

# Master of Engineering (with Specialisations)

- + Master degree
- + Graduate Diploma
- + Graduate Certificate

Experience. The Difference.



## Qualifications available

These programs were designed to provide graduates in information and communication technology and electrical engineering oriented disciplines with an advanced understanding of the current practice and technology in one of the following streams:

- Computer Systems Engineering
- Electrical Power Engineering
- Microsystems Technology
- Telecommunications
- Computational Physics (Graduate Certificate only)

In addition, a general stream is available without a specialisation.

## What will I study?

The Master degree requires the completion of postgraduate level courses totalling 54 units equivalent to 1.5 academic years of full time study. 6 of the completed courses (27 units) must be selected from core courses listed for the chosen specialisation. Eligible (high performing) students may also be allowed to replace 18 units of courses by a minor research thesis comprising supervised project work.

The Graduate Diploma requires the completion of postgraduate level courses totalling 36 units and can be completed within 1 year of full-time study. 6 of the completed courses (27 units) must be selected from core courses listed for the chosen specialisation. Students may also progress to the Master level program where offered. Courses completed as part of the Graduate Diploma will be credited towards the Master degree.

The Graduate Certificate requires the completion of postgraduate level courses totalling 18 units and can be completed within 6 months of full-time study. 3 of the completed courses (27 units) must

be selected from core courses listed for the chosen specialisation. In case of subsequent admission into Graduate Diploma or Master programs, students will be able to claim credit for courses completed as part of the Graduate Certificate.

## Summary of specialisations

### • Computer Systems Engineering

Courses in this specialisation cover advanced topics in computer hardware and software design, system design, computer communications and advanced Internet infrastructure, e.g. for electronic commerce. A thesis option comprising a supervised research project on advanced computer systems engineering topics is available for high performing Master students.

### • Electrical Power Engineering

Electricity generation and supply are the backbone of all modern societies. Rapidly evolving technology, along with the size and complexity of the systems involved, make it imperative for electrical power engineers to constantly update their knowledge and skills. This specialisation stream provides advanced education and training in the theory and techniques related to electrical power. Courses offered cover advanced topics in electrical energy systems, control, power electronics and mechatronics. A thesis option is available for selected Master students based on academic merit.

### • Microsystems Technology

The microelectromechanical systems (MEMS) is a rapidly emerging technology aimed at producing micro-machines and structures the size of a grain of sand. The development of MEMS combines electrical, electronic, mechanical, optical, materials, chemical and fluids engineering disciplines. The courses offered as part of this specialisation cover advanced topics in the above disciplines. A thesis option is available for selected Master students based on academic merit.

- **Telecommunications**

During the last decade, there has been a huge global growth in the telecommunications industry, particularly in mobile communications and the Internet. This specialisation caters for a wide range of communications industry professionals. It offers courses covering advanced topics in communications signal processing, modulation and coding theory, mobile communications systems, satellite communications and telecommunication networks. These programs are strongly supported by UniSA's Institute for Telecommunications Research (ITR). A thesis option is available for selected Master students based on academic merit.

- **Computational Physics (Graduate Certificate only)**

Courses offered as part of this stream cover advanced topics in applied physics, computational physics, and measurement and control in physical systems.

## Applications

### Domestic students only

Applications are made to SATAC:  
[www.satac.edu.au](http://www.satac.edu.au)

### International students only

Applications are made directly to the University:  
[www.unisa.edu.au/applyonline](http://www.unisa.edu.au/applyonline)

### School of Electrical and Information Engineering

[www.unisa.edu.au/eie](http://www.unisa.edu.au/eie)

### Location:

Mawson Lakes campus

### Program contacts:

Program Director  
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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.

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## Why UniSA?

UniSA represents a long tradition of strong links between its engineering education and training programs and the relevant research and industry practice. Your potential employers in the Information and Communication Technologies (ICT) industry have maintained long term involvement in supporting our engineering programs by providing valuable input to the process of designing and updating the engineering curriculum, offering industrial experience placements, funding scholarships and prizes for high performing students, and sponsoring final year engineering projects. The majority of postgraduate level courses are offered by academics who are active as researchers and engineering practitioners in their field and are able to offer the resulting expertise as part of their teaching. Our programs are also directly supported by the relevant UniSA research institutes.

Our strong links with industry and research organisations ensure that the degrees offered by UniSA are highly relevant to industry employers at local, national and international level.

## Who will employ me?

Depending on the specialisation, you will find employment in industry and research organisations covering a wide range of areas e.g. ICT (telecommunications, computers and electronics, information technology), power generation and supply, defence, manufacturing, automotive and many other areas of activity where the knowledge and skills gained through our programs are required to design and create products and services.

## Who is eligible?

To enter our postgraduate programs, you will normally hold an undergraduate degree (or equivalent) within a relevant ICT, Electrical Engineering or Science discipline.

To be eligible for Master and Graduate Diploma programs, you will be able to demonstrate academic merit at a minimum of Credit level, e.g. an undergraduate degree obtained with a GPA of 5.0 for Australian applicants (or equivalent for international applicants).

For international applicants, the English language requirements include either successful completion of a tertiary qualification (diploma level or above) in Australia or one taught in the English language in a country where English is an official or common language, or an overall IELTS score of 6.5 with a minimum of 6 in reading and writing.