

Bachelor of

Engineering (Electrical and Electronic) (Honours)



Moreton Bay, Semester 1 2022

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
- Environmental Studies for Engineers[^]
- Management for Engineers[^]
- Mechanical Engineering (for Electrical and Electronic Engineers)
- Mechatronic Engineering (for Electrical and Electronic Engineers)
- Wider Engineering Studies

[^]Not available at Moreton Bay campus.

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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 ≥ 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.

Total units: 384

Study sequence

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Year 1

Semester 1

COURSE	SEMESTER OF OFFER (MORETON BAY)	UNITS	REQUISITES
ENG101 Foundations of Engineering	• Semester 1	12	
MTH103 Introduction to Applied Mathematics	• Semester 1	12	Anti: MTH102
SCI107 Physics	• Semester 1	12	Anti: SCI108 or SCI507
SCI110 Science Research Methods	• Semester 1, Semester 2	12	Anti: SCI201 or CPH261

Semester 2

COURSE	SEMESTER OF OFFER (MORETON BAY)	UNITS	REQUISITES
ENG102 Engineering Statics	• Semester 2	12	Pre: (SCI107 and (MTH103 or MTH102) and enrolled in Program SC404, SC405, SC410, SC411 SC425) or AB101, UU301, UU302 or XU301 Anti: CIV1501(USQ equivalent course)
ENG103 Introduction to the Internet of Things	• Semester 2	12	
ENG104 Introduction to Engineering Design	• Semester 2	12	Anti: ENG202
MTH104 Introductory Calculus	• Semester 2	12	Anti: MTH202

Year 2

Semester 1

COURSE	SEMESTER OF OFFER (MORETON BAY)	UNITS	REQUISITES
ELC200 Digital Logic and Computer Programming	• Semester 1	12	Pre: ENG103
ELC201 Analog Electronic Circuits	• Semester 1	12	Pre: ENG103 and must be enrolled in Program SC404, SC405, SC410, SC411, SC425 or SC305
ELC202 Electrical Circuits and Systems	• Semester 1	12	Pre: ENG103 and must be enrolled

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in Program SC404, SC405,
SC410, SC411 or SC425

MTH201 Calculus II and Linear Algebra	• Semester 1	12	Pre: MTH104 or MTH202
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Semester 2

COURSE	SEMESTER OF OFFER (MORETON BAY)	UNITS	REQUISITES
ELC203 Power Systems	• Semester 2	12	Pre: ELC202 and must be enrolled in Program SC404, SC405, SC410, SC411 or SC425
ELC204 Analogue and Digital Electrical Systems	• Semester 2	12	Pre: ELC200 and must be enrolled in Program SC404, SC405, SC410, SC411, SC425 or SC305
ELC205 Control Systems	• Semester 2	12	Pre: MTH201 and enrolled in Program SC404, SC405, SC410, SC411, SC425
MTH203 Numerical Analysis	• Semester 2	12	Pre: MTH202 or (MTH103 and MTH104) Anti: MTH532 or MTH312

Year 3

Semester 1

COURSE	SEMESTER OF OFFER (MORETON BAY)	UNITS	REQUISITES
ELC300 Electronic Design and Analysis	• Semester 1	12	Pre: ELC201 and ELC204
ELC301 Communications Engineering (Hardware and protocols)	• Semester 1	12	Pre: ELC200
ELC302 Digital Signal Processing	• Semester 1	12	Pre: ELC204
ENG302 Engineering Project Management	• Semester 1	12	

Semester 2

COURSE	SEMESTER OF OFFER (MORETON BAY)	UNITS	REQUISITES
ELC303 Electronic Measurement and Instrumentation	• Semester 2	12	Pre: ELC300
ELC304 Embedded System Design	• Semester 2	12	Pre:

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ENG304 Engineering Research Methodology	• Semester 2	12	ELC205 and Course Coordinator Consent Required Pre: 192 units and enrolled in Program SC404, SC405, SC410, SC411, SC425
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PLUS select 1 course from your chosen minor study area

Year 4

Semester 1

COURSE	SEMESTER OF OFFER (MORETON BAY)	UNITS	REQUISITES
ELC400 Robotics and Autonomous Systems	• Semester 1	12	Pre: ELC304
ELC401 Advanced Digital Communications	• Semester 1	12	Pre: ELC301
ENG401 Engineering Project 1	• Semester 1, Semester 2	12	Pre: MEC221 or ELC200, and 228 units completed and enrolled in Program SC404, SC405, SC410, SC411 or SC425 Co: ENG302 and (ENG403 or ENG304)

PLUS select 1 course from your chosen minor study area

Semester 2

COURSE	SEMESTER OF OFFER (MORETON BAY)	UNITS	REQUISITES
ELC402 Power System Design and Analysis	• Semester 2	12	Pre: ELC203
ENG402 Engineering Project 2	• Semester 1, Semester 2	12	Pre: ENG401

PLUS select 2 courses from your chosen minor study area

Program requirements and notes

In order to graduate you must:

- Successfully complete 384 units as outlined in the Program Structure
- Select a minor from one of the minors as listed below. Students must choose the minor to be studied before the completion of Semester 1, Year 3
- 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

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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 course requisites, program rules and requirements, and to 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
- Refer to the Managing your progression page for help in understanding your program structure, reviewing your progress and planning remaining courses.