

Bachelor of Engineering (Mechanical and Mechatronic)

Open Day will be held on Sunday 15 August 2010, City West campus. Visit unisa.edu.au/openday

Information Sessions will be held at the **Careers Festival**, Sunday 29 August 2010, Mawson Lakes campus.

To register, visit unisa.edu.au/infosessions

Drop-In Times will be available from 6-10 December 2010, from 9.00am – 7.00pm at Campus Central, Mawson Lakes campus.

An additional **Information Session** will be held on Wednesday 15 December, 2010, at 6.30pm, Mawson Lakes campus. To register visit unisa.edu.au/infosessions

SATAC code	434781
UniSA program code	LBMR
CRICOS code (international students only)	063513J
TER (February 2010 cut-off)	70.05
Program length	4 years
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\$) \$23,500 per annum
Scholarships available	unisa.edu.au/scholarship

Program overview

The program actively integrates mechanical engineering with computing, control, automation and actuation. The program has a strong practical and industry focus and students undertake a project with one of UniSA's research institutes or work on a real-life project with one of UniSA's many industry partners.

Accelerated three-year Engineering program

It is possible to complete this program in less than four years by undertaking courses offered during study period breaks. This accelerated option will be offered by the Program Director to students who achieve outstanding grades in the first year.

What will I study?

In the first year, all Engineering students study eight core engineering courses, including Engineering Design and Innovation, Mathematical Methods for Engineers 1 and 2, Mechanics and Physics, Computer Techniques, Sustainable Engineering Practice and Electrical and Energy Systems. These courses provide a practice-centred foundation to engineering that exposes students to the breadth of cross-disciplinary studies as well as how engineering is applied in industry.

Students undertake a number of hands-on engineering projects including participation in the Engineers Without Borders challenge. By the end of first year, students can choose an area of interest to specialise in. Students then select courses in the areas of design, mechanics, materials, energy, fluids, processes and engineering modelling. Specialised courses in the final year provide advanced and innovative topics in mechanical and applied mechatronics engineering such as robotics, industrial automation and machine vision.

The final-year project offers the choice of a range of industry-based projects or one of the many special School projects. All students in the program undertake 12 weeks of compulsory industrial experience during their study. This experience is highly regarded by students and prospective employers.

Students have the opportunity to apply and integrate the knowledge and skills they have gained during their program in an industry setting. Industry experience also helps students to determine their engineering career pathway as they are able to experience particular sectors prior to graduation.

UniSA, 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/ame/prizes).

Students who graduate from this degree are able to apply for entry into the Master of Engineering (LMEN), and receive credit for four courses completed in the undergraduate degree. Hence it is possible to gain a bachelor and master degree in five years of full-time study.

What does it take?

Students undertaking the program should have an inquiring mind, an aptitude to think clearly and critically. The ability to design, innovate, communicate, identify and solve problems is necessary, and competence in mathematics, physics is essential. Students should have an interest in science as well as social, management and sustainability issues.

Who will employ me?

Mechanical and Applied Mechatronics 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 recognition

The program is professional accredited by Engineers Australia and is recognised as satisfying 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

Honours

Students achieving a credit level average at the end of the third year will 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**

Computer Techniques
 Engineering Materials
 Mathematical Methods for Engineers 1
 Sustainable Engineering Practice
 Electrical and Energy Systems
 Engineering Design and Innovation
 Mathematical Methods for Engineers 2
 Mechanics and Physics

SECOND YEAR

Mechanics and Structures
 Engineering Modelling
 Manufacturing Practice
 Mechanical Engineering Practice N
 Mechanics of Machines
 Mechanical Design Practice
 Fluid and Energy Engineering
 Elective
 Industrial Experience

THIRD YEAR

Design for Manufacture and Assembly
 Energy Conversion and Management
 Project Planning and Control
 Computer Aided Engineering Practice
 Design in Plastics and Advanced Composites
 Engineering Maintenance
 Operations Management for Engineers
 Fluid and Energy Management Practice
 Students are required to select a plan specialisation aligned with their project

FOURTH YEAR

Mechatronics 1
 Industrial Actuation and Automation
 Mechanical Engineering Project 1
 Machine Vision Systems
 Robotics and Automation
 Mechanical Engineering Project 2

FOURTH YEAR (HONOURS)

Mechatronics 1
 Industrial Actuation and Automation
 Mechanical Engineering Project 1
 Machine Vision Systems
 Robotics and Automation
 Mechanical Engineering Honours Project



Jason Dorsey

Product Development Manager, Caroma Dorf Industries Ltd.

'At Caroma Dorf the quality of our products is a reflection of our people and our processes. We employ professional staff and a variety of engineering disciplines demanding the very best when it comes to designing and maintaining our Mechatronic Systems and Processes.

As we strive to remain at the forefront of our industry we will continue to rely upon our engineers developing and improving these mechatronic systems and processes, just as many of our competitors and other machine interactive manufacturers do.

If you are looking for an exciting and rewarding mechanical engineering career I am sure this degree will prepare you well for your future, one with great challenges and fantastic opportunities.'