Bachelor of

# Engineering (Mechanical) (Honours)

## Moreton Bay, Semester 2 2024

## 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

ENG200 Professional Practice(0 units)
ENG206 Sustainable Engineering (Design)
MEC200 Thermodynamics
MEC202 Mechanical Design
MEC221 Mechanics of Materials
MEC226 Manufacturing Technology
MCH201 Systems and Signals
MTH201 Calculus II and Linear Algebra
MTH203 Numerical Analysis

Graduate courses (14) 192 units

ENG305 Engineering Management
ENG306 Engineering System Design
MCH300 Machine Component Design
MCH302 Robotics and Autonomous Systems
MEC304 Engineering Dynamics
MEC305 Fluid Mechanics
MEC308 System Dynamics and Control
MEC335 Production Engineering
ENG406 Engineering Project 1(24units)
ENG407 Engineering Project 2(24 units)
MCH402 Advanced Control Systems Engineering
MEC401 Advanced Engineering Materials
MEC402 Heat Transfer
MEC403 Computational Analysis

Honours

The Bachelor of Engineering (Mechanical) (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).

| HONOURS RESULTS CLASSIFICATION | MEAN MARK ACHIEVED IN AQF8 COURSES (400 CODED) |
|---|---|
| Honours Class I | 80% - 100% |


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

Semester 1

| COURSE | SEMESTER OF OFFER (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: MTH102 |
| SCI107 Physics | • Semester 1 | 12 | Anti: SCI108 or SCI507 |

Semester 2

| COURSE | SEMESTER OF OFFER (MORETON BAY) | UNITS | REQUISITES |
|---|---|---|---|
| ENG206 Sustainable Engineering (Design) | • Semester 2 | 12 | Pre: ENG104 |
| MEC200 Thermodynamics | • Semester 2 | 12 | Pre: SCI107 |

| | | | |
|---|---|---|---|
| MEC202 Mechanical Design | • Semester 2 | 12 | Pre:<br>ENG104 |
| 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 (MORETON BAY) | UNITS | REQUISITES |
|---|---|---|---|
| MCH201 Systems and Signals | • Semester 1 | 12 | Pre:<br>MTH104 |
| MEC221 Mechanics of Materials | • Semester 1 | 12 | Pre:<br>ENG102 or ENG105<br><br>Anti:<br>ENG221 |
| MEC226 Manufacturing Technology | • Semester 1 | 12 | Anti:<br>ENG226 |
| MTH201 Calculus II and Linear Algebra | • Semester 1 | 12 | Pre:<br>MTH104 or MTH202 |

Semester 2

| COURSE | SEMESTER OF OFFER (MORETON BAY) | UNITS | REQUISITES |
|---|---|---|---|
| ENG305 Engineering Management | • Semester 2 | 12 | |
| MCH302 Robotics and Autonomous Systems | • Semester 2 | 12 | |
| MEC305 Fluid Mechanics | • Semester 2 | 12 | Pre:<br>MEC200 |
| MEC308 System Dynamics and Control | • Semester 2 | 12 | Pre:<br>MCH201 or ELC202 |

Semester 1

| COURSE | SEMESTER OF OFFER (MORETON BAY) | UNITS | REQUISITES |
|---|---|---|---|
| ENG306 Engineering System Design | • Semester 1 | 12 | Pre:<br>ENG206 or ENG104<br><br>Anti:<br>MEC336 |
| MCH300 Machine Component Design | • Semester 1 | 12 | Pre:<br>ENG105 or ENG102<br><br>Anti:<br>MCH301 |
| MEC304 Engineering Dynamics | • Semester 1 | 12 | Pre: |

| | | | |
|---|---|---|---|
| | | | MTH104 or MTH202<br>Anti:<br>MEC205 |
| MEC335 Production Engineering | • Semester 1 | 12 | Pre:<br>MEC226<br><br>Anti:<br>ENG335 |

Semester 2

| COURSE | SEMESTER OF OFFER (MORETON BAY) | UNITS | REQUISITES |
|---|---|---|---|
| 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 |
| MEC403 Computational Analysis | • Semester 2 | 12 | Pre:<br>Enrolled in Program GC002, GD002, MC002, GC003, GD003, MC003, GC006, GD006, MC006, SC410 or SC411<br><br>Anti:<br>MEC303 or ENG303 |

Semester 1

| COURSE | SEMESTER OF OFFER (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 |
| MEC401 Advanced Engineering Materials | • Semester 1 | 12 | Pre:<br>Enrolled in Program GC003, GD003, MC003, GC006, GD006, MC006 or SC411 |
| MEC402 Heat Transfer | • Semester 1 | 12 | Pre:<br>MEC200 and (MEC305 or MEC302) |

# 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 students 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