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**power**  
of a changing  
world

## Bachelor of Engineering (Electrical and Electronic) (Honours)

Electrical and electronic engineers play a role in almost every aspect of modern life, from the circuits inside your smartphone to the energy systems that power our cities. This degree teaches you how to design, develop and maintain electrical and electronic systems of all shapes and sizes, and qualifies you to commence practice as a professional electrical and electronic engineer.

In this degree you will:

- Study the fundamentals of engineering, including applied maths, physics, statics and systems design
- Develop in-depth skills in electrical and electronic engineering theory, standards and practice
- Complete specialist courses in circuit design and analysis, electrical power systems (including renewable energy), robotics and automation, computer programming and more
- Understand the social, economic and environmental dimensions of engineering, and the importance of sustainable development
- Develop advanced problem solving, communication and project management skills

### Exemption for first year Mathematics

Students who enter the program having achieved a 'Very High Achievement' in Maths C in secondary school may be

eligible for an exemption for the courses **MTH103** Introduction to Applied Mathematics and **MTH104** Introductory Calculus. On application, and approval, to Student Services and Engagement, students may substitute two engineering-relevant courses in order to fulfil the requirements of the degree. Students are advised to consult with the program coordinator when selecting substitute courses.

### Post-admission requirements

Students must complete 60 days of suitable engineering work experience.

### Career opportunities

Electrical and electronic engineers work on the design, manufacture, testing and maintenance of electrical and electrical systems across a range of industries, including infrastructure construction, data communications, aviation, mining, power generation and transmission (including renewable energy and smart grids), automotive, automation, robotics and domestic appliances.

### Membership

Engineering students are eligible for free membership to Engineers Australia. Once their degree is completed they are eligible for Graduate membership.

### Accreditation

This program is currently undergoing provisional accreditation by Engineers Australia.

### MORE INFORMATION

Contact the International Office  
[study@usc.edu.au](mailto:study@usc.edu.au)  
+61 7 5430 2843

[usc.edu.au/sc404](http://usc.edu.au/sc404) | CRICOS code: 0100794

University of the Sunshine Coast | CRICOS Provider Number: 01595D | Correct as at 25 September 2021  
Note: Study options and semester of offer can vary depending on the study location. For full details, visit [usc.edu.au](http://usc.edu.au).

 **USC**  
Rise, and shine.

# PROGRAM STRUCTURE

## Introductory courses (8) 96 units

**ENG101** Foundations of Engineering  
**ENG102** Engineering Statics  
**ENG103** Introduction to the Internet of Things  
**ENG104** Introduction to Engineering Design  
**MTH103** Introduction to Applied Mathematics  
**MTH104** Introductory Calculus  
**SCI107** Physics  
**SCI110** Science Research Methods

## Developing courses (8) 96 units

**ELC200** Digital Logic and Computer Programming  
**ELC201** Analog Electronic Circuits  
**ELC202** Electrical Circuits and Systems  
**ELC203** Power Systems  
**ELC204** Analogue and Digital Electrical Systems  
**ELC205** Control Systems  
**MTH201** Calculus II and Linear Algebra  
**MTH203** Numerical Analysis

## Graduate courses (12) 144 units

**ELC300** Electronic Design and Analysis  
**ELC301** Communications Engineering (Hardware and protocols)  
**ELC302** Digital Signal Processing  
**ELC303** Electronic Measurement and Instrumentation  
**ELC304** Embedded System Design  
**ELC400** Robotics and Autonomous Systems  
**ELC401** Advanced Digital Communications  
**ELC402** Power System Design and Analysis  
**ENG302** Engineering Project Management  
**ENG304** Engineering Research Methodology  
**ENG401** Engineering Project 1  
**ENG402** Engineering Project 2

## Minor courses (4) 48 units

Students must select one of the following minor study areas:

- Civil Engineering (for Electrical and Electronic Engineers)
- Climate Change and Coastal Zone Studies
- Entrepreneurship
- Environmental Studies for Engineers<sup>^</sup>
- Management for Engineers<sup>^</sup>
- Mechanical Engineering (for Electrical and Electronic Engineers)
- Mechatronic Engineering (for Electrical and Electronic Engineers)
- Wider Engineering Studies

<sup>^</sup>Not available at Moreton Bay campus.

## Honours

The Bachelor of Engineering (Electrical and Electronic) (Honours) may be awarded with a class of Honours to a student:

- with the percentage results achieved in twelve courses as specified in the table below; and
- achieving at least 65% in **ENG402** Engineering Research Project 2.

## COURSES

**MTH203** Numerical Analysis  
**ELC300** Electronic Design and Analysis  
**ELC301** Communications Engineering (Hardware and protocols)  
**ELC303** Electronic Measurement and Instrumentation  
**ENG302** Engineering Project Management  
**ELC302** Digital Signal Processing  
**ENG304** Engineering Research Methodology  
**ELC304** Embedded System Design  
**ENG401** Engineering Project 1  
**ENG402** Engineering Project 2  
**ELC401** Advanced Digital Communications  
**ELC402** Power System Design and Analysis

- The minimum levels of achievement normally required for each class of honours are shown in the following table:

HONOURS RESULTS CLASSIFICATION	OVERALL PERCENTAGE ATTAINED IN SPECIFIED COURSES*
Honours Class I	80% - 100%
Honours Class IIA	70% - 79%
Honours Class IIB	60% - 69%

\*The percentage result shall be rounded up if  $\geq 0.5$  or rounded down if  $< 0.5$ .

Note: Program structures are subject to change. Not all USC courses are available on every USC campus.