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Front cover – Thomas Kogge, UniSA engineering student
Welcome

The University of South Australia is a young institution with an agile, innovative approach to educating tomorrow’s professionals and solving today’s challenges. As a university of enterprise, our efforts are focused on providing economic and social benefits to the nation and the world.

Formed in 1991 but built on more than 150 years of creating and applying knowledge, the University has quickly established a global reputation for the quality and creativity of its graduates and the innovative, outcomes-focused relevance of its research.

Our reputation for excellence continues to grow. The University of South Australia is Australia’s youngest university to be ranked in Times Higher Education’s top 50 of world universities under 50 years old. We’re also ranked in the top 3 per cent of the world’s highest performing institutions in the QS university rankings, one of only three Australian universities under the age of 25 to feature in that world’s best list. The University’s research was also rated at world-standard, or above in the second Excellence in Research Australia (ERA) assessment.

With almost 34,000 students in 2013, we are South Australia’s biggest university. We offer more than 400 degree programs in business, education, arts, social sciences, health sciences, information technology, engineering and the environment. Programs are designed with strong professional emphasis and in partnership with industry, and our graduate employment rates are above the national average.

At the University of South Australia, you will discover a vibrant on-campus culture and join an active and diverse student population. This blend enriches the intellectual and social life of our academic community, providing both an enhanced student experience as well as the ideal teaching and learning environment for cultivating tomorrow’s leaders and innovators.

I hope that you will consider joining us and I look forward to seeing you on campus soon.

Professor David G. Lloyd
Vice Chancellor and President
Welcome to Australia’s university of enterprise

Enterprise education incorporates the latest research, work placements, experiential learning and industry links. Our graduates are tomorrow’s leaders and innovators.

New learning centre
The Jeffrey Smart Building is our brand new learning and information hub on Hindley Street. Delivering state-of-the-art teaching and learning facilities and support, this building will transform the west end of the city and enhance the community with a vibrant student population.

The IDEAS university
Our spirit of enterprise begins with nurturing ideas. From concept, to development and into reality we are behind bringing ideas to life through new industry partnerships and engaged research.

Examples include:

- **Global IT partnership** — teaming with Global IT giant Hewlett Packard, in a first for any Australian university, to open a new HP Innovation and Collaboration Centre.
- **Hills Limited innovation partnership** — a new partnership with the State Government and Flinders University set to put South Australia at the forefront of innovative product design and technology expertise for a wide range of industries.
- **SciCEd** — plans to launch Australia’s newest interactive public science space and inspiring young people to study Science, Technology, Engineering and Mathematics (STEM).
- **Honorary Doctorates** — awarding an Honorary Doctorate to **Major General Charles Bolden Jr**, administrator of the National Aeronautics and Space Administration (NASA) and inspirational champion for education equity and access. We have also acknowledged winemaker and business leader **Wolf Blass AM** and leading feminist, editor and publisher **Anne Summers**.
The CONNECTED university

Our connections stretch across the world, through our city and into our student community.

- **Our world** – a worldwide network of 177,000 alumni supported by formal networks in Hong Kong, Singapore, Malaysia, Taiwan and the United Kingdom.
- **Our community** – helping to build stronger local communities through the support of local community and industry groups. We also sponsor many of Adelaide’s cultural highlights including: the Tour Down Under, WOMAD, the Festival of Arts, the Australian HPV Super Series and Head of the River.
- **Our students** – we remain connected to the needs of our students through the University of South Australia Students’ Association (USASA) and support their journey from start to finish with a warm welcome at orientation, modern facilities, and opportunities to create lasting memories and build lifelong friendships.

The SOLUTIONS university

Harnessing our spirit of creativity as well as the excellence of our research we seek out innovative solutions to the challenges of the future.

Our capacity to deliver innovative and effective solutions is enhanced by:

- **Excellent research performance** - quality research that is ranked world-class or above in the 2012 Excellence in Research Australia results. We are also amongst the world’s top three per cent in the QS World University Rankings.
- **Flagship research institutes and centres** – seven research institutes and 17 supported research centres, all supplying fundamental advances in knowledge to address the changing needs of our world.
- **Cutting-edge research facilities** – purpose-built laboratories including industry-standard cleanrooms for cell therapy research and more.

We are also boosting our capability to provide solutions to existing and emerging health issues through a presence in the southern hemisphere’s largest health and biomedical research precinct with the:

- **School of Population Health** – co-location of an entire school in the South Australian Health and Medical Research Institute (SAHMRI) to undertake research into the health and wellbeing challenges within growing populations.
- **Centre for Cancer Biology** – a new alliance with the Centre for Cancer Biology which will lead vital new research into leukaemia.

Keep up-to-date with our latest news at

The university of enterprise

unisa.edu.au/profile

91% of our graduates going on to full-time work are employed in a professional occupation within four months of completing their degree

Graduate Destinations Survey

TOP 50 worldwide

2013 Times Higher Education (THE) 100 Under 50
2013 QS University Rankings Top 50 under 50

86% of our research at or above world-class

The Australian Research Council’s 2012 Excellence in Research for Australia (ERA)
Engineering

Study at the hub of innovation and ideas producing high-achieving professionals and breakthrough research that has the potential to help improve our world, to make it safer and cleaner.

Study engineering at the University of South Australia - a hub of technology and innovation and a vibrant nexus for economic, social and environmental development.

From our world-class teaching facilities at the City East and Mawson Lakes campuses we engage in leading-edge teaching, research training and fundamental applied research.

Spanning future-focused disciplines including IT, environmental science, engineering, urban planning and more, we produce skilled professionals who can use the latest technologies intelligently to create sustainable solutions for our fast changing world.

Find out more online...

For more information on engineering at the University of South Australia including entry pathways, student case studies and more visit:

unisa.edu.au/engineering

Pathways into engineering

1. YEAR 12
   - Completion of Year 12 with required ATAR, and
   - Completion of prerequisite SACE Stage 2 Mathematical Studies or equivalent

2. STAT TEST
   - Year 12 and 18 years of age or older, or
   - Mature age, and
   - Completion of prerequisite SACE Stage 2 Mathematical Studies or equivalent

3. FOUNDATION STUDIES
   - Year 12 students and 18 years of age or older, or
   - Mature age, and
   - Passes in Year 11 Maths and a Science

4. ATN TEST
   - Year 12 students who do not meet requirements for entry into Bachelor of Engineering (Hons) degree, or
   - Mature age, and
   - Should have passed year 11 Maths and Science or equivalent

5. YEAR 12
   - Do not meet requirements for entry into Bachelor of Engineering Degree (Hons)

6. EQUIVALENT TO YEAR 12
   - Do not meet requirements for entry into Bachelor of Engineering degree (Hons)
   - Prerequisites of Stage 2 Mathematical Studies

7. TAFE
   - Completion of a Diploma OR Advanced Diploma in a related field, and
   - Completion of Maths as a prerequisite

YEAR 1
Year 1 Foundation

YEAR 2
Year 1 Associate Degree in Engineering

YEAR 3
Year 2 Associate Degree in Engineering

YEAR 4
OR
Bachelor of Engineering Degree (Hons)

Year 1 SAIBT Diploma of Technology (Engineering and Environment)
World leading teaching and research environment

We are a world-leader in teaching and research, boasting standards of academic excellence in engineering and technology that have been ranked amongst the top 100 universities in the world, the top six in Australia and the only university in South Australia in the 2013-14 Times Higher Education World University Rankings.

These results follow recognition from Excellence in Research Australia for our global vision and outstanding dedication to industry research with the achievement of a world-class or above rating for more than 86 per cent of the University’s assessed research. This includes a ranking of 4 for Engineering – a performance above world standard.

Engineering

In almost every innovation and development you will find an aspect of engineering. From turning on a light switch to supplying entire communities with power, communications and water, the engineer has a role in serving the community by maintaining and improving our quality of life and standard of living. Engineers don’t just develop and apply new technologies, they work in teams on projects that require creativity and innovation, and often end up becoming leaders in business and the community.

At UniSA you will benefit from our vast affiliations with industry gaining hands-on experience through work placements and projects including the Engineers Without Borders Challenge. You will learn from our highly acclaimed academic staff and have access to experiential teaching and learning facilities located at City East and Mawson Lakes including the Mechatronics laboratory, Experience 1 Studio and the new Materials and Minerals Science Learning and Research Hub.
NUMBER 1
in Australia for student satisfaction
in Civil Engineering
- MyUniversity 2013
Our engineering programs are: **World Top 100, Top 6 in Australia**

- 2013-14 Times Higher Education World University Rankings for Engineering and Technology

**World-class research**

in Electrical and Electronic Engineering, Mechanical Engineering, Civil Engineering, Materials Engineering, and Resources Engineering and Extractive Metallurgy

- The Australian Research Council’s 2012 Excellence in Research for Australia (ERA)
Associate Degree in Engineering

Key features

› Pathway to a professional career in engineering.
› Graduate with credit to use towards an engineering program.
› Incorporating a combination of theory-based teaching and practical learning to ensure graduates are job-ready upon completion.

Overview

This program offers the ideal preparation for a professional career in civil, electrical and information or mechanical engineering and a pathway into all Bachelor of Engineering (Honours) programs and specialisations offered at the University of South Australia.

You can choose to complete this program and seek employment as a technologist, designer, specialist technician or managing officer in your area of choice or continue into further study in a Bachelor of Engineering program to become a fully-qualified engineer by Engineers 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?

Upon graduation you will typically secure employment as a technologist, designer, specialist technician, or managing officer in your respective discipline.

Completion of the Associate Degree allows you to transfer into the bachelor degree (with credit) or find employment.

Program schedule

* Indicative for Mechanical specialisation

FIRST YEAR
First Semester (SP 1, 2 or 3)
Essential Mathematics 1: Algebra and Trigonometry
Introduction to Engineering Physics
Computer Techniques
Sustainable Engineering Practice

Second Semester (SP 4, 5 or 6)
Engineering Design and Innovation
Essential Mathematics 2: Calculus
Electricity and Electronics
Engineering Mechanics

SECOND YEAR
First Semester (SP 1, 2 or 3)
Mathematical Methods for Engineers 1
Mechanical Engineering Practice N
Manufacturing Processes
Mechanics of Materials

Second Semester (SP 4, 5 or 6)
Professional Engineering Practice E
Associate Degree in Engineering Project
Industrial Experience A
Engineering Dynamics
Fluid and Energy Engineering
Tristan Perkins
Associate Degree in Engineering

Striving to work in the aerospace industry, with the burning desire to be an astronaut, Tristan Perkins chose the University of South Australia because of its close links with the International Space University through the Southern Hemisphere Summer Space Program. What further appealed to Tristan were the extensive facilities for mechanical pursuits and the University of South Australia’s ranking in the Times Higher Education top 100 for engineering and technology as the highest ranked University in South Australia. When asked about his campus at Mawson Lakes, Tristan says ‘it’s excellent. The campus is massive, with lots of open space environments, filled with modern facilities’.

Further to his study at the University, Tristan recently applied and has been shortlisted for the Mars One mission, meaning he may be one of the first people to live on Mars. Based in the Netherlands, Mars One aims to establish the first human settlement on Mars by 2023.
Bachelor of Engineering (Honours) (Civil)

Key features

› Gain valuable industry insight and integrate your knowledge and skills through 12 weeks of compulsory industrial experience.
› Access industry-standard facilities including the largest strong floor in the southern hemisphere and a 1200m long hydraulic testing facility.
› Incorporating a combination of theory-based teaching and practical learning to ensure graduates are job-ready upon completion.

Overview

The Bachelor of Engineering (Honours) (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 percent of the coursework is project based, including a major industry-related research project and a class design project that models industry practice.

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 you with specialised civil engineering knowledge (see program structure for further information). These courses prepare 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.

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.

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 MyUniv, 89.7 percent 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.

Pathways

On completion of your Honours degree, you may apply for entry to the Master of Engineering (Civil) (LMCV), which can 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.

Program schedule

FIRST YEAR
First Semester (SP 1, 2 or 3)
Computer Techniques
Mathematics for Engineers 1
Sustainable Engineering Practice

Second Semester (SP 4, 5 or 6)
Mathematical Methods for Engineers 2
Engineering Mechanics
Environmental Geology

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

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

THIRD YEAR
First Semester (SP 1, 2 or 3)
Professional Engineering Practice
Civil Engineering Practice

Second Semester (SP 4, 5 or 6)
Geotechnical Engineering
Reinforced Concrete Design
Civil Engineering Elective

FOURTH YEAR
First Semester (SP 1, 2 or 3)
Industrial Experience
Civil Engineering Elective

Second Semester (SP 4, 5 or 6)
Civil Engineering Honours Project
Civil Engineering Elective

Research Theory and Practice
Civil Engineering Elective
Bachelor of

Engineering (Honours) (Civil and Structural)

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.

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 percent 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.

Pathways

On completion of your Honours degree, you may apply for entry to the Master of Engineering (Civil) (LMCV), which can 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.
UniSA preferred score
Mathematical Studies
Prerequisites:
TAFE minimum entry:
SATAC code: 434951
Program code: LHF
ATAR (Feb 2016 cut-off): 70.55
UnISA preferred score (guaranteed entry): 80
TAFE minimum entry: CERT IV
Prerequisites: SACE Stage 2
Mathematical Studies
Assumed knowledge: SACE Stage 2 Physics
International students
CRICOS code: 081810F
Program fees: $529,990 per annum

Key features
› Access exciting facilities including the Engineering Mechatronics Lab and Experience 1 Studio.
› Be prepared for professional practice in engineering through hands-on experience and activities such as the Engineers Without Borders project.
› Incorporating a combination of theory-based teaching and practical learning to ensure graduates are job-ready upon completion.

Overview
The Bachelor of Engineering (Honours) (Electrical and Electronic) prepares you for a professional career in the design and operation of sophisticated devices, equipment, technology, services and systems. Electrical and electronic engineers focus on energy and information, and how they are generated, processed, transferred and controlled in safe and sustainable ways. As an electrical and electronic engineer, you may have the opportunity to work on a range of devices and services from electrical energy generation systems including renewable energy sources, electric and autonomous vehicles, robotics and consumer products such as mobile and internet communications.

What will I study?
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. In addition, you will take courses related to your chosen specialisation, which have been carefully selected to provide you with specialised electrical and electronic engineering knowledge (see program structure for further information). These courses prepare you for professional practice in engineering and provide the opportunity to undertake projects including the Engineers Without Borders project.

This program 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.

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.

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.

Electrical and electronic engineers are in demand in the fields of computers, communications, navigation, industry and entertainment.

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.

Pathways
On completion of your Honours Degree, you may apply for entry to the Master of Engineering (Electrical Power) (LMEL), which can be completed with an additional year of full time study.

Program schedule

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

Second Semester (SP 4, 5 or 6)
Introduction to Engineering Research Practice

SECOND YEAR
First Semester (SP 1, 2 or 3)
Programming for Engineers
Electrical Circuit Theory
Elective 1

Methods of Applied Mathematics 1
Second Semester (SP 4, 5 or 6)
Microcontroller Programming and Interfacing
Electrical Devices and Circuits
Signals and Systems
Elective 2

THIRD YEAR
First Semester (SP 1, 2 or 3)
Digital Circuits and Systems
Linear Electronic Circuits
Control Systems
Professional Engineering Practice E

Second Semester (SP 4, 5 or 6)
Data Communications and Networks
Embedded System Design
Industrial Experience
Systems Engineering
Elective 3

FOURTH YEAR
First Semester (SP 1, 2 or 3)
Engineering Research Practice
Engineering Honours Project 1
Elective 4

Elective 5
Second Semester (SP 4, 5 or 6)
Operation and Control of Modern Power Systems
Engineering Honours Project 2
Elective 6
VLSI Design

FOURTH YEAR (with internship)
First Semester (SP 1, 2 or 3)
Engineering Research Practice
Engineering Internship Research Project

Second Semester (SP 4, 5 or 6)
Elective 4
Elective 5
Elective 6
VLSI Design
Bachelor of Engineering (Honours) (Electrical and Mechatronic)

SATAC code: 434451
Program code: LHIS
ATAR (Feb 2024 cut-off): 72.90
UnISA preferred score (guaranteed entry): 80
TAFE minimum entry: CERT IV
Prerequisites: SACE Stage 2 Mathematics
Assumed knowledge: SACE Stage 2 Physics
International students
CRICOS code: 08181E
Program fees: A$29,990 per annum

Key features
- Access exciting facilities including the Engineering Mechatronics Lab and Experience 1 Studio.
- Be prepared for professional practice in engineering through hands-on experience and activities such as the Engineers Without Borders project.
- Incorporating a combination of theory-based teaching and practical learning to ensure graduates are job-ready upon completion.

Overview
The Bachelor of Engineering (Honours) (Electrical and Mechatronic) program may lead 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 circuitry aimed at achieving pre-set 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.

At UniSA, significant investments have been made in student and research facilities in an effort to create outstanding learning environments for our students. As an engineering student you will 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?
The Bachelor of Engineering (Honours) (Electrical and Mechatronic) has substantial interdisciplinary content. The early years of the program provide a common core 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.

In addition, you will take courses related to your chosen specialisation, which have been carefully selected to provide you with specialised electrical and mechatronics engineering knowledge (see program structure for further information). These courses prepare you for professional practice in engineering and provide the opportunity to undertake projects including the Engineers Without Borders project.

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 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.

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, as well as industrial and mobile robots.

Your 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.

Pathways
On completion of your Honours Degree, you may apply for entry to the Master of Engineering (Electrical Power) (LMEL), which can be completed with an additional year of full time study.

Program schedule
FIRST YEAR
First Semester (SP 1, 2 or 3)
- Mathematical Methods for Engineers 1
- Introduction to Computer Systems
- Computer Techniques

Sustainable Engineering Practice

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

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

Second Semester (SP 4, 5 or 6)
- Microcontroller Programming and Interfacing
- Electronic Devices and Circuits
- Signals and Systems
- University Wide Elective

THIRD YEAR
First Semester (SP 1, 2 or 3)
- Digital Circuits and Systems
- Electrical Machines 1
- Control Systems
- Professional Engineering Practice E

Second Semester (SP 4, 5 or 6)
- Advanced Control
- Power System Analysis
- Embedded System Design
- Industrial Experience
- Systems Engineering

FOURTH YEAR
First Semester (SP 1, 2 or 3)
- Autonomous Mechatronic Systems
- Power Electronics and Drives
- Engineering Research Practice
- Engineering Honours Project 1

Second Semester (SP 4, 5 or 6)
- Operation and Control of Modern Power Systems
- Mechatronic System Integration
- Engineering Honours Project 2
Bachelor of Engineering (Honours) (Mechanical)

Prerequisites:
- TAFE minimum entry: 80
- UniSA preferred score (guaranteed entry): 72.15
- At least two SACE Stage 2 subjects
- One SACE Stage 2 subject from the following: Physics, Mathematics Specialist, Chemistry, Computer Science, Engineering Mathematics, Earth Science, Agriculture Science, Biology

SATAC code: 434321
Program code: LHMR
ATAR (Feb 2016 cut-off): 72.15

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 design 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.

Pathways
- On completion of your Honours Degree, you may apply for entry to the Master of Engineering (LMEB), which can be completed with an additional year of full time study.

Key features
- Learn about the latest developments in machinery design, manufacturing technologies, robotics, and sustainable energy usage and management.
- Access exciting facilities including the Engineering Mechatronics Lab and Experience 1 Studio.
- Incorporating a combination of theory-based teaching and practical learning to ensure graduates are job-ready upon completion.

Overview
Mechanical engineers work to build and design manufactured solutions that use mechanised power and machinery and tools. Use your ability in mathematics and physics to engineer solutions to everyday challenges that affect your world and learn about the latest developments in machinery design, manufacturing technologies, and sustainable energy usage and management.

As a student of UniSA's mechanical engineering program, you will be well-equipped for the exciting challenges that come with working as a professional engineer through an approach to learning that encompasses both theory and practice.

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 UniSA'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.

In addition, you will take courses related to your chosen specialisation, which have been carefully selected to provide you with specialised mechanical engineering knowledge (see program structure for further information). These courses prepare you for professional practice in engineering and provide the opportunity to undertake projects including the Engineers Without Borders project.

Specialised courses provide advanced and innovative topics in mechanical engineering. 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 Formula SAE (Society of Automotive Engineers) 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.

Program schedule

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

SECOND YEAR
- First Semester (SP 1, 2 or 3)
  - Mechanics of Materials
  - Engineering Modelling
  - Manufacturing Processes

- Second Semester (SP 4, 5 or 6)
  - Mechanical Engineering Practice N
  - Engineering Dynamics
  - Mechanical Design Practice
  - Fluid and Energy Engineering

THIRD YEAR
- First Semester (SP 1, 2 or 3)
  - Energy Conversion and Management
  - Professional Engineering Practice E

- Second Semester (SP 4, 5 or 6)
  - Design in Plastics and Advanced Composites
  - Mechanics of Machines

- Third Semester (SP 7, 8 or 9)
  - Operations and Project Management for Engineers
  - Fluid and Energy Management Practice
  - Industrial Experience

FOURTH YEAR
- First Semester (SP 1, 2 or 3)
  - Sustainable Energy System Design
  - Engineering Research Practice
  - Engineering Honours Project 1

- Second Semester (SP 4, 5 or 6)
  - Design for Manufacture and Assembly
  - Sustainable Development and Design Practice
  - Engineering Honours Project 2

FOURTH YEAR (with internship)
- First Semester (SP 1, 2 or 3)
  - Engineering Research Practice
  - Engineering Internship Research Project

- Second Semester (SP 4, 5 or 6)
  - Industrial Actuation and Automation
  - Machine Vision Systems
  - Supply Chain Management
  - Operations Management Systems
Bachelor of

Engineering (Honours) (Mechanical and Advanced Manufacturing)

Key features

› Learn about the latest developments in machinery design, manufacturing technologies, robotics, and sustainable energy usage and management.
› Access exciting facilities including the Engineering Mechatronics Lab and Experience 1 Studio.
› Incorporating a combination of theory-based teaching and practical learning to ensure graduates are job-ready upon completion.

Overview

Advanced manufacturing involves the utilisation of new manufacturing and management techniques using sophisticated, high-precision machines. It also involves the application of information and communication technology (ICT) as well as electronics and new organisational practices within the manufacturing sector to improve products and processes.

This degree focuses on theoretical knowledge and applied exposure to the latest technologies and techniques, a mixture that is highly sought after by today’s employers. You will develop the ability to find practical solutions to engineering problems, and have the opportunity to apply this knowledge through a final-year project with either the Mawson Institute which is one of UniSA's leading research institutes, or a project with one of UniSA’s industry partners.

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 UniSA'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.

In addition, you will take courses related to your chosen specialisation, which have been carefully selected to provide you with specialised mechanical and advanced manufacturing engineering knowledge (see program structure for further information). These courses prepare 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 and manufacturing engineering such as robotics, supply chain management, industrial actuation and automation and quality management. The final-year project offers the choice of a range of industry-based projects or a school-based research 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 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.

Who will employ me?

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.

Pathway

On completion of your Honours Degree, you may apply for entry to the Master of Engineering (LMEB), which can be completed with an additional year of full time study.

Program schedule

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

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

SECOND YEAR
First Semester (SP 1, 2 or 3)
- Mechanics of Materials
- Engineering Modelling
- Manufacturing Processes
- Mechanical Engineering Practice N

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

THIRD YEAR
First Semester (SP 1, 2 or 3)
- Energy Conversion and Management
- Professional Engineering Practice E

Second Semester (SP 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

FOURTH YEAR
First Semester (SP 1, 2 or 3)
- Intelligent Manufacturing Systems
- Total Quality Management
- Engineering Research Practice
- Engineering Honours Project 1

Second Semester (SP 4, 5 or 6)
- Design for Manufacture and Assembly
- Industrial Actuation and Automation
- Engineering Honours Project 2

Key

ML: Mawson Lakes Campus
PT: Part-time program duration in years
EX: External study available
PX: Partial External study available
P: Programme can be completed online
Bachelor of Engineering (Honours) (Mechanical and Mechatronic)

**Key features**

- Learn about the latest developments in machinery design, manufacturing technologies, robotics, and sustainable energy usage and management.
- Access exciting facilities including the Engineering Mechatronics Lab and Experience One Studio.
- Incorporating a combination of theory-based teaching and practical learning to ensure graduates are job-ready upon completion.

**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 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 which 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 UniSA'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.

In addition, you will take courses related to your chosen specialisation, which have been carefully selected to provide you with specialised mechanical and mechatronic engineering knowledge (see program structure for further information). These courses prepare 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.

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 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.

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.

**Who will employ me?**

Mechanical and mechatronic engineering graduates find work locally and internationally in the defence, automotive, aviation, automation, manufacturing and electronic industries. As the interface between mechanical, electrical and automation engineering, graduates will be well positioned to tackle complex multidisciplinary problems.

**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.

**Pathways**

On completion of your Honours Degree, you may apply for entry into the Master of Engineering (LMEB), which can be completed with an additional year of full-time study.

**Program schedule**

**FIRST YEAR**

First Semester (SP 1, 2 or 3)
- Computer Techniques
- Engineering Materials
- Mathematical Methods for Engineers 1
- Sustainable Engineering Practice

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

**SECOND YEAR**

First Semester (SP 1, 2 or 3)
- Mechanics of Materials
- Methods of Applied Mathematics 1
- Introduction to Computer Systems
- Mechanical Engineering Practice N

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

**THIRD YEAR**

First Semester (SP 1, 2 or 3)
- Programming for Engineers
- Professional Engineering Practice E
- Control Systems
- Electromechanics

Second Semester (SP 4, 5 or 6)
- Advanced Control
- Mechanics of Machines
- Mechanics of Machines
- Fluid and Energy Management Practice
- Industrial Experience

**FOURTH YEAR**

First Semester (SP 1, 2 or 3)
- Autonomous Mechatronic Systems
- Computer-Aided Engineering Practice
- Engineering Research Practice
- Engineering Honours Project 1

Second Semester (SP 4, 5 or 6)
- Machine Vision Systems
- Industrial Actuation and Automation
- Engineering Honours Project 2
Engineers equipped to solve everyday challenges

Samuel Rodda
Bachelor of Engineering

The ability to use creativity in solving everyday problems attracted Samuel Rodda to pursue a career in engineering. Samuel has enjoyed the opportunities that come with studying at the University of South Australia, particularly the Global Experience program.

Undertaking a trip to Cambodia in 2012 as part of the program, has been the highlight of Samuel’s studies so far where he ‘performed field work and research specific to his (my) degree,’ which has now been used to develop a thesis for his final-year project.

Samuel recommends that high-school leavers deciding their future paths need to find an activity that they are excited by, or energises them and ‘then focus your efforts on building a career around this.’

‘Life is not about study. It’s about you.’
Bachelor of Engineering (Honours) (Mechatronic)

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, 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.

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.

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 overseas seeking to employ 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.

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.

Pathways

On completion of your Honours Degree, you may apply for entry to the Master of Engineering (LMIEB), which can be completed with an additional year of full time study.

Program requirements

FIRST YEAR

First Semester (SP 1, 2 or 3)
- Introduction to Computer Systems
- Mathematical Methods for Engineers 1
- Sustainable Engineering Practice
- Computer Techniques

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

SECOND YEAR

First Semester (SP 1, 2 or 3)
- Programming for Engineers
- Electromechanics
- Methods of Applied Mathematics 1
- Electrical Circuit Theory

Second Semester (SP 4, 5 or 6)
- Microcontroller Programming and Interfacing
- Engineering Dynamics
- Signals and Systems
- University Wide Elective

THIRD YEAR

First Semester (SP 1, 2 or 3)
- Control Systems
- Professional Engineering Practice E
- Digital Signal Processing
- Digital Circuits and Systems

Second Semester (SP 4, 5 or 6)
- Embedded System Design
- Advanced Control
- Systems Engineering
- Mechatronic System Integration
- Industrial Experience

FOURTH YEAR

First Semester (SP 1, 2 or 3)
- Autonomous Mechatronic Systems
- Intelligent Manufacturing Systems
- Engineering Research Practice
- Engineering Honours Project 1

Second Semester (SP 4, 5 or 6)
- Mechanics of Machines
- Industrial Actuation and Automation
- Or
- Machine Vision Systems
- Engineering Honours Project 2

Key

ML: Mawson Lakes Campus
F: Full time program duration in years
PT: Part-time study available
EX: External study available
PX: Partial External study available
P: Alternative entry pathways available
Out of this world: bio-inspired autonomous innovations

Daniel Griffiths
PhD – Bio-inspired vision / Signal processing

Daniel Griffiths’ project is at the edge of innovation in autonomous systems and mechatronic engineering. Combining an other-worldly blend of algorithms inspired by the nervous system of a fly with the latest technology in machine vision systems, 21-year-old Daniel’s work is something of a leap in bio-inspired engineering, an innovation with very real implications for the defence industry.

‘I chose this field because when I was young I always wanted to solve problems. UniSA was my first choice because it’s recognised around the world as a great place to find solutions through engineering and technology.’
### Entry requirements

#### For undergraduate bachelor degrees and associate degrees

Applicants are required to have completed the South Australian Certificate of Education (SACE) with:

- 200 subject credits (in total);
- a grade C* or higher in the Personal Learning Plan, 20 credits of literacy, 10 credits of numeracy and the Research Project at Stage 2;
- a grade C- or higher in an additional 60 credits at Stage 2;
- a competitive ATAR; and
- the fulfilment of the program’s prerequisite requirements (where applicable).

*For Stage 2 subjects a grade of C- or higher is required

Applicants may also be eligible for entry if they have completed the program’s prerequisite requirements and have one of the following:

- Completed an interstate or overseas qualification considered by the University as equivalent to SACE.
- Completed the International Baccalaureate Diploma with a minimum score of 24 points.

#### Pathways

Entering your chosen program straight from high school is not the only pathway into UniSA. Applicants may also be eligible for entry through one of the following pathways:

- **Tertiary Transfer** – completion or partial completion of a higher education program from a recognised higher education institution.
- **Special Entry** – completion of the Special Tertiary Admissions Test (STAT). A personal competencies statement or employment experience may also be considered.
- **TAFE/Registered Training Organisations (RTO)** – Applicants may be eligible for entry with the completion of an award from TAFE or another Registered Training Organisation at AQF Certificate IV or above. Guaranteed entry into a program is also available to applicants who have completed a qualification that meets the TAFE Preferred requirement listed in each program’s snapshot.

- **Open Universities Australia** – completion of at least four Open Universities Australia (OUA) courses at the appropriate level.
- **Foundation Studies** – completion of a recognised foundation studies program including the University’s Foundation Studies program.

#### Before applying

All applicants should check and ensure that they meet all entry and prerequisite requirements before applying. For some programs, applicants may also be required to attend an interview or present a portfolio.

For more information on entry requirements, visit [unisa.edu.au/future](http://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 Bonus Points**

For students commencing university study in 2015

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 be automatically awarded if students score a C- or better in Year 12 Tertiary Admission Subjects (TAS) relevant to their intended UniSA program.

**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 who do not attend a recognised school, can apply for bonus points by downloading an application form.

For more information or to download the Aspire Application Form, visit [unisa.edu.au/bonuspoints](http://unisa.edu.au/bonuspoints)

For students commencing university study in 2016 and onwards

The three South Australian universities are replacing all existing equity and subject bonus schemes with two new bonus schemes. The new schemes will come in to operation for students studying Year 12 in 2015 who apply for entry in 2016.

The two new schemes are the SA Universities Equity Scheme and the SA Language, Literacy and Mathematics Bonus Point Scheme.

The SA Universities Equity Scheme will provide bonuses in two ways: bonuses for all students in specified schools and bonuses for individuals experiencing disadvantage.

The SA Language, Literacy and Mathematics Bonus Point Scheme encourages students to strengthen their preparation for university studies by undertaking a language other than English, or specified English and Mathematics subjects.

Need some help? For further information, visit [unisa.edu.au/bonuspoints](http://unisa.edu.au/bonuspoints) or 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](http://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.

**How to apply to the University of South Australia**

Go to [satac.edu.au](http://satac.edu.au)

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As per the Australian Government guidelines, the student contribution amounts for 2014 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 – $6,044</td>
</tr>
<tr>
<td>Band 2</td>
<td>Mathematics, statistics, computing, built environment, other health, allied health, science, engineering, surveying, agriculture.</td>
<td>$0 – $8,613</td>
</tr>
<tr>
<td>Band 3</td>
<td>Law, accounting, administration, economics, commerce, dentistry, medicine, veterinary science.</td>
<td>$0 – $10,085</td>
</tr>
</tbody>
</table>

Note: These amounts are for 1 EFTSL (36 units) in 2014. The student contribution amounts for 2015 will be advised by the Federal Government in October 2014, and these will be available to view via [unisa.edu.au/future/fees](http://unisa.edu.au/future/fees) at that time.
**WHAT WILL YOU STUDY?**

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

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

**Diploma**
UniSA offers a range of two-year diploma programs. Diplomas offered through UniSA College provide entry into the second year of a corresponding bachelor program in allied health, arts, business or science and technology. More information on the diplomas offered by UniSA College is available at unisa.edu.au/college. The Division of Education, Arts and Social Sciences offers a one-year Diploma in Languages which allows students to study a language concurrently with their bachelor degree 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.

**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).

**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.

**Master degree**
An award for completing a postgraduate program of at least two years (or part-time equivalent).

**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?**

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

**Major**
A set of related courses which comprises 36 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.

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

**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).

**GENERAL**

**Assumed knowledge**
Some programs require knowledge of certain SACE Stage 2 subjects.

**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.

**CRICOS code**
Code identifying that a University of South Australia program has been registered on the Commonwealth Register of Institutions and Courses for Overseas Students (CRICOS).

**Direct entry**
Programs for which applications are not processed through SATAC but are made direct to the University of South Australia.

**Division**
The University of South Australia is split into four academic divisions – Business School; Education, Arts and Social Sciences; Health Sciences; and Information Technology. Engineering and the Environment – each offering a range of specialised programs.

**Free electives**
A course chosen from any on offer outside your study area, provided that individual course prerequisites are met. Free elective courses are designed to broaden your knowledge and skills beyond your professional field of study.

**Prerequisites**
SACE Stage 2 (Year 12) subjects, or equivalent qualifications required for admission into the program.

**SACE**
The South Australian Certificate of Education or a recognised equivalent qualification.

**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.

**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/bonuspoints

**UniSA Preferred**
If your adjusted ATAR score (inclusive of bonus points) is equal to 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 College diploma programs**
Diplomas offered through UniSA College is available at unisa.edu.au/college. The Division of Education, Arts and Social Sciences offers a one-year Diploma in Languages which allows students to study a language concurrently with their bachelor degree program.

**Glossary**

> **WHAT WILL YOU STUDY?**

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

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

**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.

**Master degree**
An award for completing a postgraduate program of at least two years (or part-time equivalent).

**PhD**
Doctor of Philosophy (PhD) programs normally extend over three years (or part-time equivalent) and involve significant research work.
In this brochure
> Associate Degree in Engineering
> Bachelor of Engineering (Honours) Civil
> Bachelor of Engineering (Honours) Civil and Structural
> Bachelor of Engineering (Honours) Electrical and Electronic
> Bachelor of Engineering (Honours) Electrical and Mechatronic
> Bachelor of Engineering (Honours) Mechanical
> Bachelor of Engineering (Honours) Mechanical and Advanced Manufacturing
> Bachelor of Engineering (Honours) Mechanical and Mechatronic
> Bachelor of Engineering (Honours) Mechatronic

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UniSA College

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University of South Australia

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Information correct at time of printing (April 2014)
CRICOS provider number 00121B