

Bachelor of Engineering (Mechanical), Bachelor of Management

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	434411
UniSA program code	LBNR
CRICOS code (international students only)	056095C
TER (February 2010 cut-off)	77.70
Program length	5 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

This double degree educates students in the dual disciplines of engineering and management, and aims to produce graduates who are qualified as professional engineers and who have a solid understanding of management and business.

Graduates of this program gain two separate degrees by studying only one year more than it takes to gain the single degree of Bachelor of Engineering (Mechanical Engineering). Students have the flexibility to select specialised engineering courses depending on specific areas of interest, and have access to the latest developments in the areas of mechanical plant

design, advanced manufacturing technologies and sustainable energy usage and management.

The engineering program has a strong practical and industry focus, and combined with a solid management program, graduates from this double degree stand out from the crowd and enhance their career opportunities and potential for further advancement.

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. Over the five years of the program, the engineering studies focus on engineering concepts, computing, problem solving and communication along with advanced studies in mechanical and manufacturing engineering through areas such as machine design, fluid mechanics, manufacturing processes, sustainable design and advanced composites. Specialist final-year courses are offered in advanced manufacturing, sustainable systems, applied mechatronics and nanotechnology.

The management component of the degree covers a range of topics relevant to both business and engineering, and includes law, human resource management, accounting and economics, marketing, strategic management and communication and organisational practices.

During final-year, students complete a research or industry-based engineering project, enabling them to apply the range of skills learned throughout the program in a professional environment.

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).

What does it take?

Students undertaking this degree should have an inquiring mind with good verbal and written communication skills. Competence in mathematics, and physics is essential. Students should have an interest in social, administrative and management issues.

Who will employ me?

This double degree enhances the opportunity for graduates to advance into senior managerial positions. Graduates find employment across all sectors of mechanical engineering as the combination of engineering and management courses in the program is very attractive to potential employers.

Examples of organisations where previous graduates of this double degree have found employment include: ASC; Holden; Monroe Australia; Department of Defence; Transport SA; South Australian

Centre for Manufacturing; The Granites Gold Mine; Southcorp; Walker Australia; Gerard Industries and STRATCO (SA).

Professional recognition

The program is professionally accredited by Engineers Australia and comparable international institutions through the Washington Accord.

For further information on these organisations visit washingtonaccord.org and engineersaustralia.org.au

The Bachelor of Management component is taught by the Division of Business, which is accredited by the European Quality Improvement System, (EQUIS).

Honours

Students achieving a credit level average at the end of fourth year will be invited to enrol in the honours project in Engineering in their final year. Successful completion of the program and honours project may lead to the award of the Bachelor of Engineering with Honours. Honours in the Bachelor of Management degree is available as a one year full-time program for students who have completed the ordinary degree with meritorious performance.

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

Management Principles
Microeconomics
Marketing Principles: Trading and Exchange
Quantitative Methods for Business
Foundations of Business Law
Managing Decision Making
Project Management: Principles and Strategies
Accounting, Decisions and Accountability

THIRD YEAR

Mechanics and Structures
Engineering Modelling
Manufacturing Practice
Mechanical Engineering Practice N
Mechanics of Machines
Mechanical Design Practice
Fluid and Energy Engineering
Engineering Maintenance

FOURTH YEAR

Communication and Organisational Practices
Resource Management and the Supply Chain
Organisational Behaviour
Management Accounting
Foundations of Human Resource Management
International Management
Ethics and Values
Strategic Management
Organisational Administration

FIFTH YEAR

Elective 1
Elective 2
Industrial Experience
Energy Conversion and Management
Computer Aided Engineering Practice
Elective 3
Elective 4
Mechanical Engineering Project 1B

FIFTH YEAR WITH HONOURS

Industrial Experience
Elective 1
Elective 2
Energy Conversion and Management
Computer Aided Engineering Practice
Elective 3
Elective 4
Mechanical Engineering Project 1B Honours

ELECTIVES

Vehicle Emission, Control and Strategy
Machine Vision Systems
Mechatronics 1
Robotics and Automation
Energy and Society
Sustainable Energy System Design
Nanomaterials and Fabrication
Mechanical Systems Design
Nanocomposites and Practice
Design in Plastics and Advanced Composites
Design for Manufacture and Assembly
Sustainable Development and Design Practice
Operations Management for Engineers
Intelligent Manufacturing Systems
Fluid and Energy Management Practice
Industrial Actuation and Automation
Total Quality Management
Project Planning and Control