UNSW for the appointment of Statutory Coal Mine Ventilation Officers in both NSW and QLD. The course contents have been developed from standard texts, industry guidelines and case studies. These are delivered from both a theoretical and operational perspective with the aim that course contents will be immediately relevant to industry.

TYPICAL PROGRAM STRUCTURE

This program, delivered in a distance, flexible format, is based on a theoretical and operational perspective with the aim that course contents will be immediately relevant to industry. As this is a professional development course, it is essential that the student is working at a mine site because assessments are geared to practical evaluation of mine ventilation systems. Some electives may only be offered every two years. See mining.unsw.edu.au for more information.



ENTRY REQUIREMENTS

Entry to the Graduate Diploma requires a degree in mining engineering and at least one year experience underground in coal or metal mining, or a degree in a related discipline and at least two years underground mining experience. Special entry may also be granted for those with at least three years relevant responsible work experience, and will be considered based on a portfolio supporting the application and entry interview. See mining.unsw.edu.au for more information. Applicants who have completed the Statutory Ventilation Officers (VO) professional development program are given 50% RPL for this Graduate Diploma.

PROFESSIONAL RECOGNITION

The program is supported by the UNSW Minerals Industry Advisory Council (MIAC) and MTEC, the tertiary minerals education arm of the Minerals Council of Australia.

STUDENT TESTIMONIAL

"The block courses offered by the School of Mining Engineering are a mode of study that I hadn't experienced before. However, they involved group work, discussions and presentations which allowed me to learn more about topics related to mining engineering and to discuss them with my classmates - most of them working in the Australian mining industry."

YESENIA SAAVEDRA
MASTER OF MINING ENGINEERING

HAVE YOU CONSIDERED?

We offer Postgraduate Programs in Civil Engineering, Project Management, Environmental Engineering.

NUCLEAR ENGINEERING

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.

MASTER OF ENGINEERING SCIENCE (NUCLEAR ENGINEERING)

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.

TYPICAL PROGRAM STRUCTURE



DISCIPLINARY KNOWLEDGE COURSES

With approval, students can choose subjects from relevant disciplines such as Maths, Physics, Electrical, Mechanical, Civil, Mining with approval. Up to 12 UOC of foundational Disciplinary Knowledge Courses may be taken to provide the necessary background. For example, an electrical engineer might choose Power System Equipment, Power System Analysis, Electricity Industry Planning, Electrical Industry Operation, and Sustainable Energy Technology Assessment.

ADVANCED DISCIPLINARY KNOWLEDGE COURSES

Students should take the following three core courses: Introduction to Nuclear Engineering, Reactor Physics for Engineers, and Fuel Cycle, Waste Management and Life-Cycle Management, plus they can choose either or both of Safety, Security and Safeguards and/or Uranium Mining Fundamentals.

ELECTIVES

At least one elective must be taken from the approved list of Engineering and Technical Management Courses. Electives 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.

RESEARCH

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.

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

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) or up to 24 UOC for the Graduate Diploma. 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.

HAVE YOU CONSIDERED?

You may also be interested in the following Postgraduate Programs:

- Master of Engineering Science (Renewable Energy Engineering)
- Master of Engineering Science (Energy Systems).

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)



PETROLEUM ENGINEERING

The petroleum industry traditionally relies on 'on-the-job' training programs, supplemented by in-house and external short courses, to train and update petroleum engineers and earth scientists. UNSW Engineering offers postgraduate programs specifically designed to provide those working in the oil and gas industry a quality education experience as they upgrade their qualifications and deepen their knowledge of the industry.

PROGRAM OPTIONS	PROGRAM CODE	UNITS OF CREDIT	DURATION*	COMMENCE
Master of Engineering Science (Petroleum Engineering)	PTRLBS8338	96	2 years	Feb, Jul
Master of Engineering Science (Petroleum Engineering) by Open Learning	PTRLAS8538	72	1.5 years**	Feb, Jul
Graduate Diploma of Engineering Science (Petroleum Engineering)	PTRLAS5338	60	1.5 years	Feb, Jul
Graduate Certificate of Engineering Science (Petroleum Engineering)	PTRLAS7338	48	1 year	Feb, Jul

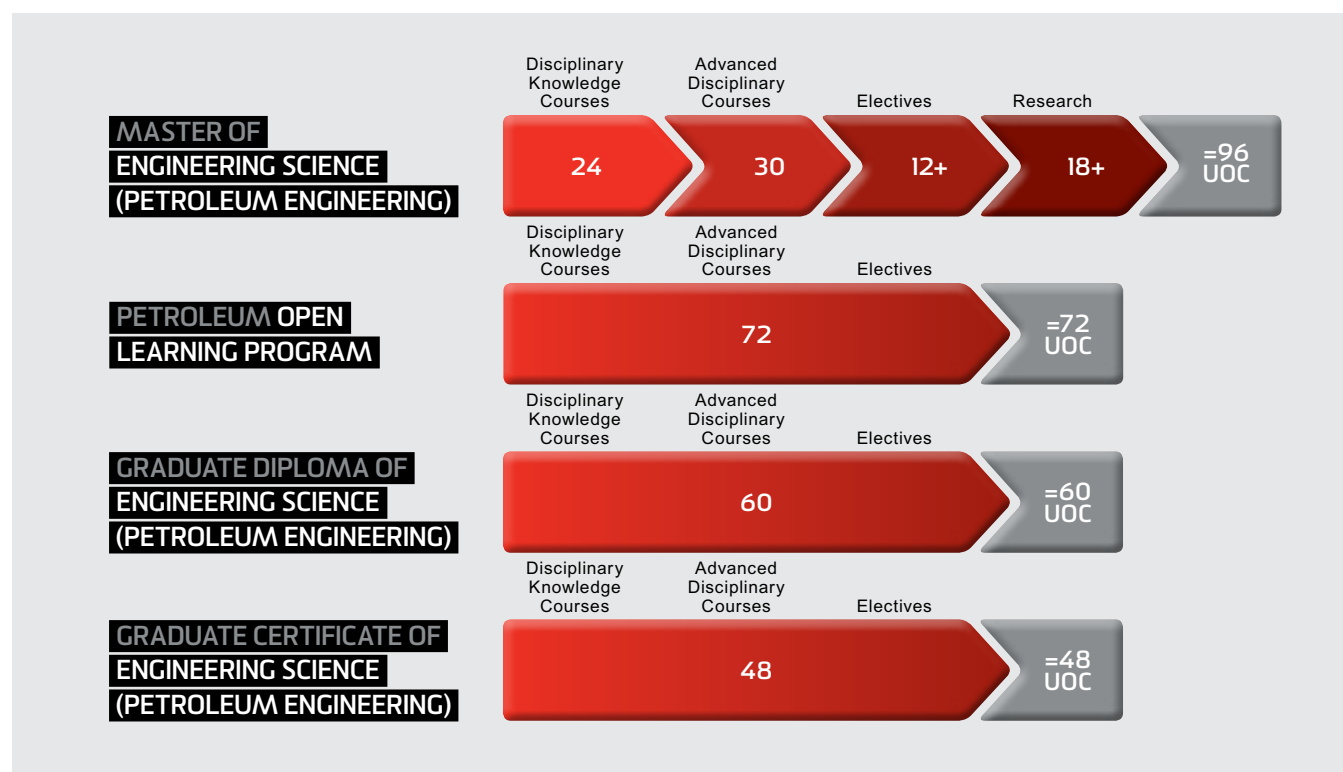
* Eligible students may apply for credit depending on previous study and professional experience. This can reduce the time taken by up to a year.

** Equivalent to full-time, most students take this program part-time which takes a minimum of three years.

MASTER OF ENGINEERING SCIENCE (PETROLEUM ENGINEERING)

This program is designed for upstream oil and gas personnel who are interested in expanding their knowledge base and improving their technical understanding of petroleum engineering. It covers three areas: reservoir characterisation, reservoir and production engineering, and drilling and well technology. A research component allows students to apply taught material to a real-world problem and use their own skills at investigation to develop a solution. As well as the Masters program, students can opt for a shorter program if they don't qualify for entry or if they would like a taste of postgraduate education.

TYPICAL PROGRAM STRUCTURE



DISCIPLINARY KNOWLEDGE COURSES

Students choose from the following core subjects: Overview of the Petroleum Industry, Introduction to Petrophysics, Reservoir Engineering A, and Petroleum Geology and Petroleum Geophysics.

ADVANCED DISCIPLINARY KNOWLEDGE COURSES

Students can choose five subjects from an extensive list including Well Drilling Equipment and Operations, Natural Gas Engineering, Petroleum Geophysics, Deep Water Drilling Engineering, Coal Seam Gas Engineering and more.

ELECTIVES

At least one course (6 UOC) must be taken from the approved list of Engineering and Technical Management Courses. The following course is recommended: Petroleum Production Economics. All other electives may 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. We recommend Field Development Geology, Reservoir Engineering B, Reservoir Characterisation, and Formation Evaluation.

RESEARCH

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.

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

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. Entry into the Open Learning Program further requires the student to demonstrate at least two years of work experience in the Upstream Petroleum Industry.

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.

Graduate Certificate: Students need a three or four year degree in a relevant discipline of engineering or science plus relevant professional experience. The Graduate Certificate is a pathway to the Graduate Diploma and then 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 Petroleum Engineering) can apply for credit for up to 48 UOC for the Masters (effectively reducing it to one year full time) or up to 24 UOC for the Graduate Diploma. Full details can be found on the program handbook page.

HAVE YOU CONSIDERED?

We also offer Postgraduate Programs in Civil Engineering and Environmental Engineering.

PETROLEUM OPEN LEARNING PROGRAM

Our Petroleum Open Learning Program is designed to provide students with the skills and knowledge they need to meet the demands of working in the oil and gas industry today and into the future.

Professionals in the oil and gas industry often work in remote locations and struggle to attend traditional university programs. At UNSW School of Petroleum Engineering, we have worked together with industry to structure the following programs so they can be delivered online.

- Master of Engineering Science
- Graduate Diploma of Engineering Science
- Graduate Certificate of Engineering Science.

Contact the School directly for further details about the Open Learning Program.

Our current online learning students are working all over the world including Australia, New Zealand, Indonesia, Malaysia, Brunei, Singapore, Taiwan, Thailand, Vietnam, China, India, Oman, Yemen, South Africa, Holland, Spain, England, Scotland, Canada and USA.



PHOTOVOLTAICS AND RENEWABLE ENERGY

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. Students can choose between two specialisations – Photovoltaics and Solar Energy or Renewable Energy – at both Masters level and Graduate Diploma.

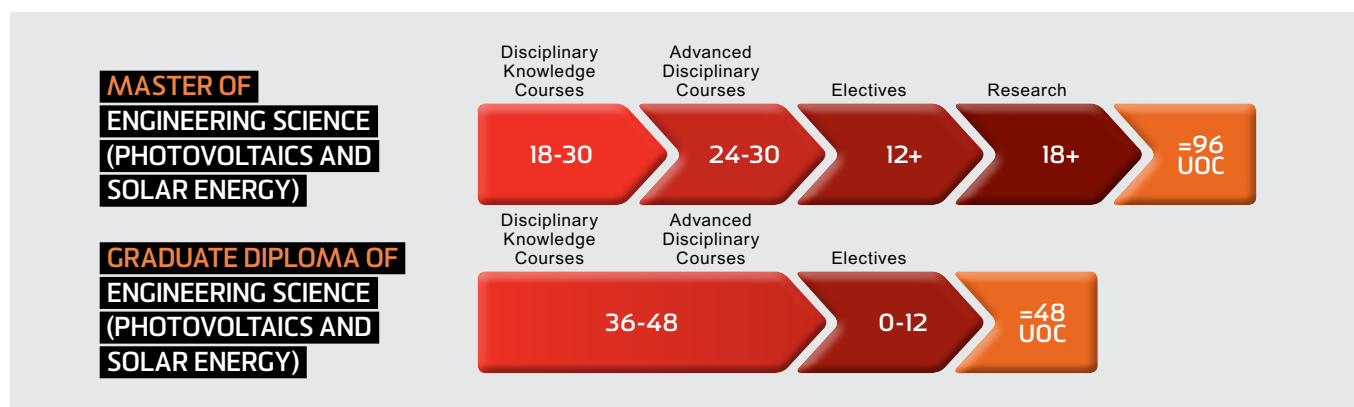
PROGRAM OPTIONS	PROGRAM CODE	UNITS OF CREDIT	DURATION*	COMMENCE
Master of Engineering Science (Photovoltaics and Solar Energy)	SOLACS8338	96	2 years	Feb, Jul
Graduate Diploma of Engineering Science (Photovoltaics and Solar Energy)	SOLAES5341	48	1 year	Feb, Jul
Master of Engineering Science (Renewable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

MASTER OF ENGINEERING SCIENCE (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.

TYPICAL PROGRAM STRUCTURE



DISCIPLINARY KNOWLEDGE COURSES

At least three courses (18 UOC) should be chosen from a list including Low Energy Buildings and Photovoltaics, Solar Cell Technology and Manufacturing, Sustainable Energy in Developing Countries and more.

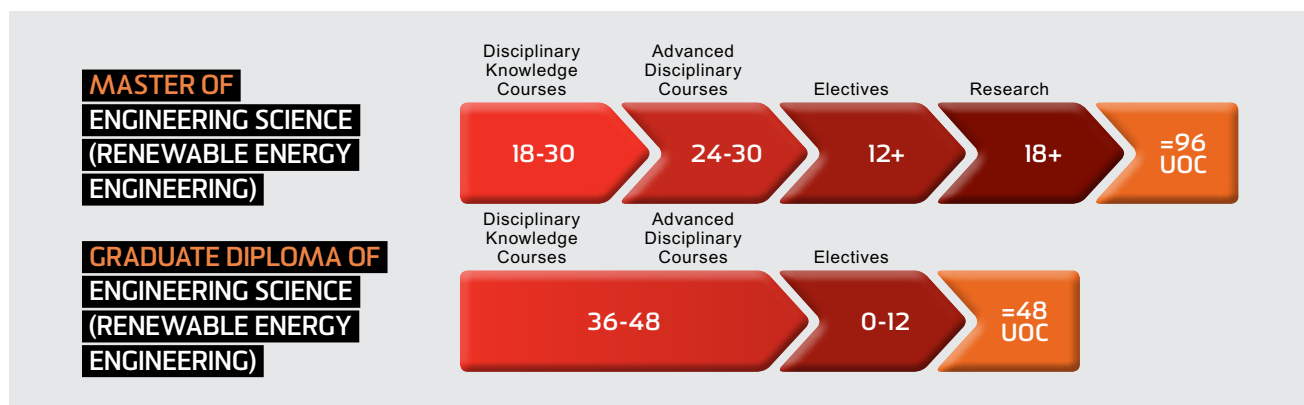
ADVANCED DISCIPLINARY KNOWLEDGE COURSES

Students need to take the following three courses: Advanced Photovoltaic Manufacturing, Advanced Photovoltaics, and Advanced Solar Cell Characterisation, plus up to two additional subjects from the prescribed list.

MASTER OF ENGINEERING SCIENCE (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.

TYPICAL PROGRAM STRUCTURE



DISCIPLINARY KNOWLEDGE COURSES

Students must take at least three courses (18 UOC) from a list including Energy Efficiency, Wind Energy Converters, Sustainable Energy in Developing Countries and many more.

ADVANCED DISCIPLINARY KNOWLEDGE COURSES

Students should take subjects from the list that includes Renewable Energy System Performance Modelling and Performance Analysis, Solar Thermal Energy Design, Electricity Industry Planning and Economics and more.

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 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. Students may also take up to 12 UOC of foundation courses if approved.

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.

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

ENTRY REQUIREMENTS

Masters: You need a recognised four year Bachelor degree in an appropriate area of engineering with at least Honours II/2 or equivalent or an average mark of at least 65% over the final two years.

Graduate Diploma: Your four year degree may also be in science. 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 Electrical Engineering) can apply for credit for up to 48 UOC for the Masters (effectively reducing it to one year full time) or up to 24 UOC for the Graduate Diploma. Full details can be found on the program handbook page.

HAVE YOU CONSIDERED?

You may also be interested in the following Postgraduate Programs:

- Master of Engineering Science (Nuclear Engineering)
- Master of Engineering Science (Energy Systems).

PROJECT MANAGEMENT

Postgraduate study in Project Management provides students with the skills to excel in a professional career in either public or private sectors, at various levels of responsibility – from strategic management through to detail. Designed as a professional qualification for practitioners, and the result of extensive consultation with industry, this program enables graduates to take a leading role in industry.

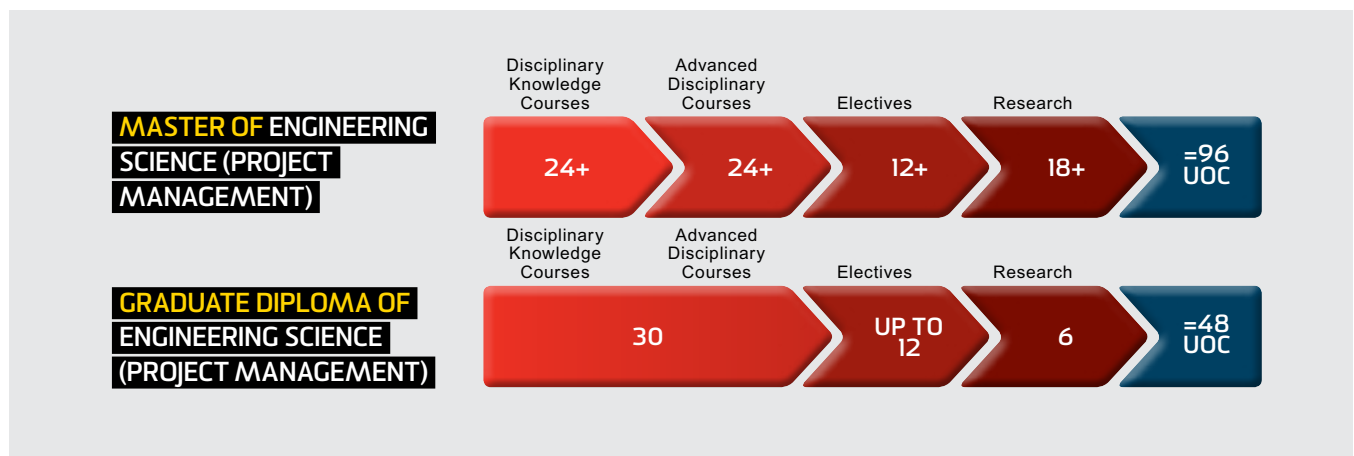
PROGRAM OPTIONS	PROGRAM CODE	UNITS OF CREDIT	DURATION*	COMMENCE
Master of Engineering Science (Project Management)	CVENFT8338	96	2 years	Feb, Jul
Graduate Diploma of Engineering Science (Project Management)	CVENET5341	48	1 year	Feb, Jul

* Eligible students may apply for credit for up to eight courses (48 UOC) of Masters programs 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.

MASTER OF ENGINEERING SCIENCE (PROJECT MANAGEMENT)

Learn how to deliver your programs on time, on budget, and without nasty surprises. The program, developed with extensive industry consultation, covers the fundamentals and applications in project management including planning, risk, contracts, people, equipment, materials, legal, finances and economics. As well as the Masters program, students can opt for a Graduate Diploma if they don't qualify for entry or if they would like a taste of postgraduate education.

TYPICAL PROGRAM STRUCTURE



DISCIPLINARY KNOWLEDGE COURSES

Students who are moving from a different discipline, or have not completed appropriate undergraduate courses, will be advised to take suitable courses (Disciplinary Knowledge) so they are prepared for the Advanced Disciplinary Knowledge Courses. These may include Problem Solving for Engineers, Engineering Contracts, Structural Dynamics and more.

ADVANCED DISCIPLINARY KNOWLEDGE COURSES

Students may take courses from any postgraduate specialisation offered from the School of Civil and Environmental Engineering. They can also choose courses from the areas of transport and traffic engineering and construction management. Popular choices include Project Planning and Control, Human Resources Management, Management of Risk and Marketing in Technology and Engineering.

ELECTIVES

At least one course (6 UOC) must be taken from the approved list of Engineering and Technical Management Courses. We recommend Engineering Economics and Financial Management, Project Management Framework, Environmental Management, and Sustainability Assessment and Risk Analysis in Water and Energy Systems Planning. All other electives may 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.

RESEARCH (BOTH SPECIALISATIONS)

Students who have not completed a four year degree which included a thesis must complete a 12 UOC Masters Thesis research component that gives them the opportunity to broaden their understanding of a topic that they are passionate about. The research will be supervised by an appropriate academic. All students must undertake GSOE9010 Engineering Postgraduate Coursework Research Essentials (6 UOC).

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

ENTRY REQUIREMENTS

Masters: You need a recognised four year Bachelor degree in an appropriate area of engineering with at least Honours II/2 or equivalent or an average mark of at least 65% over the final two years.

Graduate Diploma: You 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 Civil Engineering) can apply for credit for up to 48 UOC for the Masters (effectively reducing it to one year full time) or up to 24 UOC for the Graduate Diploma. Full details can be found on the program handbook page.

HAVE YOU CONSIDERED?

We also offer Postgraduate Programs in Civil Engineering and Environmental Engineering.

STUDENT TESTIMONIAL

"The strengths of the Master of Engineering Science program were that it focused on a wide range of topics relevant to the project management discipline, as well as closely tying them to practices that occur in my workplace. I found the course material very relevant to my day-to-day work life. I know it seems obvious, but if you genuinely enjoy the coursework it makes it much more compelling to sit down and study."

CLAUDELLE TAYLOR

**MASTER OF ENGINEERING SCIENCE
(PROJECT MANAGEMENT)**

SATELLITE SYSTEMS ENGINEERING

This program has been designed by the space industry and global leaders in education. The focus is on producing 'industry savvy' satellite professionals with knowledge in all areas of satellite engineering, from management and law, satellite mission development, launch, operation and maintenance, through to satellite applications.

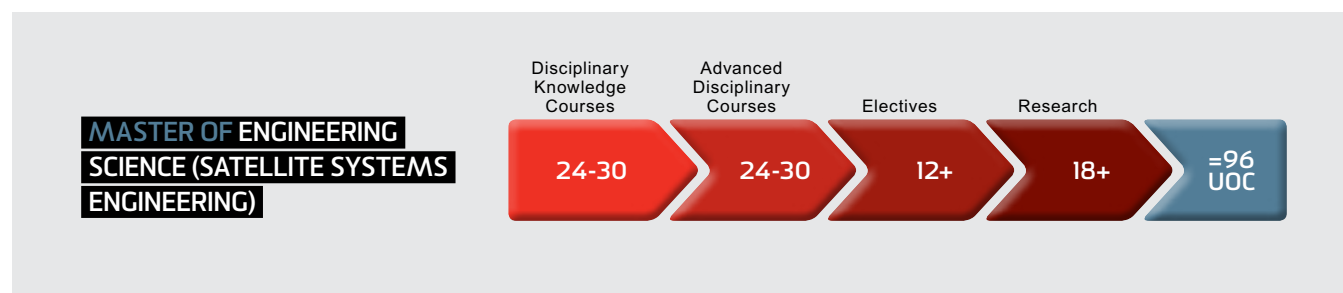
PROGRAM OPTIONS	PROGRAM CODE	UNITS OF CREDIT	DURATION*	COMMENCE
Master of Engineering Science (Satellite Systems Engineering)	ELECOS8338	96	2 years	Feb, Jul

*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.

MASTER OF ENGINEERING SCIENCE (SATELLITE SYSTEMS ENGINEERING)

This program focuses on the systems engineering aspect of satellites before delving into satellite applications. Through a complement of core and elective courses, and a year-long practical project, students will gain a comprehensive foundation in satellite systems engineering from the space segment to the ground segment and typical applications. It is a great entry point for engineers wishing to join the space industry, or a research career in space.

TYPICAL PROGRAM STRUCTURE



DISCIPLINARY KNOWLEDGE COURSES

Students can select courses covering a wide range of system-level subjects including Space Systems Architecture and Orbits, Space Mission Development, Space Law and many others in between.

ADVANCED DISCIPLINARY KNOWLEDGE COURSES

Students select from subjects including The Space Segment, Satellite Applications, Digital Image Processing, Satellite Navigation and more.

ELECTIVES

At least one course (6 UOC) must be taken from the approved list of Engineering and Technical Management Courses. All other electives may 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.

RESEARCH

Students must complete 24 UOC of research via Satellite Engineering Project A (12 UOC) and Satellite Engineering Project B (12 UOC). This 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.

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

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 stream. Relevant disciplines cover most disciplines of engineering where a sufficiently strong foundation in mathematics is obtained.

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.

STRUCTURAL ENGINEERING

This program is ideally suited for both practising structural engineers and recent graduates planning a career in structural engineering. It is designed to develop skills in analysis and design of steel and concrete structures, with an understanding of modern materials.

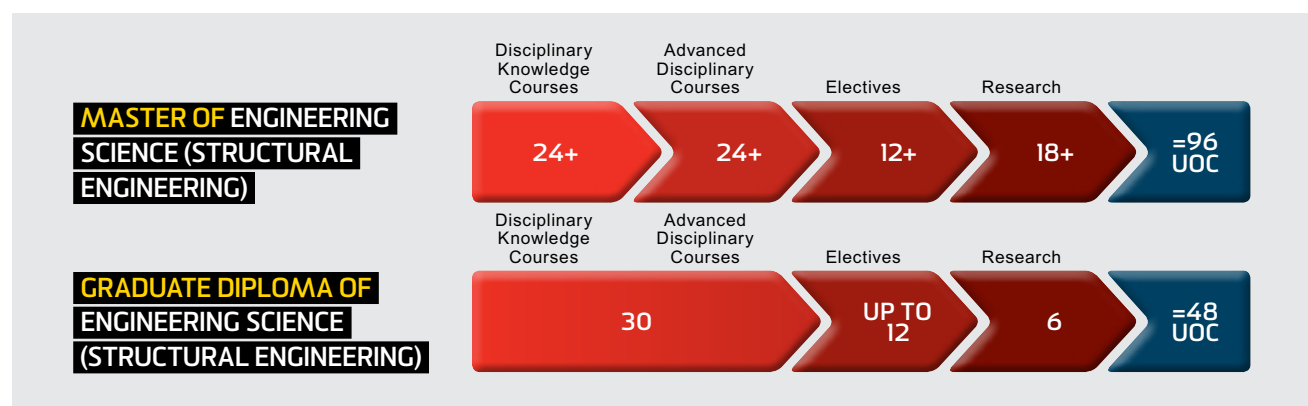
PROGRAM OPTIONS	PROGRAM CODE	UNITS OF CREDIT	DURATION*	COMMENCE
Masters of Engineering Science (Structural Engineering)	CVENXS8338	96	2 years	Feb, Jul
Graduate Diploma of Engineering Science (Structural Engineering)	CVENWS5341	48	1 year	Feb, Jul

* Eligible students may apply for credit for up to eight courses (48 UOC) of Masters programs 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.

MASTER OF ENGINEERING SCIENCE (STRUCTURAL ENGINEERING)

This program provides allows students to develop skills in analysis and design of steel and concrete structures with an understanding of modern materials. It is ideally suited for both practising structural engineers and recent graduates planning a career in structural engineering. As well as the Masters program, students can opt for a Graduate Diploma if they don't qualify for entry or if they would like a taste of postgraduate education.

TYPICAL PROGRAM STRUCTURE



DISCIPLINARY KNOWLEDGE COURSES

Students who are moving from a different discipline, or have not completed appropriate undergraduate courses, will be advised to take suitable courses (Disciplinary Knowledge) so they are prepared for the Advanced Disciplinary Knowledge Courses.

ADVANCED DISCIPLINARY KNOWLEDGE COURSES

Students may select four courses from a list including Structural Stability, Prestressed Concrete Design, Reinforced Concrete Design, Steel and Composite Structures, Advanced Materials Technology and more.

ELECTIVES

At least one course (6 UOC) must be taken from the approved list of Engineering and Technical Management Courses. All other electives may 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.

RESEARCH

All students must undertake a research essentials course. Those who haven't done an undergraduate thesis may also need to complete further research courses under academic supervision.

ENTRY REQUIREMENTS

Masters: A relevant recognised four year Bachelor degree in engineering with at least Honours II/2 or equivalent or an average mark of at least 65% over the final two years.

Graduate Diploma: A relevant three or four year degree in engineering or science plus related 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 Civil Engineering) can apply for credit for up to 48 UOC for the Masters (effectively reducing it to one year full time) or up to 24 UOC for the Graduate Diploma. Full details can be found on the program handbook page.

TELECOMMUNICATIONS

The Telecommunications industry is booming, with new technology and systems being introduced at a rapid rate. If you want to position yourself ahead of the crowd, and secure your future in the industry, then postgraduate study in Telecommunications Engineering is a great way to get a leading edge. With two innovative Masters programs and a Graduate Diploma to choose from, you'll be sure to find an entry point that suits you.

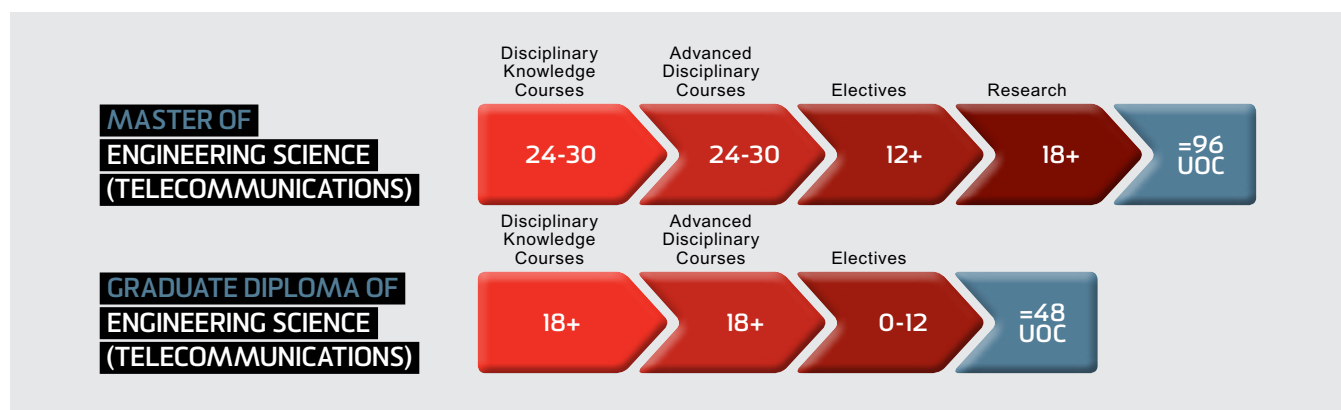
PROGRAM OPTIONS	PROGRAM CODE	UNITS OF CREDIT	DURATION*	COMMENCE
Master of Engineering Science (Telecommunications)	TELEBS8338	96	2 years	Feb, Jul
Graduate Diploma of Engineering Science (Telecommunications)	TELECS5341	48	1 year	Feb, Jul
Master of Engineering (Telecommunications)	TELEAS8621	96	2 years	Feb, Jul

* Eligible students may apply for credit for up to eight courses (48 UOC) of 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. No advanced standing will be granted for the Master of Engineering.

MASTER OF ENGINEERING SCIENCE (TELECOMMUNICATIONS)

This program provides solid postgraduate education for electrical engineers wishing to upgrade their skills or further their knowledge in telecommunications engineering. The focus is on recent and advanced aspects of telecommunications, including protocols used in networks such as the internet, the operation and control of such networks, and the design and operation of switches and routers within such networks. Aspects of advanced wireless communications are also covered such as modulation techniques, coding techniques and information theory. As well as the Masters program, students can opt for a Graduate Diploma if they don't qualify for entry or if they would like a taste of postgraduate education.

TYPICAL PROGRAM STRUCTURE



DISCIPLINARY KNOWLEDGE COURSES

Students can choose four or five subjects from a list that includes Microelectronic Design and Technology, Advanced Digital Signal Processing, Optical Circuits and Fibres and more.

ADVANCED DISCIPLINARY KNOWLEDGE COURSES

Students need to study at least three courses from a list including Network Systems Architecture, Advanced Wireless Communication, Quantum Communications and more, plus up to two more from a list that includes GPS Positioning, Receivers and Systems, GeoIT and Info Apps and more.

ELECTIVES

At least one course (6 UOC) must be taken from the approved list of Engineering and Technical Management Courses. All other electives may be chosen 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.

RESEARCH

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.

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

ENTRY REQUIREMENTS

Masters: You need a recognised four year Bachelor degree in an appropriate area of engineering with at least Honours II/2 or equivalent or an average mark of at least 65% over the final two years. Relevant disciplines considered for entry include electrical or telecommunications engineering, as well as computer engineering where a sound foundation in telecommunications is provided.

Graduate Diploma: You 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

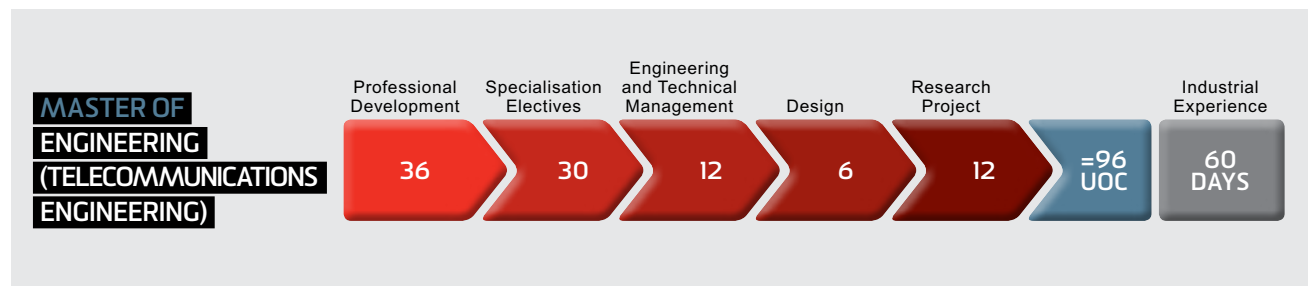
Students may be granted credit for some courses. Those with a four year honours degree (for example in Electrical Engineering) can apply for credit for up to 48 UOC for the Masters (effectively reducing it to one year full time) or up to 24 UOC for the Graduate Diploma. Full details can be found on the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

MASTER OF ENGINEERING (TELECOMMUNICATIONS)

This two year Masters degree is especially designed for students who wish to increase their knowledge and skills in telecommunications engineering but who may not qualify for entry the Masters of Engineering Science. Flexibility and choice are maintained throughout the program as many elective courses are offered. Students can specialise and gain depth of knowledge across a broad range of areas including wireless communications, satellite communications, quantum communications, switching and routers, advanced network architecture, network operation and control, advanced modulation and coding techniques and GPS. Flexibility and choice are maintained throughout the program as many elective courses are offered. The program is fully accredited by Engineers Australia and is the perfect entry point for those who wish to move into the engineering profession.

TYPICAL PROGRAM STRUCTURE

The Masters degree requires students to complete at least 96 UOC including specialisation-specific professional development courses plus more in-depth telecommunications engineering and engineering management courses. A compulsory design course and research project plus 60 days of industrial experience mean students have a firm grasp of all aspects of telecommunications engineering upon graduation.



ENTRY REQUIREMENTS

Students require a three year Engineering Science degree or a four year Bachelor of Engineering degree from a non-accredited institution with a minimum overall average of at least 65% or equivalent.

PROFESSIONAL RECOGNITION

The two year Masters of Engineering in Telecommunications Engineering is professionally accredited by Engineers Australia.

HAVE YOU CONSIDERED?

Our postgraduate programs in Electrical Engineering.

TRANSPORT ENGINEERING

With increases in population and urban sprawl, the need for a safe, quick, reliable and efficient transport system has never been more important. Transport engineering looks at the planning, functional design, operation and management of transport infrastructure – with some focus on the economical and environmental impact of decisions. If you are interested in moving your career into transport engineering, or you simply want to broaden your skills and knowledge in the field, we offer a fantastic Masters program that will give you the step up you need to get ahead.

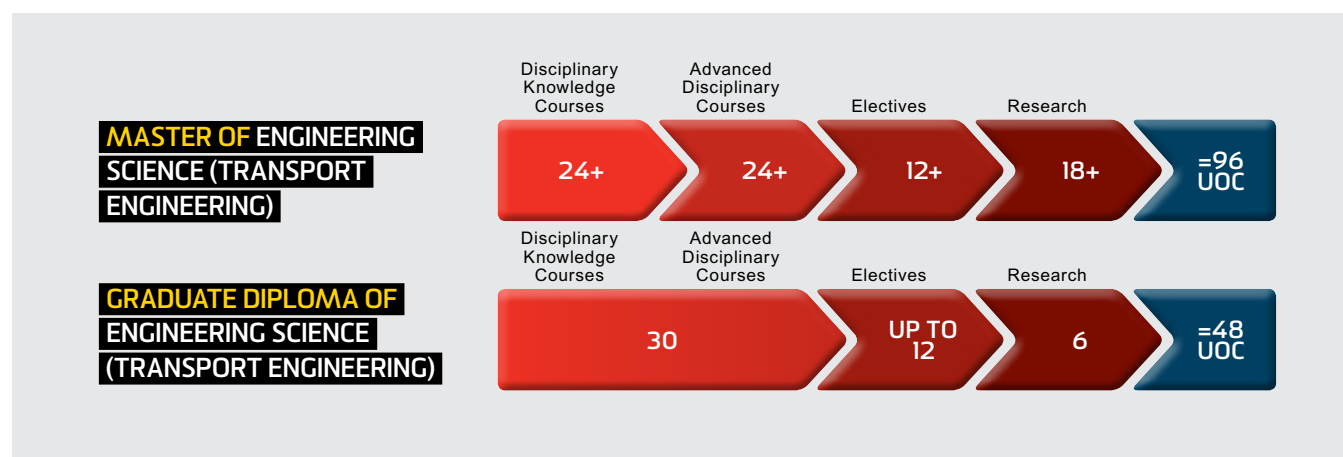
PROGRAM OPTIONS	PROGRAM CODE	UNITS OF CREDIT	DURATION*	COMMENCE
Master of Engineering Science (Transport Engineering)	CVENCT8338	96	2 years	Feb, Jul
Graduate Diploma of Engineering Science (Transport Engineering)	CVENBT5341	48	1 year	Feb, Jul

* Eligible students may apply for credit for up to eight courses (48 UOC) of Masters programs 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.

MASTER OF ENGINEERING SCIENCE (TRANSPORT ENGINEERING)

This program provides students with advanced study options in transport engineering – from transport planning, ITS, and land use to risk management and safety to network design, demand estimation and sustainability, emission and health. Designed to develop skills in modelling and analysing transport systems (including passenger and freight) for various modes of transport, the program provides students with enough knowledge about the science and practice of transport engineering so they can step confidently into a role in transport engineering.

TYPICAL PROGRAM STRUCTURE



DISCIPLINARY KNOWLEDGE COURSES

Students who are moving from a different discipline, or have not completed appropriate undergraduate courses, will be advised to take suitable courses (Disciplinary Knowledge) so they are prepared for the Advanced Disciplinary Knowledge Courses. These may include Engineering Contracts, Deformation Monitoring Surveys, Project and System Skills, Rock and Slope Engineering, Transport Systems – Part 1: Network Analysis and more.

ADVANCED DISCIPLINARY KNOWLEDGE COURSES

Students do the following four courses: Urban Transport Planning, Transport Modelling, Transport Systems – Part 2: Queuing Theory, and Traffic Management and Control.

ELECTIVES

At least one course (6 UOC) must be taken from the approved list of Engineering and Technical Management Courses. We recommend Engineering Economics and Financial Management, Project Management Framework, and Environmental Management. All other electives may 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.

RESEARCH

Students who have not completed a four year degree which included a thesis must complete a 12 UOC Masters Thesis research component that gives them the opportunity to broaden their understanding of a topic that they are passionate about. The research will be supervised by an appropriate academic. All students must undertake GSOE9010 Engineering Postgraduate Coursework Research Essentials (6 UOC).

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

ENTRY REQUIREMENTS

Masters: You need a recognised four year Bachelor degree in an appropriate area of engineering with at least Honours II/2 or equivalent or an average mark of at least 65% over the final two years.

Graduate Diploma: You 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 Civil Engineering) can apply for credit for up to 48 UOC for the Masters (effectively reducing it to one year full time) or up to 24 UOC for the Graduate Diploma. Full details can be found on the program handbook page.

HAVE YOU CONSIDERED?

We also offer Postgraduate Programs in Civil Engineering and Environmental Engineering.

ACADEMIC IN FOCUS

S Travis Waller is Director of the faculty-wide Research Centre for Integrated Transport Innovation (rCITI) based in the School of Civil and Environmental Engineering. His chair was established by International infrastructure-based advisory company, **Evans & Peck**, in 2010.

Professor Waller supervises a number of student research projects including:

- Real-time travel time prediction for motorways and motor way corridors
- Accounting for reliability in ridership modelling
- Regional dynamic transport network planning
- Environmental impact of real-time traffic management.

"I would advise prospective transport engineers to focus not just on their analytical skills, but also on how those skills tie into real world applications. For transport, we deal with humans, not electrons or information packets, and humans have psychology and individual behaviour. So you really have to get a wide range of skills, from engineering principles, to physics, economics, and human psychology. Transport engineering is about synthesising and bringing together all of these interdisciplinary concepts into one field."

PROFESSOR S TRAVIS WALLER
SCHOOL OF CIVIL AND
ENVIRONMENTAL ENGINEERING

WATER ENGINEERING: CATCHMENTS TO COAST

For engineers and other professionals interested in expanding their knowledge and skills in water engineering, we offer advanced training in Water Engineering: catchments to coast – which looks at the full cycle of water in natural and engineered systems. Courses are offered by staff who are national leaders in their areas of expertise, and who often undertake higher level research and consultancy services for industry and government. It is ideally suited for practicing water engineers and recent graduates planning a career in large-scale water engineering.

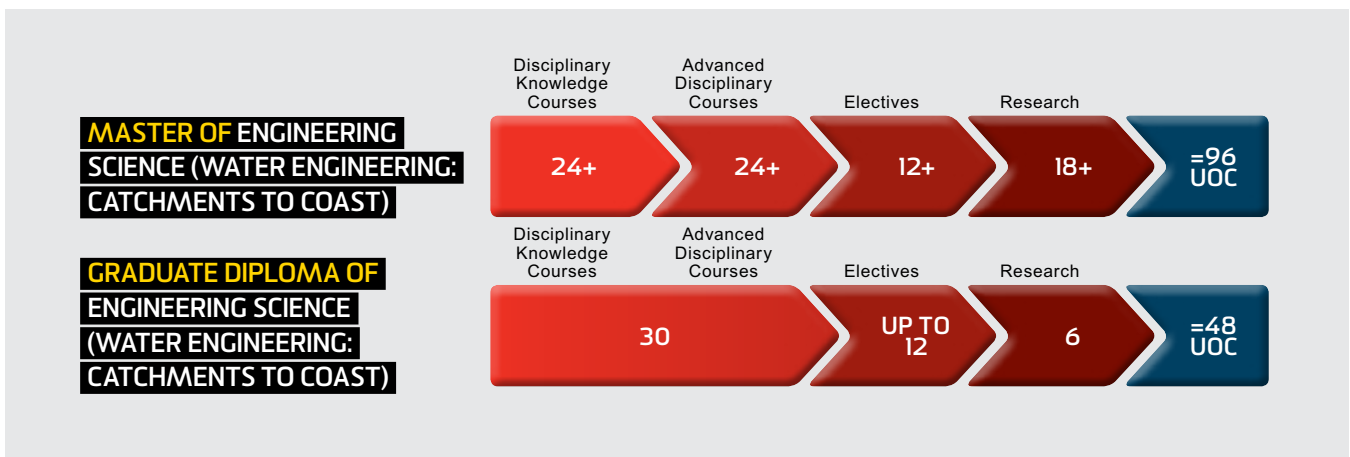
PROGRAM OPTIONS	PROGRAM CODE	UNITS OF CREDIT	DURATION*	COMMENCE
Master of Engineering Science (Water Engineering: catchments to coast)	CVENIT8338	96	2 years	Feb, Jul
Graduate Diploma of Engineering Science (Water Engineering: catchments to coast)	CVENHT5341	48	1 year	Feb, Jul

* Eligible students may apply for credit for up to eight courses (48 UOC) of Masters programs 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.

MASTER OF ENGINEERING SCIENCE (WATER ENGINEERING: CATCHMENTS TO COAST)

Taught by industry leaders, this program provides advanced study options in large-scale water engineering such as surface water hydrology, urban hydrology and stormwater management, catchment and water resources modelling, groundwater investigations, hydrodynamics of rivers and estuaries, and coastal engineering related to waves, beaches and coastal infrastructure.

TYPICAL PROGRAM STRUCTURE



DISCIPLINARY KNOWLEDGE COURSES

Students who are moving from a different discipline, or have not completed appropriate undergraduate courses, will be advised to take suitable courses (Disciplinary Knowledge) so they are prepared for the Advanced Disciplinary Knowledge Courses. These may include Operations and Projects, Sustainability in Construction, Rock and Slope Engineering, Groundwater Investigations, Advanced Water Engineering, and more.

ADVANCED DISCIPLINARY KNOWLEDGE COURSES

Students can select at least four courses from a list that includes Urban Hydrology, Catchment and Water Resources Modelling, Channels, Rivers and Estuaries, Waves and Beaches, and more.

ELECTIVES

At least one course (6 UOC) must be taken from the approved list of Engineering and Technical Management Courses. We recommend Engineering Economics and Financial Management, Project Management Framework, Environmental Management and Sustainability Assessment and Risk Analysis in Water and Energy Systems Planning. All other electives may 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.

RESEARCH

Students who have not completed a four year degree which included a thesis must complete a 12 UOC Masters Thesis research component that gives them the opportunity to broaden their understanding of a topic that they are passionate about. The research will be supervised by an appropriate academic. All students must undertake GSOE9010 Engineering Postgraduate Coursework Research Essentials (6 UOC).

ENTRY REQUIREMENTS

Masters: You need a recognised four year Bachelor degree in an appropriate area of engineering with at least Honours II/2 or equivalent or an average mark of at least 65% over the final two years.

Graduate Diploma: You 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 Civil Engineering) can apply for credit for up to 48 UOC for the Masters (effectively reducing it to one year full time) or up to 24 UOC for the Graduate Diploma. Full details can be found on the program handbook page.

HAVE YOU CONSIDERED?

We also offer Postgraduate Programs in Civil Engineering and Environmental Engineering.

WATER RESEARCH LABORATORY

The School of Civil and Environmental Engineering's Water Research Laboratory is a leading international consulting and research laboratory with over fifty years' experience. With a commercial projects team working alongside academics, and unique large-scale physical facilities, WRL provides expert advice and strategic solutions to industry and government relating to hydraulics, groundwater, and coastal and estuarine engineering.

For more information visit wrl.unsw.edu.au

WATER, WASTEWATER AND WASTE ENGINEERING

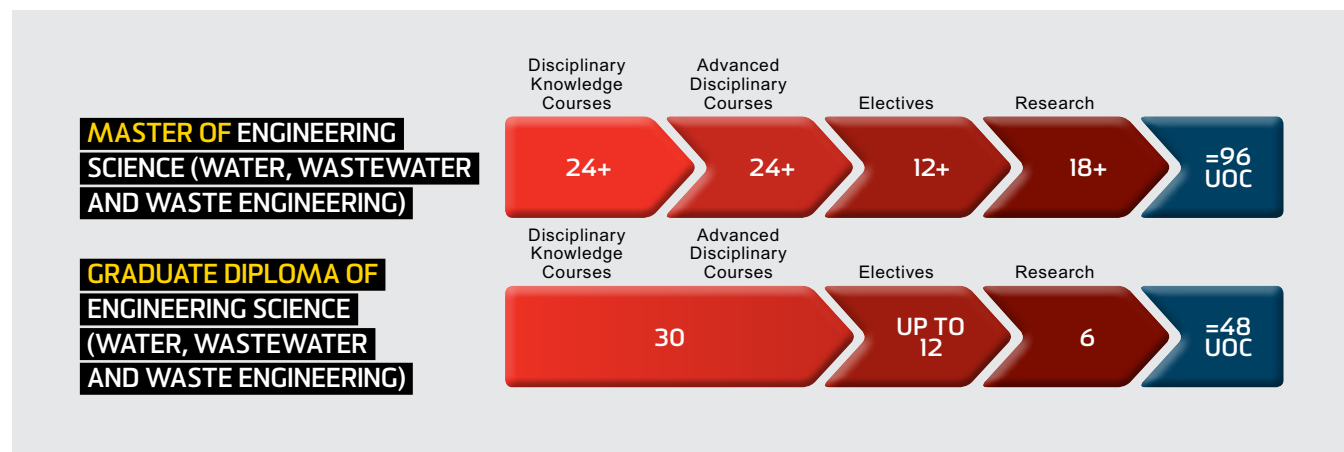
Water is vital for almost every process on earth, yet the sourcing and use of water is something that is subject to much scrutiny and debate. Effective and sustainable water and wastewater treatment and environmentally responsible waste management are now absolutely crucial for urban populations, given the environmental challenges facing Australia and the rest of the world. For engineers and other professionals interested in expanding their knowledge and skills in water, wastewater and waste engineering, we offer a fantastic program which looks at current and future technologies for water usage, wastewater treatment and waste disposal.

PROGRAM OPTIONS	PROGRAM CODE	UNITS OF CREDIT	DURATION*	COMMENCE
Master of Engineering Science (Water, Wastewater and Waste Engineering)	CVENKT8338	96	2 years	Feb, Jul
Graduate Diploma of Engineering Science (Water, Wastewater and Waste Engineering)	CVENJT5341	48	1 year	Feb, Jul

MASTER OF ENGINEERING SCIENCE (WATER, WASTEWATER AND WASTE ENGINEERING)

This specialisation provides technical professionals the opportunity to learn the fundamentals of current practice in this field and to engage with existing and future technologies. It is designed to develop skills in analysis and design of water, wastewater and waste treatment facilities and is ideally suited for both practising engineers and recent graduates planning a career in water, wastewater and waste engineering. As well as the Masters program, students can opt for a Graduate Diploma if they don't qualify for entry or if they would like a taste of postgraduate education.

TYPICAL PROGRAM STRUCTURE



DISCIPLINARY KNOWLEDGE COURSES

Students who are moving from a different discipline, or have not completed appropriate undergraduate courses, will be advised to take suitable courses (Disciplinary Knowledge) so they are prepared for the Advanced Disciplinary Knowledge Courses. These may include Groundwater Investigations, Sustainable Infrastructure, Advanced Water Quality Principles, Contaminated Site Engineering and more.

ADVANCED DISCIPLINARY KNOWLEDGE COURSES

Students can select at least four courses from a list that includes Solid Waste Management, Hazardous Waste Management, Water Treatment, Water and Wastewater Analysis and more.

ELECTIVES

At least one course (6 UOC) must be taken from the approved list of Engineering and Technical Management Courses. We recommend Environmental Management and Sustainability Assessment and Risk Analysis in Water and Energy Systems Planning. All other electives may 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.

RESEARCH

Students who have not completed a four year degree which included a thesis must complete a 12 UOC Masters Thesis research component that gives them the opportunity to broaden their understanding of a topic that they are passionate about. The research will be supervised by an appropriate academic. All students must undertake GSOE9010 Engineering Postgraduate Coursework Research Essentials (6 UOC).

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

ENTRY REQUIREMENTS

Masters: You need a recognised four year Bachelor degree in an appropriate area of engineering with at least Honours II/2 or equivalent or an average mark of at least 65% over the final two years.

Graduate Diploma: You 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 Civil Engineering) can apply for credit for up to 48 UOC for the Masters (effectively reducing it to one year full time) or up to 24 UOC for the Graduate Diploma. Full details can be found on the program handbook page.

HAVE YOU CONSIDERED?

We also offer Postgraduate Programs in Civil Engineering and Environmental Engineering.

STUDENT TESTIMONIAL

"I was working as a water supply engineer in Malawi, my home country, and I chose to do the Master of Engineering Science in Water, Wastewater and Waste at UNSW because it is in line with my career. Here I am learning about advanced water and wastewater technologies and the latest research in water, wastewater and environmental management, as well as the key principles of sustainable development."

LETTOW CHILONGO

MASTER OF ENGINEERING SCIENCE (WATER, WASTEWATER AND WASTE ENGINEERING)



FACULTY OF ENGINEERING

POSTGRADUATE COURSEWORK

PROGRAM NAME (PROGRAM CODE)	PROGRAM STRUCTURE (UOC)*	MINIMUM ACADEMIC ENTRY REQUIREMENT	MINIMUM IELTS REQUIREMENTS			PROGRAM DURATION	ESTIMATE ANNUAL FEES		SI	S2
			OVERALL	READING/ WRITING	SPEAKING/ LISTENING		DOMESTIC	INTERNATIONAL		
ENGINEERING COURSEWORK PROGRAMS										
Master of Engineering Science (8338)	16 courses (96 UOC)	4 year BE with at least Hons II/2 OR a Grad Dip in Engineering with a credit average	6.5	6.0	6.0	2 years	\$27,360	\$35,520	✓	✓
Master of Engineering (8621)	16 courses (96 UOC)	3 or 4 year engineering degrees that are equivalent to the first 3 years of an accredited engineering degree (minimum credit average)	6.5	6.0	6.0	2 years	\$27,360	\$35,520	✓	✓
Master of Food Science (8037)	16 courses (96 UOC)	Food Science degree with at least Hons II/2 OR Grad Dip in Food Science	6.5	6.0	6.0	2 years	\$27,360	\$35,520	✓	✓
Master of Information Technology (8543)	16 courses (96 UOC)	4 year degree in science or engineering with credit average OR 3 year degree in computer science or engineering with credit average OR Grad Dip in IT with no failures	6.5	6.0	6.0	2 years	\$27,360	\$35,520	✓	✓
Master of Biomedical Engineering (8660)	12 courses (72 UOC)	4 year BE with at least Hons II/2 OR 4 year degree in biomedical health-related discipline with at least Hons II/2 OR Grad Dip in Biomedical Engineering	6.5	6.0	6.0	1.5 years	\$27,360	\$35,520	✓	✓
Master of Mining Engineering (8335)	12 courses (72 UOC)	4 year degree in Mining Engineering with Hons (or defined cognate disciplines) OR Grad Dip in Mining Engineering	6.5	6.0	6.0	1.5 years	\$32,640	\$35,520	✓	✓
GRADUATE DIPLOMA PROGRAMS										
Graduate Diploma of Engineering Science (5341)	8 courses (48 UOC)	4 year BE with at least Hons II/2 or equivalent OR a Grad Cert in Engineering with a credit average	6.5	6.0	6.0	1.5 years	\$27,360	\$35,520	✓	✓
Graduate Diploma of Food Science (5037)	8 courses (48 UOC)	Food Science or cognate discipline with average of at least 65%	6.5	6.0	6.0	1.5 years	\$27,360	\$35,520	✓	✓
Graduate Diploma of Information Technology (5543)	12 courses (72 UOC)	3 year degree in discipline with mathematics up to at least year two level with a credit average OR Grad Cert in Computing	6.5	6.0	6.0	1.5 years	\$27,360	\$35,520	✓	✓
Graduate Diploma of Mining Engineering (5335)	8 courses (48 UOC)	3 year degree in Mining Engineering or defined cognate disciplines OR Grad Cert in Mining Engineering with 65% WAM and no fails. Minimum 1 year industry experience	6.5	6.0	6.0	1.5 years	\$32,640	\$35,520	✓	✓
GRADUATE CERTIFICATE PROGRAMS										
Graduate Certificate of Computing (7543)	4 courses (24 UOC)	3 year degree in science or engineering OR at least 5 years work experience in area of Engineering or Science	6.5	6.0	6.0	6 mth	\$13,680	\$17,760	✓	✓
Graduate Certificate of Mining Engineering (7335)	4 courses (24 UOC)	Minimum 4 years relevant professional experience in mining industry OR Degree in defined technical disciplines plus 1 year relevant industry experience	6.5	6.0	6.0	6 mth	\$16,320	17,760	✓	✓

* UOC = Unit of credit – means the value attached to each academic course in terms of its contribution to the completion of an award program. The majority of courses are 6 UOC. A full-time load is 24 UOC in the two main teaching semesters. Coursework programs require the successful completion of a specified number of UOC and fees are charged on the basis of UOC enrolment.

POSTGRADUATE COURSEWORK FEES

Because each student's study choices are different, it's impossible to provide a definitive cost of studying at UNSW. But here are a few things to consider when calculating your expected fees:

Fees are course-based – fees for international students are set according to the course (subject) and not the program. The fees reflect the relative cost of delivering the course. For that reason, your total tuition fees will vary depending on which courses you choose.

Fees vary each year – Fees for programs fluctuate from year to year. The tuition fees listed here are for students in 2014.

Actual fees for 2015 will be released in late 2014. Please refer to my.unsw.edu.au/studentfees/TuitionFees.html

FEE HELP is an Australian Government loan to assist full fee-paying students to help pay part or all of the tuition fees. FEE HELP is available to students who are Australian citizens or Australian permanent residents with a humanitarian visa. For more information on FEE HELP, visit studyassist.gov.au For advice about whether you're eligible for a FEE HELP loan, please contact the FEE HELP enquiry line on 1800 020 108.

THINGS YOU NEED TO KNOW

APPLICATION INFORMATION

1. CHOOSE YOUR PROGRAM

Use this guide to help you choose the best study options based on your interests, personal commitments, experience and career ambitions.

2. CHECK THE ENTRY REQUIREMENTS

You will find all the necessary information in this guide, but for the latest information, check the Online Handbook at handbook.unsw.edu.au

3. APPLY ONLINE AT [APPLY.UNSW.EDU.AU](http://apply.unsw.edu.au)

When you lodge an application, you'll receive a letter of acknowledgement by email with your student ID number and instructions on how to submit the supporting documentation to us.

4. TRACK YOUR OFFER

Track the progress of your application online at my.unsw.edu.au

5. ACCEPT YOUR OFFER

If your application is successful you will be emailed a letter of offer. Follow the instructions in the letter to accept your offer and commence your studies with us.

QUICK LINKS

Online Handbook	handbook.unsw.edu.au
Class timetables	timetable.unsw.edu.au
UNSW International	international.unsw.edu.au
Student Life@UNSW	studentlife.unsw.edu.au
UNSW Alumni	alumni.unsw.edu.au
Accommodation	rc.unsw.edu.au
Careers and Employment	careers.unsw.edu.au
FEE HELP	studyassist.gov.au



ENTRY REQUIREMENTS

To gain entry to UNSW, you'll need to successfully meet the **academic entry requirements** for the course that you choose (these can be found in the earlier part of this book). Most international students will require a student visa to study in Australia, and you will also need to pass certain **English language requirements**.

STUDENT VISA INFORMATION

Applying for a student visa can be quite a complex process so make sure you plan ahead so you have plenty of time to submit all your documentation. You will find more information about applying for student visa on the following websites:

Dept of Immigration and Border Protection – immi.gov.au

UNSW International – international.unsw.edu.au

Austrade – studyinaustralia.gov.au

ENGLISH LANGUAGE REQUIREMENTS

If English isn't your first language, you must provide evidence that your ability meets our requirements. You must submit results from an acceptable English test taken in the two years prior to studying at UNSW. See our English language requirements policy at unsw.edu.au/elp

OTHER QUALIFICATIONS AND OTHER

ENGLISH TESTS – We also accept a number of academic qualifications and other English tests for meeting our English language requirements. For information about these visit unsw.edu.au/elp

ENGLISH TEST SCORES REQUIRED –

International English Language Testing System (IELTS) – Academic

Overall minimum score of 6.5 with a minimum score of 6.0 in the subtests of listening, reading, speaking and writing is required.

Test of English as a Foreign Language (TOEFL)

Internet-based test: overall minimum score of 90 with a minimum in writing of 24.

Paper-based test: overall minimum score of 577 with a minimum score of 5.0 in the Test of Written English.

Pearson Test of English – Academic

Overall minimum score of 68.

EVIDENCE OF PRIOR EDUCATION TAUGHT AND ASSESSED IN ENGLISH

If you've completed at least one year of full-time academic study at an approved post-secondary/tertiary institution where English is the sole language, you may not be required to sit a language test. A statement or certificate from the registrar/principal of the institution must be provided. You must have completed this study no more than two years prior to studying at UNSW. Contact the UNSW Admissions Office to check whether your previous study can be recognised: admissions@unsw.edu.au

VISA REQUIREMENT

The Department of Immigration and Border Protection may request English language test results to issue you with a visa. Please check the visa requirements in your country. For more information please visit immi.gov.au

COMPLETION OF ENGLISH STUDIES AT UNSW INSTITUTE OF LANGUAGES

If you do not meet UNSW's English language requirements but meet the academic entry requirements, you can be issued with a conditional package offer of admission. To fulfil the conditions of your offer, you must successfully complete further studies in English.

UNSW Institute of Languages offers a University English Entry Course (UEEC), and once successfully completed, the condition of your offer would be fulfilled and your UNSW degree and English language program can then be packaged under one visa covering your entire stay in Sydney.

UNSW INSTITUTE OF LANGUAGES

Study with UNSW Institute of Languages to meet the English language entry requirements to start your UNSW degree. UNSW Institute of Languages offers a comprehensive range of English language programs which cover academic English, general English and professional English. Programs are developed and delivered by highly qualified and experienced teachers who are specialists in teaching English. They will help you achieve the language skills needed for your academic and career success.

Demand for programs is high, and we recommend that you apply at least three months before your intended start date for a UNSW Institute of Languages program.

FOUNDATION ENGLISH ENTRY COURSE (FEEC) – If you are planning to enrol in UNSW Foundation Studies prior to starting a Bachelor degree, successfully completing this intensive English course meets the English language entry requirements, and you won't need to retake an IELTS exam afterwards.

UNIVERSITY ENGLISH ENTRY COURSE (UEEC) – This intensive English course may help you get into your UNSW degree sooner. On successful completion of UEEC, you will be accepted into the relevant UNSW degree without having to retake an IELTS or similar exam. Course material is based on UNSW resources and enhanced through the use of online learning and teaching activities. Minimum accepted score: C+ with a minimum of 20 in the writing component. Some UNSW programs require a higher grade.

TERTIARY ORIENTATION PROGRAM – If you already meet the English language entry requirements for UNSW but need to gain confidence or improve your English skills for an academic environment, you may want to take this intensive five-week course before starting your UNSW degree. It will also give you the chance to settle into Sydney, familiarise with the local accent and meet fellow students.

TO APPLY

Request an application form for UNSW Institute of Language by phoning us on +61 2 9385 5396 (fax 61 2 9662 2651), sending us an email to admissions@unswglobal.unsw.edu.au or visiting our website at languages.unsw.edu.au

UNSW Global CRICOS Provider Code: 01020K.

A HOME AWAY FROM HOME

Students at UNSW have a number of accommodation options available to them – from on and off-campus University accommodation to private housing options like rental properties and homestays.

BE PREPARED FOR YOUR ARRIVAL

Living in Sydney will be a big change. If you don't have a confirmed place on campus, we recommend you arrive three to four weeks before classes start so you can look for accommodation, settle in and attend orientation sessions.

TEMPORARY ACCOMMODATION

If you require temporary accommodation when you first arrive, try to organise it before you get here. Options include private hotels, motels, hostels, lodges or furnished apartments (A\$45-A\$300 per day).

INTERNATIONAL STUDENT HOUSING ASSISTANCE (ISHA)

If you need help looking for temporary or private accommodation, or if University accommodation isn't available when you apply, Student Development International (SDI) could help. student.unsw.edu.au/housing-assistance

UNSW ON AND OFF-CAMPUS ACCOMMODATION OPTIONS

With six residential colleges, seven self-catered apartment buildings and multiple affiliated communities, UNSW offers a wide range of on and off-campus accommodation options. Living in university accommodation means you can enjoy the benefits of living on or close to campus with greater security, social opportunities, easy access to university facilities, and the convenience of fully furnished accommodation. rc.unsw.edu.au

UNSW COLLEGES. Residential colleges provide a choice of full board, partly catered and self-catered style accommodation. They also offer a range of gender options including male only, female only, and mixed male and female accommodation. Dietary requirements like Halal, Kosher and vegetarian can be catered for. Costs range from A\$310-A\$495 per week. rc.unsw.edu.au/colleges/unsw-colleges

UNSW APARTMENTS. These offer independent, apartment-style accommodation for undergraduates, postgraduates, couples and families with children. All apartments are furnished and include a kitchen and bathroom. Costs vary depending on the number of rooms, condition and location (A\$210-A\$550 per week). rc.unsw.edu.au/apartments/accommodation

PRIVATE ACCOMMODATION OPTIONS

From apartments to houses, private accommodation options give students the chance to experience an independent lifestyle, with complete control over expenses, housemates and location.

RENTAL PROPERTY. There are lots of properties available for rent in the suburbs surrounding the University. Costs vary according to the number of bedrooms, condition and location. When renting, you can expect to sign a six or 12-month lease and pay rent in advance, plus a refundable security deposit called a 'bond'. Most rental properties are unfurnished and costs like electricity, gas and telephone are not included. Costs range from A\$150-A\$250 per week in a shared house. international.unsw.edu.au/living-sydney/accommodation/private-accommodation/

HOMESTAY – FULL BOARD AND ROOM-ONLY. Homestay options include full board and single room-only accommodation. Full board usually includes a furnished room, use of facilities in the private home of a family or single person plus breakfast and dinner, and some may also include bed linen, a laundry service and weekly room cleaning. Single room-only homestays include a furnished room, gas and electricity expenses. You'll be responsible for your own food, cooking, cleaning, laundry and telephone costs. Costs range from A\$180-A\$320 per week. View our online accommodation database by visiting unsw.studystays.com.au

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W: engineering.unsw.edu.au

FB: [unswfacultyofengineering](https://www.facebook.com/unswfacultyofengineering)



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DISCLAIMER: UNSW programs, courses and any arrangements for programs and fees including staff allocated, as stated in the guide or any other University publication, announcement or advice of the University, are an expression of intent only and are not to be taken as a firm offer or undertaking. The University reserves the right to make alterations to any matter contained within this publication without notice. Information in this Guide is accurate as of August 2014, but may be amended without notice by the University.

All costs and fees are provided in Australian Dollars (AUD\$). Any agreement with the University does not remove the right to take action under Australia's consumer protection laws.

COMPLIANCE: The Education Services for Overseas Students (ESOS) Act 2000 sets out the legal framework governing delivery of education to overseas students studying in Australia on a student visa. UNSW in providing education services to overseas students complies with the ESOS Framework and the National Code of Practice for Registration Authorities and Providers of Education and Training to Overseas Students 2007 (The National Code). A description of the ESOS framework can be found at the following link: <https://aei.gov.au/regulatory-information/pages/regulatoryinformation.aspx>

CRICOS Provider Code: NSW 00098G, ACT 00100G
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