

HOW DO YOU BECOME A MECHANICAL ENGINEER

First of all, you need

- a strong interest in Mathematics and Physics
- a strong social awareness and concern for the quality of life
- a desire to put ideas into action
- a curiosity about how things work and how to make them better
- a good academic background with above average year 12 results in Mathematics I and II and Physics
- ability and determination to succeed and to continue self-education at the completion of undergraduate studies
- ability in English expression
- a SATAC score high enough to gain selection within the competitive quota.

SPECIAL ENTRY

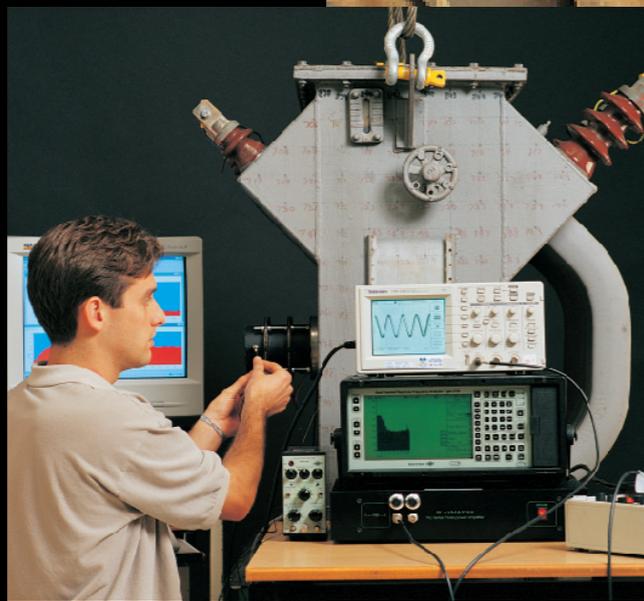
- Mature age students and those with Associate Diplomas in Mechanical Engineering from TAFE are considered on a case by case basis, but mathematics ability must be high.
- Up to 5 special entry students are admitted to the Faculty of Engineering per year.

WHY STUDY AT ADELAIDE?

In addition to the high quality and breadth of the courses offered, the University of Adelaide has a long tradition of excellence in teaching and research and its graduates fare well in the job market. The University was placed in the top group of six Australian Universities in the recent Government Quality Audit. Engineering is taught in state-of-the-art facilities on the University's main North Terrace Campus, located in the heart of the city within minutes of entertainment, shopping and Adelaide's sporting and cultural attractions.

The University provides a variety of student support services and a broad range of extra-curricular and leisure activities to complement your studies. At Adelaide you'll receive an education acknowledged as one of the best in Australia for producing well educated, capable engineers with the right mix of theoretical and practical skills.

You will benefit from the long history and tradition of engineering excellence which has distinguished the Department since 1946.



WHO TO CONTACT

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THE UNIVERSITY
OF ADELAIDE

MECHANICAL
ENGINEERING



WHAT IS MECHANICAL ENGINEERING?

MECHANICAL ENGINEERING IS THE MOST GENERAL FORM OF ENGINEERING AND GRADUATES ARE EMPLOYED IN ANY INDUSTRY IMAGINABLE. IN GENERAL TERMS, THE DISCIPLINE IS CONCERNED WITH THE:

- MANAGEMENT OF PEOPLE AND RESOURCES
- DEVELOPMENT AND USE OF NEW TECHNOLOGIES
- DESIGN OF NEW PROCESSES AND PRODUCTS

Examples of industries where you will work:

- manufacturing
- mining
- water supply
- electricity supply
- engineering consultants
- automotive
- aerospace and aeronautical
- process industries
- electricity generation
- computer manufacture & application
- engineering consultants

What will you gain from a Mechanical Engineering Degree?

A degree in Mechanical Engineering from the University of Adelaide is recognised worldwide and gives you the knowledge and skills to be involved in the design, development and manufacture of products, machines and mechanical engineering systems, including

- engines and turbines
- land transport vehicles
- ships
- aircraft
- building services (*air conditioning, pumps fans, etc.*)
- refrigeration systems
- manufacturing processes & systems
- industrial plants

You will be able to offer expertise to your employer or as a consultant in

- energy technology and efficiency
- combustion
- noise and vibration control
- fluid mechanics and aerospace engineering
- manufacturing (*plant maintenance, processes and systems, quality management*)

- robotics
- automatic control
- computer aided engineering (CAE)

You will also be involved in the

- development and use of new materials
- development of new machines and processes
- use of computer aided engineering tools
- management of people and resources in an engineering environment.

CAREERS RELEVANT TO MECHANICAL ENGINEERING

- Aid worker, helping third world countries by installing essential services.
- Aircraft engine and body designer, or maintainer carrying out condition monitoring and fault diagnosis.
- Computer analyst developing new and more efficient products and manufacturing processes.
- Designer of new production lines for bulk manufacturing of products.
- Designer of novel consumer products.
- Designer of spacecraft and associated launch hardware.
- Developer of new materials (including polymers and steels).
- Developer of better ways of joining materials together (*eg new welding technologies*).
- Electricity generation or distribution engineer responsible for installation and maintenance of power generation and power distribution equipment.
- Engineer responsible for Environmental pollution control.
- Gas turbine designer.
- Initiator of new technology to increase efficiency in industry.
- Inventor (*new equipment and processes*).
- Management consulting - organisational troubleshooting and efficiency improvement
- Manager of specific projects.
- Manager of specialised engineering aspects of companies.
- Manager of a manufacturing or mining company.
- Manufacturing equipment designer.
- Mechanical services in buildings - designer and maintainer (*e.g. air conditioning*).
- Mining equipment designer and maintainer.
- Motor vehicle engine designer.
- Motor vehicle body and component designer.
- Occupational and environmental noise and vibration control engineer.
- Production planning engineer in manufacturing or mining industries.
- Water supply engineer responsible for operation of large pumping stations.
- Quality control engineer for manufactured products.
- Technical manual writer.

UNDERGRADUATE COURSE STRUCTURE AND CONTENT

Design is the back bone of the course, running through all four levels, culminating in a final year design project in level 4. Good Mechanical Engineering is built on a strong foundation of theory reinforced by an amalgam of experience and innovation. Thus, in all levels, the design component is strongly reinforced with engineering science, including Mathematics, Physics, Chemistry, Materials, Statics and Dynamics (the action of forces on stationary and moving bodies), Solid Mechanics, Stress Analysis and Structural Design, Vibrations, Fluid Mechanics, Automatic Control, Thermo-dynamics, Heat Transfer, Electrical and Electronic Engineering Fundamentals, Manufacturing Engineering, Management and Computing. Practical work is carried out in an extensive laboratory program and in project work at all levels of the course. In your final year (Level 4) you may select subjects from a list of electives, some of which are offered by other Departments. Examples of electives are Spacecraft Engineering, Advanced Automatic Control, Advanced Vibrations, Engineering Acoustics, Air-conditioning and Refrigeration, and Computational Fluid Mechanics.

At the end of the course you will have developed a feel for the philosophy and methodology of Mechanical Engineering, be capable of functioning in an environment of rapid technological change, and will know how to go about tackling any unfamiliar engineering problem. This is not to say that your engineering education is over, far from it. One principal aim of the course is to provide graduates with the ability and confidence to continue lifelong education within their chosen profession.

