

# Bachelor of Engineering (Mechatronic) (Honours)



LOCATION	ENTRY THRESHOLD	QTAC CODE	START
Moreton Bay	61.00	014721	Semester 1, Semester 2

Help engineer the future. Forget about robots coming to take your job – instead, make it your job to design the robots and automated systems of the future! Mechatronics is an exciting field that combines the best of mechanical, electrical and electronic and computer engineering to create new technologies and constantly improve the systems around us

In this program you will:

- Study the fundamentals of engineering, including applied maths, physics, statistics and system design
- Learn about robotics and autonomous systems, communication engineering, digital logic and computer programming, machine vision and more
- Choose the area you want to specialise in, including electrical and electronic or mechanical engineering, management or entrepreneurship
- Gain hands-on project management experience

Career opportunities

- Robotics engineering
- Industrial engineering
- Product design
- Manufacturing
- Data communications
- Automotive

Accreditation

This program is currently undergoing provisional accreditation by Engineers Australia.

Post admission requirements

Students must complete 60 days of suitable engineering work experience.

Duration

4 years

Full-time or equivalent part-time

Indicative 2022 fees

A\$7,252 - 2023 Fees (CSP)

Fees are indicative only and will change based on courses selected and are subject to yearly increases

Prerequisites

English (Units 3 and 4, C),  
Maths Methods (Units 3 and 4, C)

Recommended prior study

Specialist Maths; and Physics or Chemistry

Delivery mode

Blended Learning

Total courses

32

Total units

384

UniSC program code

SC405

## 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

[usc.edu.au/sc405](http://usc.edu.au/sc405)

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Study options and teaching period of offer can vary depending on the study location. For full details, visit [usc.edu.au](http://usc.edu.au).

Developing courses (8) 96 units

ELC200 Digital Logic and Computer Programming  
ELC201 Analog Electronic Circuits  
ELC205 Control Systems  
MEC200 Thermofluids 1  
MEC205 Dynamics 1  
MEC221 Mechanics of Materials  
MEC225 Engineering Materials  
MCH200 Mechatronic Design 1

Graduate courses (12) 144 units

MTH201 Calculus II and Linear Algebra  
MTH203 Numerical Analysis  
ELC301 Communications Engineering (Hardware and protocols)  
ELC304 Embedded System Design  
ENG302 Engineering Project Management  
ENG304 Engineering Research Methodology  
MCH301 Mechatronic Design 2  
MEC336 Engineering System Design  
ELC400 Robotics and Autonomous Systems  
ENG401 Engineering Project 1  
ENG402 Engineering Project 2  
MCH400 Image Processing and Machine Vision

Minor courses (4) 48 units

Students must select one of the following minor study areas:

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

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

Honours

The Bachelor of Engineering (Mechatronic) (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

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MTH203 Numerical Analysis

MCH200 Mechatronic Design 1

ELC301 Communications Engineering (Hardware and protocols)

MEC336 Engineering System Design

ENG302 Engineering Project Management

MCH301 Mechatronic Design 2

ELC304 Embedded System Design

ENG304 Engineering Research Methodology

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ENG401 Engineering Project 1

ENG402 Engineering Project 2

ELC400 Robotics and Autonomous Systems

MCH400 Image Processing and Machine Vision

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- 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%

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\*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.