

# Bachelor of Engineering (Mechatronic) (Honours)



Moreton Bay, Semester 2 2022

## Program structure

Introductory courses (8) 96 units

ENG100 Materials in Engineering  
ENG101 Professional Engineering  
ENG104 Engineering Design  
ENG105 Engineering Statics  
ENG106 Engineering Computing  
MTH103 Introduction to Applied Mathematics  
MTH104 Introductory Calculus  
SCI107 Physics

Developing courses (9) 96 units

ELC200 Digital Logic and Computer Programming  
ELC206 Analog and Digital Electronics  
ENG200 Professional Practice(0 units)  
ENG206 Sustainable Engineering (Design)  
MEC200 Thermodynamics  
MCH201 Systems and Signals  
MCH202 Electrical Machines and Drives  
MTH201 Calculus II and Linear Algebra  
MTH203 Numerical Analysis

Graduate courses (14) 192 units

ELC300 Electronic Design  
ELC302 Digital Signal Processing  
ENG305 Engineering Management  
ENG306 Engineering System Design  
MCH300 Machine Component Design  
MCH302 Robotics and Autonomous Systems  
MCH303 Engineering Computer Applications and Interactive Modelling  
MEC308 System Dynamics and Control  
ELC404 Advanced Digital and Embedded Systems  
ENG406 Engineering Project 1(24 units)  
ENG407 Engineering Project 2(24 units)  
MCH400 Image Processing and Machine Vision  
MCH401 Actuators and Drives in Mechatronic Systems  
MCH402 Advanced Control Systems Engineering

Honours

The Bachelor of Engineering (Mechatronic) (Honours) may be awarded with Honours.

The class of Honours awarded to a student is calculated using the mean mark achieved when completing the 96 units of AQF8 level courses (400 coded).

[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).

| HONOURS RESULTS CLASSIFICATION | MEAN MARK ACHIEVED IN AQF8 COURSES (400 CODED) |
|--------------------------------|--|
| Honours Class I                | 80% - 100%                                     |
| Honours Class IIA              | 70% - 79.5%                                    |
| Honours Class IIB              | 60% - 69.5%                                    |
| Honours Class III              | 50% - 59.5%                                    |
| Marginal Fail                  | 47% - 49.5%                                    |
| Fail                           | 0% - 46.5%                                     |

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

Total units: 384

## Study sequence

### Semester 2

| COURSE                       | SEMESTER OF OFFER<br>(MORETON BAY) | UNITS | REQUISITES      |
|------------------------------|------------------------------------|-------|-----------------|
| ENG104 Engineering Design    | • Semester 2                       | 12    | Anti:<br>ENG202 |
| ENG105 Engineering Statics   | • Semester 2                       | 12    | Anti:<br>ENG102 |
| ENG106 Engineering Computing | • Semester 2                       | 12    | Anti:<br>ENG103 |
| MTH104 Introductory Calculus | • Semester 2                       | 12    | Anti:<br>MTH202 |

### Semester 1

| COURSE                                     | SEMESTER OF OFFER<br>(MORETON BAY) | UNITS | REQUISITES                |
|--|------------------------------------|-------|---------------------------|
| ENG100 Materials in Engineering            | • Semester 1                       | 12    |                           |
| ENG101 Professional Engineering            | • Semester 1                       | 12    |                           |
| MTH103 Introduction to Applied Mathematics | • Semester 1                       | 12    | Anti:<br>MTH102           |
| SCI107 Physics                             | • Semester 1                       | 12    | Anti:<br>SCI108 or SCI507 |

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## Semester 2

| COURSE  | SEMESTER OF OFFER<br>(MORETON BAY) | UNITS | REQUISITES   |
|---|------------------------------------|-------|--|
| ELC200 Digital Logic and Computer Programming | • Semester 2                       | 12    | Pre:<br>ENG103 or ENG106   |
| ENG206 Sustainable Engineering (Design)       | • Semester 2                       | 12    | Pre:<br>ENG104   |
| MEC200 Thermodynamics                         | • Semester 2                       | 12    | Pre:<br>SCI107   |
| MTH203 Numerical Analysis                     | • Semester 2                       | 12    | Pre:<br>MTH202 or (MTH103 and MTH104)<br><br>Anti:<br>MTH532 or MTH312 |

## Semester 1

| COURSE                                | SEMESTER OF OFFER<br>(MORETON BAY) | UNITS | REQUISITES               |
|---------------------------------------|------------------------------------|-------|--------------------------|
| MTH201 Calculus II and Linear Algebra | • Semester 1                       | 12    | Pre:<br>MTH104 or MTH202 |
| ELC206 Analog and Digital Electronics | • Semester 1                       | 12    | Pre:<br>ENG106 or ENG103 |
| MCH201 Systems and Signals            | • Semester 1                       | 12    | Pre:<br>MTH104           |
| MCH202 Electrical Machines and Drives | • Semester 1                       | 12    | Pre:<br>SCI107           |

## Semester 2

| COURSE                                 | SEMESTER OF OFFER<br>(MORETON BAY) | UNITS | REQUISITES               |
|--|------------------------------------|-------|--------------------------|
| ELC300 Electronic Design               | • Semester 2                       | 12    |                          |
| ENG305 Engineering Management          | • Semester 2                       | 12    |                          |
| MCH302 Robotics and Autonomous Systems | • Semester 2                       | 12    |                          |
| MEC308 System Dynamics and Control     | • Semester 2                       | 12    | Pre:<br>MCH201 or ELC202 |

## Semester 1

| COURSE                           | SEMESTER OF OFFER<br>(MORETON BAY) | UNITS | REQUISITES               |
|----------------------------------|------------------------------------|-------|--------------------------|
| ELC302 Digital Signal Processing | • Semester 1                       | 12    |                          |
| ENG306 Engineering System Design | • Semester 1                       | 12    | Pre:<br>ENG206 or ENG104 |

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|  |              |    |  |
|--|--------------|----|--|
| MCH300 Machine Component Design                                    | • Semester 1 | 12 | Anti:<br>MEC336<br><br>Pre:<br>ENG105 or ENG102<br><br>Anti:<br>MCH301 |
| MCH303 Engineering Computer Applications and Interactive Modelling | • Semester 1 | 12 | Pre:<br>ELC200   |

## Semester 2

| COURSE                                       | SEMESTER OF OFFER<br>(MORETON BAY) | UNITS | REQUISITES  |
|--|------------------------------------|-------|---|
| ELC404 Advanced Digital and Embedded Systems | • Semester 2                       | 12    | Pre:<br>Enrolled in Program GC004, GD004, MC004, GC005, GD005, MC005, GC006, GD006, MC006, SC404 or SC405                             |
| ENG406 Engineering Project 1                 | • Semester 1, Semester 2           | 24    | Pre:<br>Enrolled in Program SC404, SC405, SC410, SC411 or SC425<br><br>Anti:<br>ENG401  |
| MCH402 Advanced Control Systems Engineering  | • Semester 2                       | 12    | Pre:<br>Enrolled in Program GC003, GD003, MC003, GC004, GD004, MC004, GC005, GD005, MC005, GC006, GD006, MC006, SC404, SC405 or SC411 |

## Semester 1

| COURSE   | SEMESTER OF OFFER<br>(MORETON BAY) | UNITS | REQUISITES   |
|--|------------------------------------|-------|--|
| ENG407 Engineering Project 2                       | • Semester 1, Semester 2           | 24    | Pre:<br>ENG406 and enrolled in Program SC404, SC405, SC410, SC411 or SC425<br><br>Anti:<br>ENG402  |
| MCH400 Image Processing and Machine Vision         | • Semester 1                       | 12    | Pre:<br>Enrolled in Program GC004, GD004, MC004, GC006, GD006, MC006, SC404, SC405, SC410 or SC411 |
| MCH401 Actuators and Drives in Mechatronic Systems | • Semester 1                       | 12    | Pre:<br>Enrolled in Program GC004,   |

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## Program requirements and notes

In order to graduate you must:

- Successfully complete 384 units as outlined in the Program Structure
- Complete a minimum of 60 days of suitable work experience. Students must meet all costs associated with the acquisition of practical experience to satisfy this requirement

### Program notes

- Completing this program within the specified (full-time) duration is based on studying 48 unit points per semester (normally 4 courses) and following the recommended study sequence
- The unit value of all courses is 12 units unless otherwise specified
- It is each student's responsibility to enrol correctly according to your course requisites, program rules and requirements and be aware of the academic calendar dates
- Courses within this program are assessed using a variety of assessment methods including essays, seminar presentations, reports, in-class tests and examinations. Not all courses will necessarily include all methods
- As part of your UniSC program, you may apply to Study Overseas to undertake courses with an overseas higher education provider
- Refer to the Managing your progression page for help in understanding your program structure, reviewing your progress and planning remaining courses.

### WIL notes

- Refer to Engineering - Work Experience