2013 Events Calendar

Open Day 2013
City West Campus: Sunday 18 August, 70 North Terrace, Adelaide
visit unisa.edu.au/openday

Program Information Sessions 2013
Mawson Lakes Campus Day
Thursday 19 September, Mawson Lakes Campus

For more information and to register, visit unisa.edu.au/infosessions

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It is with great pleasure that I welcome our new students to the University of South Australia.

Our University is a modern, innovative institution that has been built on more than 150 years of teaching, learning and research excellence. It offers a diverse range of undergraduate and postgraduate programs in the areas of business, education, arts, social sciences, health sciences, information technology, engineering and the environment. These programs are designed with strong professional emphasis and in close partnership with industry.

The University's continued upward growth trajectory is reflected in a number of recent global performance indicators. For example, in the 2012 QS World University Rankings, the University of South Australia was again rated in the top three per cent of more than 10,000 universities worldwide. The University also received an overall ranking in the top five of 28 Australian institutions in the International Student Barometer.

As you will discover, the University of South Australia is a truly international institution that takes great pride in its cultural diversity. Having recently arrived in Adelaide from the UK to take up my appointment as Vice Chancellor, I know first-hand the excitement and challenges that come with establishing yourself in a new community. In order to help you settle comfortably into your new environment, the University provides a range of support programs and services, and I encourage you to make the most of these.

Our global network of more than 170,000 alumni spanning 124 countries also serves as a valuable source of advice and experience for anyone seeking information about the University, in addition to enabling you to keep in touch with your fellow graduates and to remain an integral part of the University story when you have completed your studies.

I wish you every success on your academic journey, and I look forward to seeing you on campus in the near future.

Professor David Lloyd
Vice Chancellor and President
Why the University of South Australia is the right choice for you

**Practicums**
We help you practise what we teach. In some of our degree programs, practical placements start in the first year. You get the opportunity to watch others in your chosen profession and, gradually and under supervision, you’ll get a chance to put your own learning into practise.

**Communication**
You’ll learn how to communicate in a professional environment so that you can conduct your career in a global context. To make sure, the University has embedded several graduate qualities into each of our programs so that, when you graduate, you will step into the professional world ready to make an immediate contribution.

**Skills development**
You’ll learn to think creatively and laterally. You’ll be given every opportunity to develop extra skills that will help you polish your professional abilities. The University has strong links with industry; most of our teaching staff have been actively involved in industry and have practised what they teach.

**Student experience**
It’s not all hard work. Yes, we have high quality facilities, the best teachers and the most relevant programs but the University of South Australia also provides a wonderful student experience, an environment of community, of networks of friends and peers, of engagement in clubs and societies, so that your student days are rich and fulfilling, days that you’ll remember forever.
A little about us

We’re ranked amongst the best in the world The University of South Australia is in the top 3 per cent of universities around the world, according to the 2012 QS World University Rankings.

We’re young and successful (like you) In the Times Higher Education world university rankings the University of South Australia was ranked 65th globally and 6th in Australia amongst institutions less than 50 years old. In the 2012 QS World University Rankings of 400 universities aged under 25, we were ranked 11th in the world.

We are digital yet personal The University of South Australia has invested $11 million in a new and fully integrated Personal Learning Environment which is a state-of-the-art e-learning platform. In fact, the University scored a 93 per cent satisfaction rate for virtual learning facilities (compared with 89 per cent globally and nationally) in the 2012 International Student Barometer.

Our research excellence is rated as world-class (or above)

The second Excellence in Research Australia (ERA) assessment released in late 2012 rated more than 86 per cent of our assessed research as world standard or above.

Among the highlights of ERA 2012 were our continued outstanding results in the flagship area of chemical sciences (including physical chemistry and resources engineering and extractive metallurgy), as well as the real gains we have recorded in a range of other important research fields. Fields such as the sciences, including mathematical, environmental, information computing, medical and health, along with the built environment and design, applied economics, business and management, and marketing; studies in human society, and studies in creative arts and writing.

We aim to be the intellectual resource that industry, and society in general, turns to for new solutions for problems and new ideas for industry and society.

You’re our focus

Our teaching and learning systems are focussed on you. We combine high-tech e-learning with academic interest and involvement in your studies, and we give you all the help you need to succeed in your studies. We want you to be the best possible version of yourself.
Why study engineering at UniSA?
Students of the University of South Australia's engineering programs undertake a number of common courses over the duration of the program. This core provides a solid foundation in fundamental engineering knowledge and offers the opportunity for students to transfer between specialisations.

Students of our engineering programs also benefit from up-to-date teaching and learning facilities such as the new Materials and Minerals Science learning and research hub located at the Mawson Lakes campus. Graduates of the programs are well-equipped for the workplace, gaining hands-on industry experience through work placements and the use of experiential learning facilities such as the Mechatronics laboratory. Salaries for engineering graduates can start from $62,000* and range up to $130,000** in management roles.

* engineeringdegrees.com.au
** ABS labour data statistics

Teaching experience
With UniSA's experienced and highly acclaimed academic staff, students can learn from outstanding professionals. Associate Professor Mahfuz Aziz, an academic committed to the success of UniSA's engineering programs won the nation’s highest honour for university teachers – the Prime Minister's Award for Australian University Teacher of the Year in 2009. Dr Aziz is an exceptional teacher and is highly regarded amongst his peers and students.

Professor Julie Mills was presented with the Teaching Excellence Award for 2009 by the Australasian Association for Engineering Education. Professor Mills was selected on the basis of her outstanding contribution to teaching. Teaching is a priority for Professor Mills and this is evident in her commitment to her students.

Projects and industry experience
All students are required to complete 12 weeks of full-time industry experience in a relevant field. This provides you with an opportunity to gain valuable work experience in an industry setting where you can apply your skills and knowledge to practical problems.

Final year student research projects in all engineering disciplines are linked to industry. Student projects may be conducted at industry sites, sponsored by industry and are often co-supervised by industry leaders. Industry knowledge is embedded in our programs through guest speakers and design and industry projects.

Engineers Without Borders Challenge
The Engineers Without Borders (EWB) Challenge gives students the hands-on experience which is desired in industry. EWB brings together engineering students, young graduates, experienced engineers and even non-engineers as a team to help solve basic, small scale engineering problems faced by many people in need. EWB aims not only to contribute to new and ongoing development projects, but also provides development training and experience.

Engineering scholarships and awards
Our scholarships offer financial assistance and, in many instances, valuable work experience opportunities which often lead to employment. New scholarships are constantly being developed so we recommend you regularly visit unisa.edu.au/scholarship
Pathways
Entry into the University of South Australia's engineering programs is available via a range of pathway options, including TAFE, Foundation Studies, the ATN Engineering Test, the Associate Degree in Engineering and the Special Tertiary Admissions Test (STAT).

World-class research
By studying a Bachelor of Engineering at the University of South Australia, you will be part of an institution that boasts outstanding research results in this field, and you will benefit from the strong links between research and teaching within this discipline.

This is demonstrated through the 2012 Excellence in Research for Australia (ERA) report by the Australian Research Council, where the University of South Australia's research in the discipline of engineering was rated 4 — a performance above world standard. This is the highest rating for research in engineering among South Australian institutions.

In engineering research sub-disciplines, the University of South Australia was also successful in achieving high ratings in the ERA 2012 results, with Resources Engineering and Extractive Metallurgy receiving an ERA rating of 5 (well above world standard). Materials Engineering and Mechanical Engineering research both rated 4 (above world standard) and Civil Engineering and Electrical and Electronic Engineering rated 3 (at world standard).

Mawson Lakes Campus
The Mawson Lakes Campus is home to innovative, high-tech research and learning facilities and has collaborative links with the adjacent, internationally-renowned Technology Park. Located 20 minutes from the Adelaide city centre, the campus is conveniently accessible via train or bus, and has ample car parking available. As a student you’ll enjoy a safe, friendly environment, welcoming campus grounds, manicured green spaces, buzzing cafes and leisure facilities. You also have access to a complete range of student services that help you get the most out of your university experience.
Program overview
The program aims to prepare you for a professional career in engineering in the disciplines of civil, electrical and information engineering, mechanical and materials engineering. The program provides a pathway to all Bachelor of Engineering programs and specialisations offered at the University of South Australia.

What will I study?
You are required to complete 72 units of study to obtain this associate degree. The program contains introductory studies in mathematics, physics and chemistry and courses from the common core in engineering. In addition you can select electives from introductory studies in civil engineering, electrical and information engineering and mechanical and materials engineering.

Who will employ me?
Completion of the associate degree allows you to transfer into the bachelor degree (with credit) or undertake employment and return to study at a later time. Upon graduation you will typically secure employment as a technologist, designer, specialist technician, or managing officer in your respective discipline.
Bachelor of Engineering (Civil and Environmental Management)

SATAC code: 434861
Program code: LBM1
CRICOS code (international students only): 067385B
ATAR (February 2013 cut-off): 78.90
UniSA Preferred Score (guaranteed entry): 80.00
Program length: 4
Prerequisites: SACE Stage 2 Mathematical Studies
Assumed knowledge: SACE Stage 2 Physics
Home campus: Mawson Lakes
Accepts Special Entry (STAT): Yes
External study available: No
Part-time study available: Yes
TAFE credit available: Yes
Honours study available: Yes
Program fees: Commonwealth supported
Program fees (international students only): A$28,000 per annum
Scholarships available: unisa.edu.au/scholarship

Program overview
The Bachelor of Engineering (Civil and Environmental Management) places emphasis on project-based, industry-focused learning for the sustainable development of our environment related infrastructure. The program aims to prepare you for a professional career in civil engineering and environmental management. This is an important component of all civil engineering developments which must have the environmental impacts associated with each project taken into account before development commences.

Accelerated three-year Engineering program
It is possible to complete this program in three years by undertaking courses offered during study period breaks. This accelerated option will be offered by the Program Director to those high achieving students with outstanding grades in the first year.

What will I study?
As a student of the University of South Australia’s engineering program you will undertake a number of common core courses over the duration of your program. This ensures that the foundation in fundamental engineering is strong no matter what your chosen specialisation, and provides the opportunity for you to transfer between programs and specialisations if you wish to do so.

In addition, you will take courses related to your chosen specialisation, which have been carefully selected to provide a solid foundation of knowledge in the engineering sub-discipline (see program structure for further information). These courses also focus on preparing you for professional practice in engineering and provide the opportunity to undertake projects including the Engineers Without Borders project.

This broad base in engineering and science knowledge is built upon with the courses needed for civil engineering careers as well as providing hands-on experience in areas such as CAD and surveying, and an introduction to the main specialisations available in civil engineering.

In third year, you will focus in detail on the disciplines of structural, water and wastewater, geotechnical and environmental engineering and their interaction with the environment.

Fourth year provides you with the opportunity to specialise in the area of environmental management in a civil engineering context.

Up on successful completion of this program you will have the opportunity to gain credit for four courses if you successfully apply to enter the Master of Environmental Management and Sustainability (LMES) which can then be completed after graduation from the bachelor degree with an additional year of full-time study. Alternatively, if you obtain Honours in your bachelor degree, you may apply for entry into the Master of Engineering (Civil), which can also be completed with an additional year of full-time study.

Who will employ me?
This degree prepares you for a career as a professional civil engineer in design consultancies, government agencies, the construction industry or related areas. Our graduates are recognised by employers as being industry-ready and have consistently achieved excellent employment outcomes and high commencing salaries, particularly in the areas of construction, project management and design consultancy.

Graduates from this particular program in the last few years have been employed in consulting firms with environmental specialisations such as Golder & Associates, PB Consultants, Aurecon (and many others) as well as government bodies such as SA Water, DTEI and local government. According to MyUniversity, 89.7% of UniSA graduates secured employment following graduation.

Professional accreditation
This program is professionally accredited by Engineers Australia and is designed to meet the requirements for graduate membership of Engineers Australia and comparable international institutions.

Honours
Students achieving a credit level average at the end of third year will be invited to enrol in Honours courses in fourth year. Successful completion of the program and the Honours project course may lead to the award of a degree with Honours.

Program requirements

FIRST YEAR
First Semester (Study Period 1, 2 or 3)
Computer Techniques
Engineering Materials
Mathematical Methods for Engineers 1
Sustainable Engineering Practice

Second Semester (Study Period 4, 5 or 6)
Mathematical Methods for Engineers 2
Engineering Mechanics

SECOND YEAR
First Semester (Study Period 1, 2 or 3)
Engineering Modelling
Mechanics of Materials
Geospatial Science for Engineers

Second Semester (Study Period 4, 5 or 6)
Introduction to Water Engineering

Civil Engineering Practice
Water Chemistry

Road Design and Traffic Management

THIRD YEAR
First Semester (Study Period 1, 2 or 3)
Professional Engineering Practice

Soil Mechanics

Hydraulics and Hydrology

Reinforced Concrete Design

Water Resources Systems Design

Structural Analysis

Geotechnical Engineering

FOURTH YEAR
First Semester (Study Period 1, 2 or 3)
Civil Engineering Design Project

Environmental Engineering and Modelling

Water Quality Processes

OR

Seminar in Sustainability

Second Semester (Study Period 4, 5 or 6)
Civil Engineering Project Formulation

Civil Engineering Investigation Project

OR

Civil Engineering Honours Project

Environmental Impact Assessment

Water Quality Management
Bachelor of Engineering (Civil and Project Management)

SATAC code: 434811
Program code: LBM1
CRICOS code
(international students only): 063506G
ATAR (February 2013 cut-off): 71.85
UniSA Preferred Score (guaranteed entry): 80.00
Program length: 4
Prerequisites: SACE Stage 2 Mathematical Studies
Assumed knowledge: SACE Stage 2 Physics
Home campus: Mawson Lakes
Accepts Special Entry (STAT): Yes
External study available: No
Part-time study available: Yes
TAFE credit available: Yes
Honours study available: Yes
Program fees: Commonwealth supported
Program fees (international students only): A$28,000 per annum
Scholarships available: unisa.edu.au/scholarship

Program overview
Civil engineers serve society by developing infrastructure such as bridges, buildings, airports, roads, railways, water and wastewater supply, treatment and reuse systems. Technical solutions developed by civil engineers must take into consideration social, environmental and financial constraints. As a graduate of this program you will be particularly prepared for careers that focus on the management of civil engineering projects in the construction industry, design consultancies, government agencies, local government and related areas. The Bachelor of Engineering (Civil and Project Management) places particular emphasis on project work, which is a significant component in every year of the program. In the final year of the degree, more than 50 per cent of the coursework is project-based, including a major industry related research project and a class design project that models industry practice. Such a strong industry focus ensures that you are familiar with industry needs and modes of operation when you commence employment. As a civil and project management student you will undertake 12 weeks of compulsory industrial experience during your study. This experience is highly regarded by previous students and prospective employers. Industry experience also helps you to determine your engineering career pathway as you are able to experience particular sectors prior to graduation.

Accelerated three-year Engineering program
It is possible to complete this program in three years by undertaking courses offered during study period breaks. This accelerated option will be offered by the Program Director to those high achieving students with outstanding grades in the first year.

What will I study?
As a student of the University of South Australia’s engineering program you will undertake a number of common core courses over the duration of your program. This ensures that the foundation in fundamental engineering is strong no matter what your chosen specialisation, and provides the opportunity for you to transfer between programs and specialisations if you wish to do so.

In addition, you will take courses related to your chosen specialisation, which have been carefully selected to provide a solid foundation of knowledge in the engineering sub-discipline (see program structure for further information). These courses also focus on preparing you for professional practice in engineering and provide the opportunity to undertake projects including the Engineers Without Borders project.

The second year of the program develops broad technical knowledge and skills in civil engineering and related areas such as geology and geographic information systems. In third year, you will focus in detail on the disciplines of structural, water and wastewater, geotechnical and environmental engineering. Fourth year provides you with the opportunity to specialise in the area of project management in a civil engineering context through the completion of four project management courses, as well as design and research project work.

Upon successful completion of this program you will have the opportunity to gain credit for four courses if you successfully apply to enter the Master of Environmental Management and Sustainability (LMES) which can then be completed after graduation from the bachelor degree with an additional year of full-time study. Alternatively, if you obtain Honours in your bachelor degree, you may apply for entry into the Master of Engineering (Civil), which can also be completed with an additional year of full-time study.

Who will employ me?
This degree prepares you for a career as a professional civil engineer with additional skills in project management. As a graduate of the civil engineering program you will be recognised by employers as being industry-ready as previous graduates have consistently achieved excellent employment outcomes and high commencing salaries, particularly in the areas of construction, project management and design consultancy.

According to MyUniversity, 89.7% of UniSA graduates secured employment following graduation. Employers of UniSA graduates include companies such as Baulderstone, Built Environments, Hansen & Yuncken and the Department for Transport, Energy and Infrastructure.

Professional accreditation
This program is professionally accredited by Engineers Australia and is designed to meet the requirements for graduate membership of Engineers Australia and comparable international institutions.

Honours
Students achieving a credit level average at the end of third year will be invited to enrol in Honours courses in fourth year. Successful completion of the program and the Honours project course may lead to the award of a degree with Honours.

Program requirements

FIRST YEAR
First Semester (Study Period 1, 2 or 3)
Computer Techniques
Engineering Materials
Mathematical Methods for Engineers 1
Sustainable Engineering Practice
Second Semester (Study Period 4, 5 or 6)
Mathematical Methods for Engineers 2
Engineering and Environmental Geology
Engineering Mechanics
Engineering Design and Innovation

SECOND YEAR
First Semester (Study Period 1, 2 or 3)
Engineering Modelling
Mechanics of Materials
Geospatial Science for Engineers
Electives
Second Semester (Study Period 4, 5 or 6)
Introduction to Water Engineering
Water Chemistry
Civil Engineering Practice
Road Design and Traffic Management

THIRD YEAR
First Semester (Study Period 1, 2 or 3)
Professional Engineering Practice E
Soil Mechanics
Steel and Timber Design
Hydraulics and Hydrology
Second Semester (Study Period 4, 5 or 6)
Water Resources Systems Design
Geotechnical Engineering
Reinforced Concrete Design
Structural Analysis

FOURTH YEAR
First Semester (Study Period 1, 2 or 3)
Industrial Experience N
Civil Engineering Design Project
Principles of Project Management
Project Risk Management
Second Semester (Study Period 4, 5 or 6)
Civil Engineering Project Formulation
Civil Engineering Investigation Project
OR
Civil Engineering Honours Project
Project Control Methods
Project Leadership and Teams
Bachelor of Engineering (Civil and Structural)

SATAC code: 434941
Program code: LBMI
CRICOS code (international students only): 074114M
ATAR (February 2013 cut-off): 80.00
UniSA Preferred Score (guaranteed entry): 80.00
Program length: 4
Prerequisites: SACE Stage 2 Mathematical Studies
Assumed knowledge: SACE Stage 2 Physics
Home campus: Mawson Lakes
Accepts Special Entry (STAT): Yes
External study available: No
Part-time study available: Yes
TAFE credit available: Yes
Honours study available: Yes
Program fees: Commonwealth supported
Program fees (international students only): A$28,000 per annum
Scholarships available: unisa.edu.au/scholarship

Program overview
Civil engineers design, build and manage bridges, buildings, roads, water supply and storage systems, wastewater systems and transport systems while taking into consideration any social, environmental, and financial constraints. They are responsible for the infrastructure and resources that are essential for the daily functioning of cities, towns and rural areas. Civil and structural engineers have a particular focus on the design and construction of buildings, bridges and other structural components of that infrastructure.

The program has a strong practical, project and industry focus.

Accelerated three-year Engineering program
It is possible to complete this program in three years by undertaking courses offered during study period breaks. This accelerated option will be offered by the Program Director to those high achieving students with outstanding grades in the first year.

What will I study?
As a student of the University of South Australia’s engineering program you will undertake a number of common core courses over the duration of your program. This ensures that the foundation in fundamental engineering is strong no matter what your chosen specialisation, and provides the opportunity for you to transfer between programs and specialisations if you wish to do so.

In addition, you will take courses related to your chosen specialisation, which have been carefully selected to provide a solid foundation of knowledge in the engineering sub-discipline (see program structure for further information). These courses also focus on preparing you for professional practice in engineering and provide the opportunity to undertake projects including the Engineers Without Borders project.

The second year of the program develops broad technical knowledge and skills in civil engineering and related areas such as geology, surveying and an introduction to the main specialisations available in civil engineering.

In third year you will focus in detail on the disciplines of structural, geotechnical, environmental, water and wastewater engineering and the interaction with the environment. Fourth year provides you with the opportunity to specialise in structural engineering through the choice of four electives and projects in a related area. Half of the fourth year is devoted to project work, both design and investigation.

As a student in the program you will undertake 12 weeks of compulsory industrial experience during your study. This experience is highly regarded by previous students and prospective employers. You will have the opportunity to apply and integrate the knowledge and skills you have gained during your program in an industry setting. Industry experience also helps you to determine your engineering career pathway as you are able to experience particular sectors prior to graduation.

If you obtain Honours in your bachelor degree, you may apply for entry to the Master of Engineering (Civil), which can also be completed with an additional year of full-time study. Within the Master's degree you can take further courses in, project management, structures, transport, water, geotechnical or environmental engineering and specialise in one of these areas if you wish.

Who will employ me?
As a graduate of this program you will be prepared for a professional civil engineering career in the development and implementation of structures such as buildings, bridges and storage tanks that form a large part of civil engineering projects, an area that is critical for the sustainable development of all countries worldwide. According to MyUniversity, 89.7% of UniSA graduates secured employment following graduation.

Professional recognition
The successful completion of this program is designed to meet the requirements for graduate membership of Engineers Australia and comparable international institutions through the Washington Accord. For further information on these organisations visit washingtonaccord.org and engineersaustralia.org.au. Such accreditation is provisional until the program produces its first graduates.

Honours
Students achieving a credit level average at the end of third year will be invited to enrol in Honours courses in fourth year. Successful completion of the program and the Honours project course may lead to the award of a degree with Honours.

Program requirements

FIRST YEAR
First Semester (Study Period 1, 2 or 3)
Computer Techniques
Engineering Materials
Mathematical Methods for Engineers 1
Sustainable Engineering Practice

Second Semester (Study Period 4, 5 or 6)
Mathematical Methods for Engineers 2
Engineering and Environmental Geology
Engineering Mechanics
Engineering Design and Innovation

SECOND YEAR
First Semester (Study Period 1, 2 or 3)
Engineering Modelling
Mechanics of Materials
Geospatial Science for Engineers
Elective

Second Semester (Study Period 4, 5 or 6)
Introduction to Water Engineering
Water Chemistry
Civil Engineering Practice
Road Design and Traffic Management

THIRD YEAR
First Semester (Study Period 1, 2 or 3)
Professional Engineering Practice E
Soil Mechanics
Steel and Timber Design
Hydraulics and Hydrology

Second Semester (Study Period 4, 5 or 6)
Geotechnical Engineering
Reinforced Concrete Design
Structural Analysis
Water Resources Systems Design

FOURTH YEAR
First Semester (Study Period 1, 2 or 3)
Industrial Experience N
Civil Engineering Design Project
Design of Composite Structures
Advanced Concrete Structures

Second Semester (Study Period 4, 5 or 6)
Civil Engineering Project Formulation
Civil Engineering Investigation Project OR
Civil Engineering Honours Project
Earthquake and Masonry Engineering
Advanced Steel Structures

Program requirements

FIRST YEAR
First Semester (Study Period 1, 2 or 3)
Computer Techniques
Engineering Materials
Mathematical Methods for Engineers 1
Sustainable Engineering Practice

Second Semester (Study Period 4, 5 or 6)
Mathematical Methods for Engineers 2
Engineering and Environmental Geology
Engineering Mechanics
Engineering Design and Innovation

SECOND YEAR
First Semester (Study Period 1, 2 or 3)
Engineering Modelling
Mechanics of Materials
Geospatial Science for Engineers
Elective

Second Semester (Study Period 4, 5 or 6)
Introduction to Water Engineering
Water Chemistry
Civil Engineering Practice
Road Design and Traffic Management

THIRD YEAR
First Semester (Study Period 1, 2 or 3)
Professional Engineering Practice E
Soil Mechanics
Steel and Timber Design
Hydraulics and Hydrology

Second Semester (Study Period 4, 5 or 6)
Geotechnical Engineering
Reinforced Concrete Design
Structural Analysis
Water Resources Systems Design

FOURTH YEAR
First Semester (Study Period 1, 2 or 3)
Industrial Experience N
Civil Engineering Design Project
Design of Composite Structures
Advanced Concrete Structures

Second Semester (Study Period 4, 5 or 6)
Civil Engineering Project Formulation
Civil Engineering Investigation Project OR
Civil Engineering Honours Project
Earthquake and Masonry Engineering
Advanced Steel Structures
An interest in how things are constructed and industry-focused learning through the Bachelor of Engineering (Civil and Structural) are the building blocks at the base of Thomas Farren’s career which has so far led him into a graduate position at Santos.

‘At high school I was quite good at maths and science and also had an interest in how things worked,’ Thomas says of his choice adding that ‘engineering is a good choice of profession because it can lead in to a number of different job opportunities’.

Practical experience gained through the program as well as a cadetship with the Department of Planning, Transport and Infrastructure (DPTI) has since helped Thomas get the most out of his studies through the application of his knowledge to real-life situations.

As a Gavin Wanganeen Indigenous scholarship recipient, Thomas aims to be a positive role model for young people and encourages Indigenous students to go to university and succeed in their fields of interest.
Bachelor of Engineering (Civil and Transport)

SATAC code: 434801
Program code: LBM1
CRICOS code (international students only): 063507G
ATAR (February 2013 cut-off): 73.30
UniSA Preferred Score (guaranteed entry): 80.00
Program length: 4
Prerequisites: SACE Stage 2 Mathematical Studies
Assumed knowledge: SACE Stage 2 Physics
Home campus: Mawson Lakes
Accepts Special Entry (STAT): Yes
External study available: No
Part-time study available: Yes
TAFE credit available: Yes
Honours study available: Yes
Program fees: Commonwealth supported
Program fees (international students only): A$28,000 per annum
Scholarships available: unisa.edu.au/scholarship

Program overview
Civil engineers serve society by developing infrastructure such as bridges, buildings, airports, roads, railways, water and wastewater supply, treatment and reuse systems. Civil engineers are creative and innovative problem solvers, who design, construct, manage, maintain, or rehabilitate all aspects of this infrastructure. The technical solutions they develop must take into consideration social, environmental and financial constraints. The Bachelor of Engineering (Civil and Transport) places particular emphasis on the application of theory through focused project and assignment work. Project work is a significant component in every year of the program. In the final year of the degree more than 50 per cent of the coursework is project-based, including a major industry-related research project and a class design project that models industry practice. Such a strong industry focus ensures that you are already familiar with industry needs and modes of operation when you commence employment.

As a student in the program you will undertake 12 weeks of compulsory industrial experience during your study. This experience is highly regarded by previous students and prospective employers. You will have the opportunity to apply and integrate the knowledge and skills you have gained during your program in an industry setting. Industry experience also helps you to determine your engineering career pathway as you are able to experience particular sectors prior to graduation. Accelerated three-year Engineering option

It is possible to complete this program in three years by undertaking courses offered during study period breaks. This accelerated option will be offered by the Program Director to those high achieving students with outstanding grades in the first year.

What will I study?
As a student of the University of South Australia’s engineering program you will undertake a number of common core courses over the duration of your program. This ensures that the foundation in fundamental engineering is strong no matter what your chosen specialisation, and provides the opportunity for you to transfer between programs and specialisations if you wish to do so.

In addition, you will take courses related to your chosen specialisation, which have been carefully selected to provide a solid foundation of knowledge in the engineering sub-discipline (see program structure for further information). These courses also focus on preparing you for professional practice in engineering and provide the opportunity to undertake projects including the Engineers Without Borders project.

The second year of the program develops broad technical knowledge and skills in civil engineering and related areas such as geology and geographic information systems. In third year, you will focus in detail on the disciplines of transport, structural, water and wastewater and geotechnical engineering, and their interaction with the environment. Fourth year provides you with the opportunity to specialise in the area of transport engineering through advanced coursework and project work, both design and research. If you obtain Honours in your bachelor degree, you may apply for entry to the Master of Engineering (Civil), which can also be completed with an additional year of full-time study.

Who will employ me?
According to MyUniversity, 89.7 per cent of UniSA graduates secured employment following graduation. Graduates from this program will continue to be in high demand due to the significant shortage of transport engineers that exists in industry today which is predicted to continue in the foreseeable future. Recent employers of graduates from this program have included organisations such as Aurecon, MFY & Associates and HDS and government bodies such as Department of Transport, Energy and Infrastructure.

Professional accreditation
This program is professionally accredited by Engineers Australia and is designed to meet the requirements for graduate membership of Engineers Australia and comparable international institutions.

Honours
Students achieving a credit level average at the end of third year will be invited to enrol in Honours courses in fourth year. Successful completion of the program and the Honours project course may lead to the award of a degree with Honours.

Program requirements

FIRST YEAR
First Semester (Study Period 1, 2 or 3)
Computer Techniques
Engineering Materials
Mathematical Methods for Engineers 1
Sustainable Engineering Practice

Second Semester (Study Period 4, 5 or 6)
Mathematical Methods for Engineers 2
Engineering Mechanics

SECOND YEAR
First Semester (Study Period 1, 2 or 3)
Engineering Modelling
Mechanics of Materials
Geospatial Science for Engineers

Elective 1

Second Semester (Study Period 4, 5 or 6)
Introduction to Water Engineering
Civil Engineering Practice

THIRD YEAR
First Semester (Study Period 1, 2 or 3)
Professional Engineering Practice E

Second Semester (Study Period 4, 5 or 6)

FOURTH YEAR
First Semester (Study Period 1, 2 or 3)
Industrial Experience N

Second Semester (Study Period 4, 5 or 6)

Civil Engineering Project Formulation
Civil Engineering Investigation Project

Civil Engineering Honours Project

Transport Modelling

Transport, Land Use and Environment N
Bachelor of Engineering (Civil)

SATAC code: 434481
Program code: LBMI
CRICOS code (international students only): 056091G
ATAR (February 2013 cut-off): 71.30
UniSA Preferred Score (guaranteed entry): 80.00
Program length: 4
Prerequisites: SACE Stage 2 Mathematical Studies
Assumed knowledge: SACE Stage 2 Physics
Home campus: Mawson Lakes
Accepts Special Entry (STAT): Yes
External study available: No
Part-time study available: Yes
TAFE credit available: Yes
Honours study available: Yes
Program fees: Commonwealth supported
Program fees (international students only): A$28,000 per annum
Scholarships available: unisa.edu.au/scholarship

Program overview
The Bachelor of Engineering (Civil) places particular emphasis on the application of theory through focused project and assignment work. In the final year of the degree, more than 50 per cent of the coursework is project based, including a major industry-related research project and a class design project that models industry practice.

Accelerated three-year Engineering program
It is possible to complete this program in three years by undertaking courses offered during study period breaks. This accelerated option will be offered by the Program Director to those high achieving students with outstanding grades in the first year.

What will I study?
As a student of the University of South Australia’s engineering program you will undertake a number of common core courses over the duration of your program. This ensures that the foundation in fundamental engineering is strong no matter what your chosen specialisation, and provides the opportunity for you to transfer between programs and specialisations if you wish to do so.

In addition, you will take courses related to your chosen specialisation, which have been carefully selected to provide a solid foundation of knowledge in the engineering sub-discipline (see program structure for further information). These courses also focus on preparing you for professional practice in engineering and provide the opportunity to undertake projects including the Engineers Without Borders project.

The second year of this program develops broad technical knowledge and skills in civil engineering and related areas such as geology and geographic information systems. In the third year, you will focus in detail on the disciplines of structural, water and wastewater, geotechnical and environmental engineering. Fourth year provides you with the opportunity to continue with a broad cross-section of civil engineering studies through the choice of four electives and projects. Half of the fourth year is devoted to project work, both design and research.

Upon successful completion of this program with Honours you have the opportunity to apply to enter the Master of Engineering (Civil), which can be completed after graduation from the bachelor degree with an additional year of full-time study. This program can be taken as a double degree with the Bachelor of Laws. Please refer to the University of South Australia Law brochure for more information.

Who will employ me?
This degree prepares you for a career as a professional civil engineer in design consultancies, government agencies, the construction industry or related areas. Our graduates are recognised by employers as being industry-ready and have consistently achieved excellent employment outcomes and high commencing salaries, particularly in the areas of construction, project management and design consultancy. According to MyUniversity, 89.7 per cent of UniSA graduates secured employment following graduation.

Professional accreditation
This program is professionally accredited by Engineers Australia and is designed to meet the requirements for graduate membership of Engineers Australia and comparable international institutions.

Honours
Students achieving a credit level average at the end of third year will be invited to enrol in Honours courses in fourth year. Successful completion of the program and the Honours project course may lead to the award of a degree with Honours.
Arna Smith
Engineering - Civil

Arna Smith’s early interest in physics and mechanics led her into a career in civil engineering, a field that she believes plays an important role in the development of modern society. ‘The different applications of engineering often go unnoticed, however, often society cannot move forward without them.’

Choosing to study at UniSA because of its hands-on approach to learning, Arna has been able to apply her knowledge in a practical and realistic manner. As a recipient of a scholarship designed to encourage women in engineering, Arna is currently undertaking an Honours project reviewing integrated aquaculture/horticulture systems in Australia. ‘Throughout my undergraduate studies, I was exposed to different specialisations within civil engineering, and water engineering immediately grabbed my interest.’

Now specialising in both structural and water engineering and with plans to undertake postgraduate studies, Arna hopes to one day be able to volunteer her skills and knowledge to improve lifestyles and the infrastructure in developing countries through Engineers Without Borders.
Bachelor of Engineering (Computer Systems)

Program overview
The Bachelor of Engineering (Computer Systems) program provides you with the technical knowledge and skills required of computer and electronic engineers and computer scientists as well as the essential skills required for professional practice. This program has been designed in consultation with industry representatives to produce highly skilled professional engineers who are sought by industries in which computer systems are designed, manufactured or applied.

As a graduate you will become a specialist in your field and will have practical experience in the application of theory in real industry settings. At UniSA, significant investments have been made in student and research facilities in an effort to create outstanding learning environments for our students. Engineering students also have access to impressive facilities including the Experience 1 Studio and Engineering Mechatronics Lab, which will help you gain valuable engineering practice experience throughout your studies.

What will I study?
As a student of the University of South Australia’s engineering program you will undertake a number of common core courses over the duration of your program. This ensures that the foundation in fundamental engineering is strong no matter what your chosen specialisation, and provides the opportunity for you to transfer between programs and specialisations if you wish to do so.

In addition, you will take courses related to your chosen specialisation, which have been carefully selected to provide a solid foundation of knowledge in the engineering sub-discipline (see program structure for further information). These courses also focus on preparing you for professional practice in engineering and provide the opportunity to undertake projects including the Engineers Without Borders project.

The Bachelor of Engineering (Computer Systems) covers the theoretical principles of operation and practical design of computer and electronic systems. Emphasis is placed on the design of computer hardware, and is complemented by a thorough knowledge of computer science and the development of a high level of proficiency in software engineering, including practical programming skills.

You will also study the methods for design, development and integration of computer systems, including computer networks, real-time systems, systems level design and advanced computer hardware. Additionally, you will have the opportunity to apply the principles and practices of your studies in the final-year project. With the majority of projects sponsored by industry, you will be able to work on the development of a range of computer systems for real world applications.

As a computer systems student, you will also undertake a compulsory three-month, full-time industry placement in a relevant field. This provides you with an opportunity to gain valuable work experience in an industry setting, where you can apply your skills and knowledge to practical problems and gain valuable links to industry. This experience prepares you for a professional career in computer systems, while outstanding candidates are often offered further employment opportunities.

You also have the option to study abroad on the International Student Exchange program to gain international experience by completing part of your degree overseas. For more information visit: unisa.edu.au/exchange.

Who will employ me?
Upon graduation you will typically secure employment as a computer systems engineer, computer systems administrator, customer support engineer, embedded system designer, IT officer, network administrator, network design engineer, software engineer, systems engineer and research assistant.

Professional accreditation
This program is professionally accredited by Engineers Australia and is designed to meet the requirements for graduate membership of Engineers Australia and comparable international institutions.

Honours
Students achieving a credit level average at the end of third year will be invited to enrol in Honours courses in fourth year. Successful completion of the program and the Honours project course may lead to the award of a degree with Honours.

Program requirements

FIRST YEAR
First Semester (Study Period 1, 2 or 3)
Mathematical Methods for Engineers 1
Introduction to Computer Systems
Computer Techniques
Sustainable Engineering Practice

Second Semester (Study Period 4, 5 or 6)
Mathematical Methods for Engineers 2
Electricity and Electronics
Engineering Physics N
Engineering Design and Innovation

SECOND YEAR
First Semester (Study Period 1, 2 or 3)
Programming for Engineers
Electrical Circuit Theory
Discrete Mathematics
Methods of Applied Mathematics 1

Second Semester (Study Period 4, 5 or 6)
Microcontroller Programming and Interfacing
Electronic Devices and Circuits
Programming Fundamentals
Signals and Systems

THIRD YEAR
First Semester (Study Period 1, 2 or 3)
Digital Circuits and Systems
Data Communications and Networks
Data Structures

Second Semester (Study Period 4, 5 or 6)
User Interfaces
Computer Organisation and Design
Embedded System Design
Systems Engineering
Practical Industrial Experience Reports

FOURTH YEAR
First Semester (Study Period 1, 2 or 3)
Professional Engineering Practice E
System Design Techniques
Computer Science Topics for Software Engineers
Electrical and Information Engineering Project 1

Second Semester (Study Period 4, 5 or 6)
Computer Systems Elective 1
Internet Technology
Electrical and Information Engineering Project 2

Honours
Second Semester (Study Period 4, 5 or 6)
Computer Systems Elective 1
Internet Technology
Electrical and Information Engineering Project 2

Honours
University Elective 1

SATAC code: 434441
Program code: LBIF
CRICOS code
(international students only): 057812D
ATAR (February 2013 cut-off): 73.85
UniSA Preferred Score (guaranteed entry): 80.00
Program length: 4
Prerequisites: SACE Stage 2 Mathematical Studies
Assumed knowledge: SACE Stage 2 Physics
Home campus: Mawson Lakes
Accepts Special Entry (STAT): Yes
External study available: No
TAFE credit available: Yes
Honours study available: Yes
Program fees: Commonwealth supported
Program fees (international students only): A$28,000 per annum
Scholarships available: unisa.edu.au/scholarship
The Bachelor of Engineering (Electrical and Electronic) offers a range of courses focused on engineering, mathematics, applied science and computer applications. Courses in first and second year cover electrical engineering, engineering communication and innovation, electrical circuit theory, and computer hardware and programming. The final two years may include advanced courses such as signals and systems and real-time systems and control.

You may choose to specialise in a major including computer systems engineering, electrical power engineering, electrical and mechatronic engineering, electronics and communications, networking and communications, optical and electronic engineering, and systems engineering. You also have the option to undertake a 15-week structured engineering work placement in the fourth year of the program as an alternative to a semester of on-campus study. This provides you with an opportunity to gain valuable work experience in an industry setting, where you can apply your skills and knowledge to practical problems and gain valuable links to industry.

You also have the option to study abroad on the International Student Exchange program to gain international experience by completing part of your degree overseas. For more information visit: unisa.edu.au/exchange.

Who will employ me?
The program prepares you for immediate employment providing the skill sets which are desirable to a wide range of industry sector employers. Employment and career opportunities exist in industry sectors including electrical power and energy, automation, manufacturing, electronics, defence and environmental monitoring.

Electronics engineers design, develop, test and maintain electronic parts and systems used in the fields of computers, communications, navigation, industry and entertainment.

Electronic and electrical engineers are in demand within various sectors including communications, defence, government, broadcast media, internet service providers, entertainment, automotive plants, computer manufacturers, consumer electronics, power generation, infrastructure and distribution, renewable energy, water, mining, transport, and avionics.

Professional recognition
The successful completion of this program is designed to meet the requirements for graduate membership of Engineers Australia and comparable international institutions through the Washington Accord. For further information on these organisations visit washingtonaccord.org and engineersaustralia.org.au. Such accreditation is provisional until the program produces its first graduates.

Honours
Upon achieving a credit level average at the end of third year you may be allowed to enrol in the Honours courses in engineering in your final year. Successful completion of the program and the Honours project courses may lead to the award of the Bachelor of Engineering with Honours.
David Scholten
Engineering - Electrical

David Scholten’s early interest in the application of science has led him down a career path combining power engineering and electronics. Currently on placement in the vehicle electronics and architecture team at the Defence Science Technology Organisation, David spends his days developing power systems models and providing support to the team.

Finding creative ways to apply the fundamental knowledge in maths, physics and chemistry, such as writing programs based on equations he did not yet understand was the key to David’s success as a first-year student. ‘When it comes time to learn how such an equation is derived, you will already understand the inputs and outputs, which can be a huge advantage,’ David explains.

Looking forward, David aims to use his understanding of what research organisations and industry want to develop and acquire as the basis for a PhD in power electronics.

‘It is always better to treat the study as something you enjoy,’ David says.
Bachelor of Engineering (Electrical and Mechatronic)

SATAC code: 434451
Program code: LBIF
CRICOS code (international students only): 057811E
ATAR (February 2013 cut-off): 73.25
UniSA Preferred Score (guaranteed entry): 80.00
Program length: 4
Prerequisites: SACE Stage 2 Mathematical Studies
Assumed knowledge: SACE Stage 2 Physics
Home campus: Mawson Lakes
Accepts Special Entry (STAT): Yes
External study available: No
Part-time study available: Yes
TAFE credit available: Yes
Honours study available: Yes
Program fees: Commonwealth supported
Program fees (international students only): A$28,000 per annum
Scholarships available: unisa.edu.au/scholarship

Program overview

The Bachelor of Engineering (Electrical and Mechatronic) program leads to a rewarding career in an ever-expanding and exciting discipline.

Mechatronics is an interdisciplinary area of engineering that combines mechanical engineering with electrical engineering and computer science. A typical mechatronic system senses signals from the environment, processes them to generate data, then transforms that data into forces, motions and actions. Mechatronics has broad applications, for example, the design of control circuits aimed at achieving preset tasks with minimum human intervention.

Mechatronics encompasses robotics, machine tool control, automated guided vehicles, medical diagnostics and prosthetics. Its applications are only limited by human imagination and ingenuity.

As a graduate of this innovative program you will be keenly sought after for a wide range of endeavours and you will be a professionally recognised engineer.

Engineering students also have access to the Experience-1 Studio and the Engineering Mechatronics Lab, which will help students gain valuable engineering practice throughout their studies.

What will I study?

As a student of the University of South Australia’s engineering program you will undertake a number of common core courses over the duration of your program. This ensures that the foundation in fundamental engineering is strong no matter what your chosen specialisation, and provides the opportunity for you to transfer between programs and specialisations if you wish to do so.

In addition, you will take courses related to your chosen specialisation, which have been carefully selected to provide a solid foundation of knowledge in the engineering sub-discipline (see program structure for further information).

These courses also focus on preparing you for professional practice in engineering and provide the opportunity to undertake projects including the Engineers Without Borders project.

The Bachelor of Engineering (Electrical and Mechatronic) has substantial interdisciplinary content. The early years of the program provide a strong grounding in engineering mathematics, applied science and computer applications, balanced by a range of broadening studies. Later in the program, special aspects of generation, transmission, distribution and utilisation of electrical energy are emphasised along with the design, control and integration of electromotion devices. There is strong emphasis on practice-based learning, encouraged by challenging and creative project work. Modern modelling and simulation techniques are used extensively.

The program provides you with sound communication and management skills and an understanding of social and environmental issues. This is achieved through courses in professional management and broadening education. In the final year, you apply the principles and practices of your studies in a major industry-based project.

The final-year project enables you to have hands-on practical experience and develop direct personal links to industry and professional networks where outstanding candidates may be offered further employment opportunities.

As an electrical and mechatronic engineering student, you will also undertake a compulsory, three-month, full-time industry placement in a related field. This provides you with an opportunity to gain valuable work experience in an industry setting in which you can apply your skills and knowledge to practical problems.

You also have the option to study abroad on the International Student Exchange program to gain international experience by completing part of your degree overseas. For more information visit: unisa.edu.au/exchange

Who will employ me?

As a graduate of this program you will be recognised as a versatile engineer, competent to meet challenges in diverse engineering applications. You will be qualified to control power stations, automotive applications, electrical vehicles, alternative energy systems, household appliances as well as industrial and mobile robots.

Your daily tasks may typically involve the design of electrical and mechatronic engineering devices and systems, supervision of manufacture, investigation of complex systems, computer applications and management.

Professional accreditation

This program is professionally accredited by Engineers Australia and is designed to meet the requirements for graduate membership of Engineers Australia and comparable international institutions.

Honours

Upon achieving a credit level average at the end of third year you may be allowed to enrol in the Honours courses in engineering in your final year. Successful completion of the program and the Honours project courses may lead to the award of the Bachelor of Engineering with Honours.

Program requirements

FIRST YEAR

First Semester (Study Period 1, 2 or 3)
Mathematical Methods for Engineers 1
Introduction to Computer Systems
Electromechanics
Methods of Applied Mathematics 1

Second Semester (Study Period 4, 5 or 6)
Microcontroller Programming and Interfacing
Electronic Devices and Circuits
Signals and Systems
Calculus 3

SECOND YEAR

First Semester (Study Period 1, 2 or 3)
Programming for Engineers
Electrical Circuit Theory

Second Semester (Study Period 4, 5 or 6)
Microcontroller Programming and Interfacing
Electronic Devices and Circuits
Signals and Systems

THIRD YEAR

First Semester (Study Period 1, 2 or 3)
Electrical Machines 1
Control Systems
Data Communications and Networks

Second Semester (Study Period 4, 5 or 6)
Mechatronic System Integration
Power System Analysis
Embedded System Design
Practical Industrial Experience Reports
Systems Engineering

FOURTH YEAR

First Semester (Study Period 1, 2 or 3)
Professional Engineering Practice
Advanced Control
Autonomous Mechatronic Systems
Electrical and Information Engineering Project 1

Second Semester (Study Period 4, 5 or 6)
Electrical and Mechatronic elective
Power Electronics and Drives
Electrical and Information Engineering Project 2

Honours

Second Semester (Study Period 4, 5 or 6)
Electrical and Mechatronic elective

Electrical and Information Engineering Project 2

Honours

University Elective 1
The program includes topics on conventional power engineering and emerging areas of renewable energy systems such as: electricity generation from various renewable sources, distributed generation, energy efficiency, design of stand-alone systems for isolated communities, operation of micro-grid and smart grid, integration of renewable sources to conventional grid, grid codes, protection and safety, challenges in operating systems with intermittent renewable sources, smart meter, demand response, energy storage, electric vehicles etc. Students of the program will also study social, economic and political issues related to electricity generation and global warming.

Who will employ me?

The program prepares you for immediate employment and provides you with skill sets applicable to electricity and power supply, storage and utilisation. Working with renewable energy sources could mean employment in roles involving wind, solar or geothermal power in private or public sector organisations.

Professional accreditation

The successful completion of this program is designed to meet the requirements for graduate membership of Engineers Australia and comparable international institutions through the Washington Accord. For further information on these organisations visit washingtonaccord.org and engineeringaustralia.org.au. Such accreditation is provisional until through the Washington Accord. For further information on these organisations visit washingtonaccord.org and engineeringaustralia.org.au. Such accreditation is provisional until

Honours

Upon achieving a credit level average at the end of third year you may be allowed to enrol in the Honours courses in engineering in your final year. Successful completion of the program and the Honours project courses may lead to the award of the Bachelor of Engineering with Honours.
Bachelor of Engineering (Electrical and Systems Engineering)

Program overview
The Bachelor of Engineering (Electrical and Systems Engineering) prepares you for a professional career in systems engineering. Systems engineers are responsible for the design and operation of all kinds of engineered systems including defence equipment, infrastructure, telecommunications systems, industrial systems and automotive products. They are also responsible for the exploration, definition and specification, design, modelling, and successful construction and integration of whole systems. You will learn how to undertake large systems design such as the development of new submarines or ships as well as apply systems engineering principles to progress designs stage by stage to the required level of complexity.

At UniSA, significant investments have been made in student and research facilities in an effort to create outstanding learning environments for our students. Engineering students also have access to the Experience 1 Studio and the Engineering Mechatronics Lab, which will help you gain valuable engineering practice throughout your studies.

What will I study?
As a student of the University of South Australia’s engineering program you will undertake a number of common core courses over the duration of your program. This ensures that the foundation in fundamental engineering is strong no matter what your chosen specialisation, and provides the opportunity for you to transfer between programs and specialisations if you wish to do so.

In addition, you will take courses related to your chosen specialisation, which have been carefully selected to provide a solid foundation of knowledge in the engineering sub-discipline (see program structure for further information). These courses also focus on preparing you for professional practice in engineering and provide the opportunity to undertake projects including the Engineers Without Borders project.

The Bachelor of Engineering (Electrical and Systems Engineering) program will provide a range of courses focused on engineering, mathematics, applied science and computer applications, with your skills underpinned by broad systems thinking and design principles. Topics in first and second year include electrical engineering, engineering communication, design and innovation, electrical circuit theory, computer hardware, and programming in Java. The third year will provide specialist training in systems engineering with courses including Engineering Systems Thinking and Systems Engineering.

In the fourth and final year you will apply your theoretical knowledge in a major industry-based project. You will also study advanced and innovative courses in electrical and systems engineering such as System Project Environment and Principles of Test and Evaluation.

As an electrical and systems engineering student, you will also undertake a compulsory three-month, full-time industry placement in a related field. This provides you with an opportunity to gain valuable work experience in an industry setting, where you can apply your skills and knowledge to practical problems and gain valuable links to industry. You also have the option to study abroad on the International Student Exchange program to gain international experience by completing part of your degree overseas. For more information visit: unisa.edu.au/exchange

Who will employ me?
As a graduate of this program you may typically secure employment in areas such as systems integration, network systems administration, defence, customer support, embedded system design, IT, logistics administration, network design, software and systems engineering and research.

Professional accreditation
The successful completion of this program is designed to meet the requirements for graduate membership of Engineers Australia and comparable international institutions through the Washington Accord. For further information on these organisations visit washingtonaccord.org and engineersaustralia.org.au. Such accreditation is provisional until the program produces its first graduates.

Honours
Upon achieving a credit level average at the end of third year you may be allowed to enrol in the Honours courses in engineering in your final year. Successful completion of the program and the Honours project courses may lead to the award of the Bachelor of Engineering with Honours.
Bachelor of Engineering (Electronics and Communications)

SATAC code: 434751
Program code: LBIF
CRICOS code (international students only): 057814B
ATAR (February 2013 cut-off): 94.20
UniSA Preferred Score (guaranteed entry): 80.00
Program length: 4
Prerequisites: SACE Stage 2 Mathematical Studies
Assumed knowledge: SACE Stage 2 Physics
Home campus: Mawson Lakes
Accepts Special Entry (STAT): Yes
Part-time study available: No
TAFE credit available: Yes
Honours study available: Yes
Program fees (international students only): A$28,000 per annum
Scholarships available: unisa.edu.au/scholarship

Program overview
The Bachelor of Engineering (Electronics and Communications) prepares you for a professional career in a range of electronics and telecommunications industries. The program helps you develop skills in modern communications principles as well as micro-electronics, fabrication, electronic design and signal processing.

As well as developing sound knowledge of the relevant technologies, you will acquire a detailed understanding of electronic and communication systems and the skills needed to design both components and systems.

Engineering students also have access to the Experience 1 Studio and the Engineering Mechatronics Lab, which will help you gain valuable engineering practice throughout your studies.

What will I study?
As a student of the University of South Australia’s engineering program you will undertake a number of common core courses over the duration of your program. This ensures that the foundation in fundamental engineering is strong no matter what your chosen specialisation, and provides the opportunity for you to transfer between programs and specialisations if you wish to do so.

In addition, you will take courses related to your chosen specialisation, which have been carefully selected to provide a solid foundation of knowledge in the engineering sub-discipline (see program structure for further information). These courses also focus on preparing you for professional practice in engineering and provide the opportunity to undertake projects including the Engineers Without Borders project.

The Bachelor of Engineering (Electronics and Communications) focuses on small and smart systems used in almost every industry such as automotive, food and beverage, defence, media, telecommunications, biomedical, safety, and the environment. The degree also incorporates study in the areas of computer technology, communications, intelligent systems, control, automation, microelectronics, electronic instrumentation, management and systems engineering.

In the final years of the degree, you will undertake specialist studies in electronics and micro engineering or telecommunications and apply the principles and practices of your studies in a major industry-based project. The final-year project provides you with an opportunity to gain hands-on electronics experience, apply the integrated skills you have developed throughout the degree and develop direct links to industry and professional networks. As an electronics and communications student you will also undertake a compulsory three-month, full-time industry placement in a relevant field. This provides you with an opportunity to gain valuable work experience in an industry setting, in which you can apply your skills and knowledge to practical problems and gain valuable engineering practice.

This experience prepares you for a professional career in electronics and telecommunications, and outstanding candidates may be offered further employment opportunities.

You also have the option of studying abroad for one year on the International Student Exchange program. This enables you to gain international experience by completing part of your degree overseas. For more information visit: unisa.edu.au/exchange

In association with industry partners and sponsors, UniSA recognises many deserving students with prizes and awards at various levels of study. For more information visit unisa.edu.au/scholarship

Who will employ me?
The program prepares you for a career as an electronics engineer. Electronics engineers design, develop, test and maintain electronic parts and systems used in the fields of computers, communications, navigation, industry and entertainment. As a graduate, typically you may secure employment as a clean room technician, electronic design engineer, electronic process engineer, expert systems engineer, integrated circuit (IC) design engineer, IC fabrication engineer, internet protocol (IP) network engineer, materials technologist, micro electro-mechanical systems (MEMS) engineer, micro fabrication engineer, microsystems engineer, printed circuit board (PCB) engineer, or a research officer.

Professional accreditation
This program is professionally accredited by Engineers Australia and is designed to meet the requirements for graduate membership of Engineers Australia and comparable international institutions.

Honours
Upon achieving a credit level average at the end of third year you may be allowed to enrol in the Honours courses in engineering in your final year. Successful completion of the program and the Honours project courses may lead to the award of the Bachelor of Engineering with Honours.
Carefully selected to provide a solid foundation in fundamental engineering theory and practical exposure to engineering problems utilising both computer techniques and hands-on skills. This ensures that you have gained during your program an industry setting. Industry experience helps you to determine your engineering career pathway as you are able to experience particular sectors prior to graduation.

The University of South Australia, in association with industry partners and sponsors, recognises many deserving students with prizes and awards at various levels of study. For more information visit: unisa.edu.au/scholarship

Who will employ me?
Australia’s excellence in manufacturing can be found in all industries, including aerospace, automotive, ship building, fabricated metal products, industrial machinery and equipment, pharmaceutical, defence, food and beverage, and primary metal. Careers in this area are multifaceted, and can include: responsibility for running and optimising existing plants, improving automated processes, implementing software such as Enterprise Resource Planning (ERP), programmable logic controllers (PLCs), proximity sensors, robotics, 3D mechanical design software and systems, advanced planning and scheduling software, CMMS software systems; and manufacturing execution systems.

Professional accreditation
This program is professionally accredited by Engineers Australia and is designed to meet the requirements for graduate membership of Engineers Australia and comparable international institutions.

Honours
Upon achieving a credit level average at the end of the third year you may be invited to enrol in the Honours project in the fourth year. Successful completion of the program and the Honours project may lead to the award of a degree with Honours.
Bachelor of Engineering (Mechanical and Mechatronic)

Program overview
The program actively integrates mechanical engineering with computing, control, automation and actuation. With a strong practical and industry focus, the program encourages you to undertake a project with one of the University of South Australia’s research institutes or work on a real-life project with one of UniSA’s many industry partners.

As a student of this program, you will also have access to the new Engineering Mechatronics Lab and other impressive facilities will help you gain valuable practice throughout your studies.

What will I study?
The degree focuses on finding real solutions to engineering problems utilising both engineering theory and practical exposure gained throughout the program.

As a student of the University of South Australia’s engineering program you will undertake a number of common core courses over the duration of your program. This ensures that the foundation in fundamental engineering is strong no matter what your chosen specialisation, and provides the opportunity for you to transfer between programs and specialisations if you wish to do so.

In addition, you will take courses related to your chosen specialisation, which have been carefully selected to provide a solid foundation of knowledge in the engineering sub-discipline (see program structure for further information).
These courses also focus on preparing you for professional practice in engineering and provide the opportunity to undertake projects including the Engineers Without Borders project.

Specialised final-year courses provide innovative topics in mechanical and mechatronics engineering such as robotics, industrial actuation and automation and machine vision.
Bachelor of Engineering (Mechanical and Sustainable Systems)

Program overview
This program centres on strong theoretical and practical content presented with an industry focus. You will develop the skills to find environmentally sustainable solutions to engineering problems utilising both the engineering theory and practical exposure gained throughout the program. In your final year, you also have the opportunity to undertake an industry-based research project with the University of South Australia’s Barbara Hardy Institute.

As a student of this program, you will have access to the Engineering Mechatronics Lab and other impressive facilities that will help you gain valuable practice throughout your studies.

What will I study?
The degree focuses on finding real solutions to engineering problems utilising both the engineering theory and practical exposure gained throughout the program.

As a student of the University of South Australia’s engineering program you will undertake a number of common core courses over the duration of your program. This ensures that the foundation in fundamental engineering is strong no matter what your chosen specialisation, and provides the opportunity for you to transfer between programs and specialisations if you wish to do so.

In addition, you will take courses related to your chosen specialisation, which have been carefully selected to provide a solid foundation of knowledge in the engineering sub-discipline (see program structure for further information). These courses also focus on preparing you for professional practice in engineering and provide the opportunity to undertake projects including the Engineers Without Borders project.

Specialised final-year courses provide innovative topics in sustainable systems engineering such as vehicle emission control, energy management for sustainability and sustainable energy system design.

The final-year project offers the choice of a range of industry-based projects in the sustainable systems and technologies areas or a school-based project. As a student in the program you will undertake 12 weeks of compulsory industrial experience during your study. This experience is highly regarded by prospective employers.

You will have the opportunity to apply and integrate the knowledge and skills you have gained during your program in an industry setting. Industry experience also helps you determine your career pathway by allowing you to experience particular sectors prior to graduation. UniSA, in association with industry partners and sponsors, also offers several prizes and awards for students at various levels of study. For more information visit: unisa.edu.au/scholarships

Who will employ me?
With the current spotlight on climate change and the need to provide sustainable energy and sustainable resources, the demand for mechanical and sustainable systems engineering graduates is high. Graduates have found full-time employment both locally and internationally in the industries such as; electricity, gas, solar, wind, geothermal, environmental, energy, building and mechanical services management, transport, consulting, automotive, mining and manufacturing.

Professional accreditation
This program is professionally accredited by Engineers Australia and is designed to meet the requirements for graduate membership of Engineers Australia and comparable international institutions.

Honours
Upon achieving a credit level average at the end of the third year you may be invited to enrol in the Honours project in the fourth year. Successful completion of the program and the Honours project may lead to the award of a degree with Honours.

Program requirements

FIRST YEAR
First Semester (Study Period 1, 2 or 3)
- Computer Techniques
- Engineering Mathematics
- Mathematical Methods for Engineers 1

Second Semester (Study Period 4, 5 or 6)
- Electricity and Electronics
- Engineering Design and Innovation
- Engineering Mechanics
- Mathematical Methods for Engineers 2

SECOND YEAR
First Semester (Study Period 1, 2 or 3)
- Mechanics of Materials
- Methods of Applied Mathematics 1
- Manufacturing Processes
- Mechanical Engineering Practice N

Second Semester (Study Period 4, 5 or 6)
- Engineering Dynamics
- Mechanical Design Practice
- Fluid and Energy Engineering
- Elective 1

THIRD YEAR
First Semester (Study Period 1, 2 or 3)
- Engineering Modelling
- Energy Conversion and Management
- Professional Engineering Practice E
- Computer Aided Engineering Practice

Second Semester (Study Period 4, 5 or 6)
- Mechanics of Machines
- The Role of the Energy Manager
- Operations and Project Management for Engineers
- Fluid and Energy Management Practice
- Industrial Experience

FOURTH YEAR
First Semester (Study Period 1, 2 or 3)
- Vehicle Emission, Control and Strategy
- Energy and Society
- Mechanical Engineering Project 1

Second Semester (Study Period 4, 5 or 6)
- Sustainable Development and Design Practice
- Sustainable Energy System Design
- Mechanical Engineering Project 2
Bachelor of Engineering (Mechanical and Systems Engineering)

Program overview

Industry and government organisations expect a widespread skills shortage in systems engineering and systems integration. This shortage will significantly impact the nations capability to deliver advanced technologies and as a result, careers in systems engineering and systems integration will become more abundant over the next five years. This program aims to meet the skill needs of industry and Government and prepares you for a career in Systems Engineering. Systems Engineers are responsible for the design and operation of all kinds of engineered systems including defence equipment, infrastructure, telecommunications systems, industrial systems, automotive products, etc. They are responsible for the exploration, definition and specification, design and modelling, and successful construction and integration of whole systems. You will learn how to undertake large systems design such as the development of new submarines or ships, as well as apply systems engineering principles in order to progress designs stage by stage to the required level of complexity.

What will I study?

The degree focuses on finding real solutions to engineering problems utilising both the engineering theory and practical exposure gained throughout the program. As a student of the University of South Australia’s engineering program you will undertake a number of common core courses over the duration of your program. This ensures that the foundation in fundamental engineering is strong no matter what your chosen specialisation, and provides the opportunity for you to transfer between programs and specialisations if you wish to do so.

In addition, you will take courses related to your chosen specialisation, which have been carefully selected to provide a solid foundation of knowledge in the engineering sub-discipline (see program structure for further information). These courses also focus on preparing you for professional practice in engineering and provide the opportunity to undertake projects including the Engineers Without Borders project.

The fourth year offers the opportunity for specialisation to equip graduates for future leadership roles in the areas of mechanical design, advanced manufacturing, applied mechatronics, sustainable systems and nanotechnology with particular emphasis on the manufacturing, defence, mining, mechanical design, automotive, and building and mechanical services industries. These specialisations each have a major individual project which is industry based. As a student in the program you will undertake 12 weeks of compulsory industrial experience during your study. This experience is highly regarded by previous students and prospective employers. You will have the opportunity to apply and integrate the knowledge and skills you have gained during your program in an industry setting. Industry experience also helps you to determine your engineering career pathway as you are able to experience particular sectors prior to graduation. The University of South Australia, in association with industry partners and sponsors, recognises many deserving students with prizes and awards at various levels of study. For more information visit unisa.edu.au/scholarship.

Who will employ me?

The program has a strong practical and industry focus and you may have the opportunity to work with industry or government project managers leading defence projects such as Air Warfare Destroyer, New Submarines and Land Vehicles, as a final year project. As a graduate of mechanical and systems engineering you may find work locally and internationally in the mining, defence, manufacturing, ship building, environmental, engineering consulting, building services, automotive, petrochemical, and other industries.

Professional accreditation

The successful completion of this program is designed to meet the requirements for graduate membership of Engineers Australia and comparable international institutions through the Washington Accord. For further information on these organisations visit washingtonaccord.org.au and engineersaustralia.org.au. Such accreditation is provisional until the program produces its first graduates.

Honours

Upon achieving a credit level average at the end of the third year you may be invited to enrol in the Honours project in the fourth year. Successful completion of the program and the Honours project may lead to the award of a degree with Honours.

Program requirements

FIRST YEAR

First Semester (Study Period 1, 2 or 3)

Computer Techniques

Engineering Materials

Mathematical Methods for Engineers 1

Sustainable Engineering Practice

SECOND SEMESTER (Study Period 4, 5 or 6)

Electricity and Electronics

Engineering Design and Innovation

Mathematical Methods for Engineers 2

Engineering Mechanics

SECOND YEAR

First Semester (Study Period 1, 2 or 3)

Mechanics of Materials

Engineering Modelling

Manufacturing Processes

Mechanical Engineering Practice N

Second Semester (Study Period 4, 5 or 6)

Engineering Dynamics

Mechanical Design Practice

Fluid and Energy Engineering

Elective 1

THIRD YEAR

First Semester (Study Period 1, 2 or 3)

Design for Manufacture and Assembly

Energy Conversion and Management

Computer Aided Engineering Practice

Engineering Systems Thinking N

Second Semester (Study Period 4, 5 or 6)

Operations and Project Management for Engineers

Mechanics of Machines

Fluid and Energy Management Practice

Systems Engineering

Industrial Experience

FOURTH YEAR

Students are required to select a specialisation aligned with their project

First Semester (Study Period 1, 2 or 3)

Professional Engineering Practice E

Principles of Test and Evaluation N

Systems Engineering Project 1

Second Half (Study Period 4, 5 or 6)

Systems Engineering Specialisation 1

Modelling and Simulation for Systems Engineering

Systems Engineering Project 2

FOURTH YEAR WITH HONOURS

First Semester (Study Period 1, 2 or 3)

Professional Engineering Practice E

Principles of Test and Evaluation N

Systems Engineering Honours Project 1

Second Semester (Study Period 4, 5 or 6)

Systems Engineering Specialisation 1

Modelling and Simulation for Systems Engineering

Systems Engineering Honours Project 2

Program fees (international students only): A$28,000 per annum

Scholarships available: unisa.edu.au/scholarship

Unisa Physics SACE Stage 2

LBMR Bachelor of Engineering (Mechanical and Systems Engineering)

CRICOS code (international students only): 074038G

ATAR (February 2013 cut-off): 73.70

Unisa Preferred Score (guaranteed entry): 80.00

Program length: 4

Prerequisites: SACE Stage 2 Mathematical Studies

Assumed knowledge: SACE Stage 2 Physics

Home campus: Mawson Lakes

Accepts Special Entry (STAT): Yes

Part-time study available: No

TAFE credit available: Yes

Honours study available: Yes

Program fees: Commonwealth supported

Scholarships available: unisa.edu.au/scholarship

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Bachelor of Engineering (Mechanical)

Program overview
This degree combines a strong theoretical foundation with significant practical exposure, which is a highly regarded combination for prospective employers. This applied approach provides you with the ability to find practical solutions to engineering problems and projects. Academic staff in the School of Engineering have close ties with a cross section of industry and extensive research experience. You will learn about the latest developments in machinery design, manufacturing technologies, and sustainable energy usage and management. As a final-year student you may choose to undertake a project with one of UniSA’s research centres, work on an industry project with one of the University of South Australia’s industry partners or participate in a design and build team competition. As a student of this program, you will also have access to the Engineering Mechatronics Lab and other impressive facilities that will help you gain valuable practice throughout your studies.

What will I study?
The degree focuses on finding real solutions to engineering problems utilising both engineering theory and practical exposure gained throughout the program. As a student of the University of South Australia’s engineering program you will undertake a number of common core courses over the duration of your program. This ensures that the foundation in fundamental engineering is strong no matter what your chosen specialisation, and provides the opportunity for you to transfer between programs and specialisations if you wish to do so. In addition, you will take courses related to your chosen specialisation, which have been carefully selected to provide a solid foundation of knowledge in the engineering sub-discipline (see program structure for further information). These courses also focus on preparing you for professional practice in engineering and provide the opportunity to undertake projects including the Engineers Without Borders project.

Specialised courses in the final year provide advanced and innovative topics in mechanical engineering such as vehicle emission control, mechanical system design, quality management and machine vision. The final-year project offers you the choice to participate in a range of industry-based projects or in one of the many special School projects. Previous examples include the development of the Society of Automotive Engineers (SAE) Race Car. The Formula SAE is an annual international engineering design competition that is run by the Society of Automotive Engineers in the USA, UK, Japan, Europe and Australasia for university students. The competition requires teams to conceive, design, fabricate, and compete with small formula-style racing cars with conventional fuel or electric power. As a student in the program you will undertake 12 weeks of compulsory industrial experience during your study. This experience is highly regarded by prospective employers. You will have the opportunity to apply and integrate the knowledge and skills you have gained during the program in an industry setting. Industry experience also helps you to determine your career pathway enabling you to experience particular industry sectors prior to graduation. The University of South Australia, in association with industry partners and sponsors, recognises many deserving students with prizes and awards at various levels of study. For more information visit unisa.edu.au/scholarship

Who will employ me?
As a mechanical engineering graduate you may find work locally and internationally in industries such as; mining, defence, manufacturing, ship building, environmental, engineering consulting, building services, automotive, petrochemical, and a variety of other industries. Many graduates receive multiple job offers and are able to choose their employer or the industry in which they wish to work. Graduates from this program found full-time employment in South Australian companies including; ASC, Orlando Wyndham Group, Holden, Origin Energy, Caroma, WMIC (Olympic Dam), Aurecon, Bridgestone, Transport SA and SA Water.

Professional accreditation
This program is professionally accredited by Engineers Australia and is designed to meet the requirements for graduate membership of Engineers Australia and comparable international institutions.

Honours
Upon achieving a credit level average at the end of the third year you may be invited to enrol in the Honours project in the fourth year. Successful completion of the program and the Honours project may lead to the award of a degree with Honours.

Program requirements

FIRST YEAR
First Semester (Study Period 1, 2 or 3)
Computer Techniques
Engineering Materials
Mathematical Methods for Engineers 1
Sustainable Engineering Practice

Second Semester (Study Period 4, 5 or 6)
Electricity and Electronics
Engineering Design and Innovation
Mathematical Methods for Engineers
Engineering Mechanics

SECOND YEAR
First Semester (Study Period 1, 2 or 3)
Mechanics of Materials
Methods of Applied Mathematics 1
Manufacturing Processes
Mechanical Engineering Practice N

Second Semester (Study Period 4, 5 or 6)
Engineering Dynamics
Mechanical Design Practice
Fluid and Energy Engineering
Elective 1

THIRD YEAR
First Semester (Study Period 1, 2 or 3)
Energy Conversion and Management
Professional Engineering Practice E
Computer Aided Engineering Practice

Second Semester (Study Period 4, 5 or 6)
Design in Plastics and Advanced Composites
Mechanics of Machines
Operations and Project Management for Engineers
Fluid and Energy Management Practice

Industrial Experience

Students are required to select a plan specialisation aligned with their project

FOURTH YEAR
First Semester (Study Period 1, 2 or 3)
Mechanical Engineering Specialisation 1
Vibration, Control and Acoustics
Mechanical Engineering Project 1

Second Semester (Study Period 4, 5 or 6)
Mechanical Systems Design
Sustainable Energy System Design
Mechanical Engineering Project 2

FOURTH YEAR - WITH HONOURS
First Semester (Study Period 1, 2 or 3)
Mechanical Engineering Specialisation 1
Vibration, Control and Acoustics
Mechanical Engineering Project 1

Second Semester (Study Period 4, 5 or 6)
Mechanical Systems Design
Sustainable Energy System Design
Mechanical Engineering Honours Project

SATAC code: 434321
Program code: LBMR
CRICOS code (international students only): 056093E
ATAR (February 2013 cut-off): 72.10
UnISA Preferred Score (guaranteed entry): 80.00
Program length: 4
Prerequisites: SACE Stage 2 Mathematical Studies
Assumed knowledge: SACE Stage 2 Physics
Program fees (international students only): A$28,000 per annum
Scholarships available: unisa.edu.au/scholarship

Program requirements

FIRST YEAR
First Semester (Study Period 1, 2 or 3)
Computer Techniques
Engineering Materials
Mathematical Methods for Engineers 1
Sustainable Engineering Practice

Second Semester (Study Period 4, 5 or 6)
Electricity and Electronics
Engineering Design and Innovation
Mathematical Methods for Engineers
Engineering Mechanics

SECOND YEAR
First Semester (Study Period 1, 2 or 3)
Mechanics of Materials
Methods of Applied Mathematics 1
Manufacturing Processes
Mechanical Engineering Practice N

Second Semester (Study Period 4, 5 or 6)
Engineering Dynamics
Mechanical Design Practice
Fluid and Energy Engineering
Elective 1

THIRD YEAR
First Semester (Study Period 1, 2 or 3)
Energy Conversion and Management
Professional Engineering Practice E
Computer Aided Engineering Practice

Second Semester (Study Period 4, 5 or 6)
Design in Plastics and Advanced Composites
Mechanics of Machines
Operations and Project Management for Engineers
Fluid and Energy Management Practice

Industrial Experience

Students are required to select a plan specialisation aligned with their project

FOURTH YEAR
First Semester (Study Period 1, 2 or 3)
Mechanical Engineering Specialisation 1
Vibration, Control and Acoustics
Mechanical Engineering Project 1

Second Semester (Study Period 4, 5 or 6)
Mechanical Systems Design
Sustainable Energy System Design
Mechanical Engineering Project 2

FOURTH YEAR - WITH HONOURS
First Semester (Study Period 1, 2 or 3)
Mechanical Engineering Specialisation 1
Vibration, Control and Acoustics
Mechanical Engineering Project 1

Second Semester (Study Period 4, 5 or 6)
Mechanical Systems Design
Sustainable Energy System Design
Mechanical Engineering Honours Project

4one
Jeffrey Mao
Engineering - Mechanical

Australia’s reputation in the manufacturing industry led Jeffrey (Jianfei) Mao to the University of South Australia to study the Bachelor of Engineering (Mechanical and Advanced Manufacturing) from his home in China. Pursuing a career in the automotive and aeronautic industries, Jeffrey is looking forward to being able to ‘use (his) hands-on skills and the professional knowledge that (he has) learned at UniSA.’

Through a work placement with a ‘world-class’ manufacturing company Jeffrey is gaining valuable experience that he believes will prove helpful in his career development.

Jeffrey is enjoying an active life in Adelaide, extending his knowledge of the local culture and intercultural communication through his interactions with teaching staff and other students, and opportunities such as the Global Experience program – a course designed to enhance a student’s intercultural awareness and global employability.

‘In my spare time I am very active in social activities such as volunteer work. I will never forget those precious memories after I graduate.’
Bachelor of Engineering (Mechatronic)

SATAC code: 434031
Program code: LBEG
CRICOS code (international students only): 077222E
ATAR (February 2013 cut-off): 71.05
UniSA Preferred Score (guaranteed entry): 80.00
Program length: 4
Prerequisites: SACE Stage 2 Mathematical Studies
Assumed knowledge: SACE Stage 2 Physics
Home campus: Mawson Lakes
Accepts Special Entry (STAT): Yes
External study available: No
Part-time study available: Yes
TAFE credit available: Yes
Honours study available: Yes
Program fees: Commonwealth supported
Program fees (international students only): A$28,000 per annum
Scholarships available: unisa.edu.au/scholarship

Program overview
Mechatronics is an interdisciplinary area of engineering that combines mechanical engineering with electrical engineering and computer science. A typical mechatronic system senses signals from the environment, processes them to generate data, then transforms that data into forces, motions and actions. Mechatronics has broad applications, for example, in the design and operation of intelligent products and systems such as autonomous vehicle systems for mining and other applications, and in the development of sophisticated robotic and automatic production systems.

As with all engineering degrees at the University of South Australia there is an emphasis on preparing you for professional engineering practice, and the innovative application of knowledge to practical engineering problems.

What will I study?
As a student of the University of South Australia’s engineering program you will undertake a number of common core courses over the duration of your program. This ensures that the foundation in fundamental engineering is strong no matter what your chosen specialisation, and provides the opportunity for you to transfer between programs and specialisations if you wish to do so.

In addition, you will take courses related to your chosen specialisation, which have been carefully selected to provide a solid foundation of knowledge in the engineering sub-discipline (see program structure for further information). These courses also focus on preparing you for professional practice in engineering and provide the opportunity to undertake projects including the Engineers Without Borders project.

Throughout the program you will undertake studies in the core discipline areas that are required for designing mechatronic systems. In electrical engineering you will learn about electrical and electronic circuits, how electrical signals are generated and analysed and used to control systems, and how modern embedded systems based on microcontrollers are developed. In mechanical engineering you will study the fundamentals of mechanics and dynamics and learn about how mechanical systems are designed. You will also learn how to develop software programs to provide the intelligence for a mechatronic system, and will study some advanced mathematics providing the basis for the studies you will undertake in the engineering areas.

In the final part of the program you will undertake courses which integrate the various disciplines together into the design of mechatronic systems. You will undertake courses in areas such as the design of industrial automation systems and autonomous robotic vehicles. In addition you will develop the skills required for professional engineering practice, undertake a major final year project and study advanced mechatronic related courses.

Who will employ me?
Due to the activity in mining, defence and manufacturing, there are a number of companies and organisations in South Australia and beyond seeking to hire good engineers with a particular emphasis on the use of electronics and smart technologies. While potential employers include a range of large companies such as ASC, DSTO, BAE Systems, Codan and BHP Billiton, there is also a large number of small to medium South Australian companies that operate highly specialised businesses which require the sort of skills developed in the mechatronic engineering program. An engineering degree provides many opportunities for work in Australia and overseas.

Professional Accreditation
This program is professionally accredited by Engineers Australia and is designed to meet the requirements for graduate membership of Engineers Australia and comparable international institutions.

Honours
Students achieving a credit level average at the end of third year will be invited to enrol in Honours courses in fourth year. Successful completion of the program and the Honours project course may lead to the award of a degree with Honours.

Program requirements

FIRST YEAR
Semester 1 (Study Period 1,2 or 3)
Introduction to Computer Systems
Mathematical Methods for Engineers 1
Sustainable Engineering Practice
Computer Techniques

Second Semester (Study Period 4,5 or 6)
Mathematical Methods for Engineers 2
Engineering Design and Innovation
Electricity and Electronics
Engineering Mechanics

SECOND YEAR
First Semester (Study Period 1,2 or 3)
Programming for Engineers
Electromechanics
Methods of Applied Mathematics 1
Electrical Circuit Theory

Second Semester (Study Period 4,5 or 6)
Microcontroller Programming and Interfacing
Engineering Dynamics
Signals and Systems
Electronic Devices and Circuits

THIRD YEAR
First Semester (Study Period 1,2 or 3)
Control Systems
Professional Engineering Practice E
Mechanics of Materials
OR
Introduction to Communication Systems
Engineering Modelling

Second Semester (Study Period 4,5 or 6)
Mechatronic Elective 1
Advanced Control
Autonomous Mechatronic Systems

Semester 2 (Study Period 4,5 or 6)
Mechatronic Elective 2
Embedded System Design
Mechanical Design Practice
OR
Digital Signal Processing
OR
Advanced Computing Seminar
Systems Engineering

Mechatronic System Integration
Practical Industrial Experience Reports

FOURTH YEAR
Semester 1 (Study Period 1,2 or 3)
Autonomous Mechatronic Systems
Advanced Control
Mechatronic Elective 1
Electrical and Information Engineering Project 1

Semester 2 (Study Period 4,5 or 6)
Robots and Automation
Mechatronic Elective 23
Electrical and Information Engineering Project 2

University elective 1

FOURTH YEAR (HONOURS)
Semester 1 (Study Period 1,2 or 3)
Autonomous Mechatronic Systems
Advanced Control
Honours Mechatronic Elective 1
OR
Electrical and Information Engineering Project 1
Honours
OR

Second Semester (Study Period 4,5 or 6)
Robots and Automation
Honours Mechatronic Elective 2
OR
Electrical and Information Engineering Project 2
Honours
OR
University Elective

CRICOS code 077222E

UNIVERSITY OF SOUTH AUSTRALIA
Bachelor of Engineering (Metallurgy)

What will I study?
This program is a unique collaboration between the University of South Australia and Curtin University of Technology’s Western Australian School of Mines (WASM) in Kalgoorlie which is an acknowledged leader in extractive metallurgy. As a student of the University of South Australia’s engineering program you will undertake a number of common core courses over the duration of your program. This ensures that the foundation in fundamental engineering is strong no matter what your chosen specialisation, and provides the opportunity for you to transfer between programs if you wish to do so. In your second year you will study more practice-based courses providing you with engineering knowledge in a range of areas including; mechanical engineering, metallurgy, chemistry and manufacturing. The third year of the program will give you the opportunity to undertake more detailed studies of particular metallurgical and mineral processing including; pyrometallurgy and hydrometallurgy along with some advanced manufacturing process engineering. In the fourth year, you will conduct a major individual, industry-based project. You will also have the opportunity to choose a particular area of advanced study in metallurgy, materials or mechanical engineering.

Who will employ me?
This program will prepare you for work as a metallurgist, primarily in the mining industry. You may gain employment within a range of industries that require engineers with exposure to a range of minerals and materials engineering concepts including materials processing (metals and minerals) through to various manufacturing, biomedical and processing industries. Advanced materials such as ceramics, composites and biomaterials are also becoming increasingly common. Upon successful completion of this program, you will also be able to progress onto higher degree work with UniSA materials research facilities and external research facilities.

Professional accreditation
The successful completion of this program is designed to meet the requirements for graduate membership of Engineers Australia and comparable international institutions through the Washington Accord. For further information on these organisations visit washingtonaccord.org and engineersaustralia.org.au. Such accreditation is provisional until the program produces its first graduates.

Honours
Students achieving a credit level average at the end of third year will be invited to enrol in the Honours project in fourth year. Successful completion of the program and the Honours project may lead to the award of a degree with Honours.

Program requirements

FIRST YEAR
First Semester (Study Period 1, 2 or 3)
- Computer Techniques
- Engineering Materials
- Mathematical Methods for Engineers 1
- Sustainable Engineering Practice
Second Semester (Study Period 4, 5 or 6)
- Engineering Mechanics
- Engineering Design and Innovation
- Mathematical Methods for Engineers 2
- Engineering and Environmental Geology

SECOND YEAR
First Semester (Study Period 1, 2 or 3)
- Chemistry 100
- Mechanics of Materials
- Engineering Modelling
- Mechanical Engineering Practice N
Second Semester (Study Period 4, 5 or 6)
- Major 1 - Metallurgical processes 252 (Curtin University of Technology) (2.25 Unit Value)
- WASM Technical Elective 332 (Curtin University of Technology) (2.25 Unit Value)
- Major 2 - Process Mineralogy 212 (Curtin University of Technology)
- Fluid and Energy Engineering
- Thermal Processing and Metallurgy

THIRD YEAR
First Semester (Study Period 1, 2 or 3)
- Major 3 - Process Control 353 (Curtin University of Technology)
- Major 4 - Mineral Processing 351 (Curtin University of Technology)
- Manufacturing Processes
- University Elective 1
Second Semester (Study Period 4, 5 or 6)
- Operations Management for Engineers
- Major 5 - Hydrometallurgy 352 (Curtin University of Technology)
- Major 6 - Pyrometallurgy 352 (Curtin University of Technology)
- Major 7: Mineral Processing 352 (Curtin University of Technology)
- Industrial Experience

FOURTH YEAR
First Semester (Study Period 1, 2 or 3)
- Major 8 - Process Engineering 451 (Curtin University of Technology)
- Professional Engineering Practice E
- Mechanical Engineering Project 1
Second Semester (Study Period 4, 5 or 6)
- Major 9 - Process Design 562 (Curtin University of Technology)
- Technical Elective 1
- Mechanical Engineering Project 2

FOURTH YEAR WITH HONOURS
First Semester (Study Period 1, 2 or 3)
- Major 9 - Process Engineering 451 (Curtin University of Technology)
- Professional Engineering Practice E
- Mechanical Engineering Project 1
Second Semester (Study Period 4, 5 or 6)
- Major 9 - Process Design 562 (Curtin University of Technology)
- Technical Elective 1
- Mechanical Engineering Honours Project

Program overview
This program aims to provide you with in-depth knowledge of various metallurgical processes preparing you for a professional career in minerals, mining, manufacturing and processing industries. As a student of this program, you will also have access to the Engineering Mechatronics Lab and other impressive facilities that will help you gain valuable experience throughout your studies.

Scholarships available: unisa.edu.au/scholarship

Commonwealth supported
Honours study available: Yes
Part-time study available: No
External study available: Accepts Special Entry (STAT):

Program code: SATAC code: 434931
ATAR (February 2013 cut-off): 78.65
UniSA Preferred Score (guaranteed entry): 80.00
Program length: 4
Prerequisites: SACE Stage 2 Chemistry, SACE Stage 2 Mathematical Studies
Assumed knowledge: SACE Stage 2 Physics
Home campus: Mawson Lakes
Accepts Special Entry (STAT): Yes
External study available: No
Part-time study available: Yes
TAFE credit available: Yes
Honours study available: Yes
Program fees: Commonwealth supported
Bachelor of Technology (Mechanical and Manufacturing Engineering)

SATAC code: 434221
Program code: LBNI
CRICOS code (international students only): 018743B
ATAR (February 2013 cut-off): 80.95
UniSA Preferred Score (guaranteed entry): n/a
Program length: 3
Prerequisites: SACE Stage 2 Mathematical Studies
Assumed knowledge: SACE Stage 2 Physics
Home campus: Mawson Lakes
Accepts Special Entry (STAT): Yes
External study available: No
Part-time study available: Yes
TAFE credit available: Yes
Honours study available: No
Program fees: Commonwealth supported
Program fees (international students only): A$28,000 per annum
Scholarships available: unisa.edu.au/scholarship

Program overview
This program will prepare you for a career as an engineering technologist in a range of mechanical and manufacturing engineering industries. The program’s strong practical and industry focus will give you an understanding of engineering fundamentals as well as an appreciation of the diversity of mechanical engineering industries.

Upon successful completion of the program you can apply for entry to the Bachelor of Engineering (Mechanical Engineering), Bachelor of Engineering (Mechanical and Advanced Manufacturing Engineering), Bachelor of Engineering (Mechanical and Sustainable Systems Engineering) or Bachelor of Engineering (Mechanical and Mechatronic) and receive significant credit toward your program of choice. You can also articulate into the above degrees after suitable completion of the first two years of the Bachelor of Technology program.

As a student of this program, you will also have access to the Engineering Mechatronics Lab and other impressive facilities that will help you gain valuable practice throughout your studies. These include specialised laboratory facilities such as robotics, CNC machinery, thermofluids and polymer composites and utilise state-of-the-art engineering equipment and software.

What will I study?
You will undertake a number of core courses over the duration of your program that also form the common core of the University of South Australia’s Bachelor of Engineering programs. This ensures that the foundation in fundamental engineering is strong, and provides the opportunity for you to transfer between programs if you are eligible to do so, as determined by academic merit.

In addition, you will take courses related to your specialisation that will provide a solid foundation of knowledge in the engineering sub-discipline of your choice (see program structure for further information). These courses also focus on preparing you for professional practice in engineering and provide the opportunity to undertake projects including the Engineers Without Borders project.

In the final year, you can select courses to specialise in such as: mechanical engineering, advanced manufacturing, sustainable systems and mechatronics. You will be required to complete a project in your area of specialisation. You can choose either an industry-based project with one of the University of South Australia’s industry partners or a project with one of the University’s specialist research institutes.

The University of South Australia, in association with industry partners and sponsors, recognises several deserving students with prizes and awards at various levels of study. For more information visit unisa.edu.au/scholarship

Who will employ me?
This program produces graduates who are immediately useful to industry as assistants to professional engineers. As a graduate, you may occupy the role of a project or production engineer in a range of industries including; mining, automotive, building services, plastics, electronics, sustainable energy, renewable energy, food processing, pharmaceuticals or mechanical services. You will be able to carry out specific and complex engineering tasks, focus on interactions within engineering systems and identify and solve complex, specialised engineering problems by applying innovative practices and procedures.

The award also provides an important articulation pathway for TAFE and university graduates with diploma qualifications who wish to improve their qualifications. Graduates of appropriate engineering diploma programs who have significant industry experience may be granted up to three semesters of credit in the Bachelor of Technology.

Professional accreditation
This program is professionally accredited by Engineers Australia and is recognised as satisfying the requirements for affiliate membership of Engineers Australia.
Entry requirements

For Undergraduate Bachelor Degrees and Associate Degrees
Applicants are required to have:
• Completed SACE;
• Completed at least 80 credits of SACE at Stage 2 of which 60 must be Tertiary Admission subjects (TAS) and the other 20 either TAS, Recognised Studies or a mix of the two;
• Completed any prerequisites for your chosen program;
• Obtained a competitive ATAR;
• Completed interstate or overseas qualifications that the University considers equivalent to the SACE;
• Completed the International Baccalaureate Diploma;
• Completed or partly completed a recognised higher education program at a recognised higher education institution;
• Completed at least four Open Universities Australia (OUA) courses at the appropriate level;
• Completed an award from TAFE or from another registered training organisation at AQF Certificate IV or above;
• Qualified for Special Entry and completed the Special Tertiary Admissions Test (STAT). A personal competencies statement and/or employment experience may also be considered;
• Completed the University Foundation Studies or Diploma program.

Please note that some programs have prerequisites. Applicants should check all entry requirements before applying. For some programs, applicants may also be required to attend an interview or present a folio.

For more information on entry requirements, visit unisa.edu.au/future

Participation and Access
UniSA offers various programs and services to assist rural and/or socio-economically disadvantaged students, Indigenous Australians and people with a disability. For more information, contact (08) 8302 2376 or email study@unisa.edu.au

UniSA Advantage Bonus Points
UniSA Advantage is a bonus points scheme that encourages participation in education as well as rewards achievement in selected Year 12 subjects that better prepare students for university study. The scheme includes two strands – Achievement and Aspire.

Achievement bonus points will automatically be awarded if students score a C- or better in Year 12 Tertiary Admission Subjects (TAS) relevant to their intended UniSA program. Find out more at unisa.edu.au/bonuspoints

Aspire bonus points are awarded automatically to students who attend a school recognised by UniSA as under represented at university. Students from rural and remote areas are also eligible for automatic bonus points while those students on School Card (or state equivalent), Youth Allowance and/or Health Care Card or Low Income Health Care Card and who do not attend a recognised school, can apply for bonus points by downloading an application form at unisa.edu.au/bonuspoints

For more information, visit unisa.edu.au/bonuspoints. You can also contact Future Student Enquiries by phone (08) 8302 2376 or email study@unisa.edu.au

Student contributions
To find out more about how you can defer your HECS-HELP student contribution or to see if you are entitled to a Commonwealth Government supported place at the University of South Australia, please visit unisa.edu.au/fees. The contribution that applies depends on which courses you choose to study and the contribution band in which those courses are classified (see table below). The amount of your student contribution also depends on the unit value of your courses of study (the equivalent full-time student load (EFTSL) value of the course).

How to apply to the University of South Australia
Go to satac.edu.au

As per the Australian Government guidelines, the student contribution amounts for 2013 are:

<table>
<thead>
<tr>
<th>Band</th>
<th>Fields of study</th>
<th>Student contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Band 1</td>
<td>Humanities, behavioural science, social studies, education, clinical psychology, foreign languages, visual and performing arts, nursing.</td>
<td>$0 – $5,868</td>
</tr>
<tr>
<td>Band 2</td>
<td>Mathematics, statistics, computing, built environment, other health, allied health, science, engineering, surveying, agriculture.</td>
<td>$0 - $8,363</td>
</tr>
<tr>
<td>Band 3</td>
<td>Law, accounting, administration, economics, commerce, dentistry, medicine, veterinary science.</td>
<td>$0 – $9,425</td>
</tr>
</tbody>
</table>

Note: These amounts are for 1 EFTSL in 2013. The student contribution amounts for 2014 will be advised by the Federal Government in October 2013, and these will be available to view via unisa.edu.au/future/fees at that time.
Glossary

WHAT WILL YOU STUDY?

**Associate degree**
An award for completing a two-year (or part-time equivalent) tertiary program.

**Foundation Studies**
A free, one year program with no qualifications required for entry. This program assists students to develop the skills required for successful university-level study. Upon successful completion, students can apply for entry into a degree at the University of South Australia or to enter the second year of a UniSA College diploma program.

**Diploma**
UniSA College offers three diplomas as alternative entry to University: the Diploma of Arts is a two year program designed to provide guaranteed entry into the second year of a social sciences or communication and media degree at the University of South Australia; the Diploma of Science and Technology is a two year program which provides guaranteed entry into the second year of a University of South Australia degree in life sciences, environmental science, physical science, health and exercise science, nursing or biomedical science.

**Bachelor degree**
A program of three or more years duration (or part-time equivalent). Bachelor degree programs provide the relevant qualifications for many professions.

**Honours**
An additional year of study in a Bachelor degree during which students specialise in a chosen area of study. In some cases, Honours study can actually be done as part of the degree.

**Graduate Certificate**
An award for completing a postgraduate program of at least six months in duration (or part-time equivalent).

**Graduate Diploma**
An award for completing a postgraduate program of at least one year in duration (or part-time equivalent).

**Master degree**
A postgraduate degree undertaken after completion of a Bachelor degree.

**PhD**
Doctor of Philosophy (PhD) programs normally extend over three years (or part-time equivalent) and involve significant research work.

**HOW DOES YOUR PROGRAM WORK?**

**Major**
A set of related courses which comprises 36 units of study within a Bachelor degree.

**Sub-major**
A set of related courses which comprises between 19 and 35 units of study within a Bachelor degree.

**Minor**
A set of related courses which comprises up to 18 units of study within a Bachelor degree.

**Program**
Award in which you are enrolled, eg Bachelor of Arts.

**Course**
A component of study within a program (previously known as a ‘subject’).

**Unit**
A value assigned to a course which measures the amount of work involved in that course. Full-time students normally undertake 36 units of study per year (18 units per semester).

**SATAC Guide**
A publication that lists every program offered by South Australian higher education institutions. The SATAC Guide provides information about the selection process, includes instructions on how to apply and is available online at satac.edu.au and from newsagents Australia-wide.

**Special Entry (STAT)**
Special Tertiary Admissions Test (STAT) is an alternative entry for people who do not have any other qualifications for admission to university.

**ATAR (Australian Tertiary Admission Rank)**
A ranking of all students who have completed SACE in a particular year. The minimum ATAR required for the previous year is often a guide to how well you will need to perform to gain entry into a particular program. ATARs can vary from year to year and should be used as a guide only.

**UniSA Preferred**
If you adjusted ATAR score (inclusive of bonus points) is equal, or greater than, the published UniSA Preferred score, if you meet the relevant program prerequisites and list the program as your first preference, you are guaranteed a place in your selected program. Visit unisa.edu.au/preferred

**UniSA Advantage**
UniSA Advantage is a two-tiered points scheme that awards Year 12 students with Achievement and Aspire bonus points. Eligible students will be awarded up to a total number of 9 points when they apply through SATAC. Bonus points are added to the student’s aggregate and a new UniSA ATAR is calculated. Visit unisa.edu.au/bonuspints
In this brochure

- Associate Degree in Engineering
- Bachelor of Engineering (Civil and Environmental Management)
- Bachelor of Engineering (Civil and Project Management)
- Bachelor of Engineering (Civil and Structural)
- Bachelor of Engineering (Civil and Transport)
- Bachelor of Engineering (Civil)
- Bachelor of Engineering (Computer Systems)
- Bachelor of Engineering (Electrical and Electronic)
- Bachelor of Engineering (Electrical and Mechatronic)
- Bachelor of Engineering (Electrical and Renewable Energy Systems)
- Bachelor of Engineering (Electrical and Systems Engineering)
- Bachelor of Engineering (Electronics and Communications)
- Bachelor of Engineering (Mechanical and Advanced Manufacturing)
- Bachelor of Engineering (Mechanical and Mechatronic)
- Bachelor of Engineering (Mechanical and Sustainable Systems)
- Bachelor of Engineering (Mechanical and Systems Engineering)
- Bachelor of Engineering (Mechanical)
- Bachelor of Engineering (Mechatronic)
- Bachelor of Engineering (Metallurgy)
- Bachelor of Technology (Mechanical and Manufacturing Engineering)

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- An insight into life on campus from students and teachers
- The latest breaking careers and industry news

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Psychology, Social Work and Human Services
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Urban and Regional Planning
UniSA College
Whyalla and Mount Gambier Programs

The University of South Australia reserves the right to alter, amend or delete any program, fee, course, admission requirement, mode of delivery or other arrangement, without prior notice.

CRICOS provider number 00121B

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