

## Bachelor of Engineering Science (BENS) - BEngSci

QTAC code (Australian and New Zealand applicants): Toowoomba campus: 907901; External: 907905;  
Springfield campus: 927902

CRICOS code (International applicants): 079333D

	On-campus*	External#@
<b>Start:</b>	Semester 1 (February) Semester 2 (July)	Semester 1 (February) Semester 2 (July) Semester 3 (November)
<b>Campus:</b>	Springfield, Toowoomba	-
<b>Fees:</b>	Commonwealth supported place Domestic full fee paying place International full fee paying place	Commonwealth supported place Domestic full fee paying place International full fee paying place
<b>Standard duration:</b>	3 years full-time, 6 years part-time	
<b>Program articulation:</b>	From: <a href="#">Associate Degree of Engineering</a> To: <a href="#">Bachelor of Engineering (Honours)</a> ; <a href="#">Master of Professional Engineering</a> ; <a href="#">Master of Engineering Practice</a>	

### Notes:

In 2023 the program follows the Semester calendar. The [Academic Calendar and Important Dates](#) webpage will allow you to view and download a copy of the important dates for the Semester calendar.

### Footnotes

- \* The only majors available on-campus at UniSQ Springfield are Civil Engineering, Infrastructure Management Engineering, Electrical and Electronic Engineering and Mechanical Engineering.
- # The semester 3 intake is only available via external study.
- @ External students must be able to attend mandatory and highly recommended residential schools at a UniSQ campus.

## Contact us

Future Australian and New Zealand students	Future International students	Current students
<a href="#">Ask a question</a> Freecall (within Australia): 1800 269 500 Phone (from outside Australia): +61 7 4631 5315 Email: <a href="mailto:study@usq.edu.au">study@usq.edu.au</a>	<a href="#">Ask a question</a> Phone: +61 7 4631 5543 Email: <a href="mailto:international@usq.edu.au">international@usq.edu.au</a>	<a href="#">Ask a question</a> Freecall (within Australia): 1800 007 252 Phone (from outside Australia): +61 7 4631 2285 Email <a href="mailto:usq.support@usq.edu.au">usq.support@usq.edu.au</a>

## Professional accreditation

A graduate of this program is eligible to apply for graduate membership of Engineers Australia as an Engineering Technologist. After further professional development, a graduate member with a Bachelor of Engineering Science may apply for chartered status as an Engineering Technologist and, when granted, may use the post-nominal TMIEAust CEngT.

## Program aims

The Bachelor of Engineering Science is a tertiary level program designed to educate engineering technologists in the theory, methods and practices necessary to function as an engineering technologist. It is also designed so that students are eligible for graduate membership of Engineers Australia (as an Engineering Technologist) and other appropriate professional bodies. To this end, the program is designed to provide an in-depth understanding of specialist bodies of knowledge of a branch of engineering practice, appropriate to those

functioning at engineering technologist level with the personal, professional, and technical knowledge, skills and understanding necessary to practice within an appropriate social, cultural, industrial and environmental context.

## Program objectives

Upon successful completion of the degree, students should be able to:

- Display systematic knowledge that underpins relevant engineering theory and practice in the technology domain.
- Recognise the social purpose of engineering technology and explain the relationship between human-made products and systems, and community needs.
- Apply well-researched, innovative, industry systems approaches to solve a range of well-defined engineering problems, and to address issues of sustainable practice in diverse environmental, technical and social contexts.
- Apply relevant management skills and design processes within the domain of engineering technologists to enable the delivery of engineering projects within given constraints.
- Make appropriate judgements by critically evaluating evidence, identifying and analysing ethical issues and applying cultural competencies, including those relevant to indigenous peoples
- Communicate effectively in English and interpret information for diverse audiences using oral, written and technology-based approaches; and apply effective competencies as a leader, team member and individual within the domain of engineering technologists.
- Engage in lifelong learning through reflection, and be accountable for their personal and professional actions by managing and monitoring personal performance.

## Australian Qualifications Framework

The Australian Qualifications Framework (AQF) is a single national, comprehensive system of qualifications offered by higher education institutions (including universities), vocational education and training institutions and secondary schools. Each AQF qualification has a set of descriptors which define the type and complexity of knowledge, skills and application of knowledge and skills that a graduate who has been awarded that qualification has attained, and the typical volume of learning associated with that qualification type.

This program is at AQF Qualification Level 07. Graduates at this level will have broad and coherent knowledge and skills for professional work and/or further learning.

The full set of levels criteria and qualification type descriptors can be found by visiting [www.aqf.edu.au](http://www.aqf.edu.au).

## Program Information Set

View UniSQ's admission criteria, student profiles and a summary of all offers made under [Course Admission Information Set](#) via the QTAC website.

## Admission requirements

To be eligible for admission, applicants must satisfy the following requirements:

- Have achieved a minimum Australian Tertiary Admission Rank (ATAR) of **65.6**, or equivalent qualification.<sup>^</sup>
- Subject Pre-requisites: English (Units 3 & 4, C) and Mathematical Methods (Units 3 & 4, C) or equivalent.
- English Language Proficiency requirements for Category 2.

All students are required to satisfy the applicable [English language requirements](#).

If students do not meet the English language requirements they may apply to study a University-approved [English language program](#). On successful completion of the English language program, students may be admitted to an award program.

^ These are determined by the University for specific programs each Semester. The 2023 ATAR and tertiary entrance ranks are based on agreed QTAC schedules which assess formal study at Year 12 or [equivalent level](#), tertiary, preparatory, professional or vocational qualifications or work experience, as detailed in the QTAC Assessment of Qualifications Manual and QTAC Assessor Guidelines.

Adjustment factors may help you get into the program of your choice by increasing your entrance rank. The additional points don't apply to all applicants or all programs. Please read the information about UniSQ's [Adjustment Factors](#) carefully to find out what you may be eligible for.

## Program fees

### Commonwealth supported place

A Commonwealth supported place is where the Australian Government makes a contribution towards the cost of a students' higher education and students pay a [student contribution amount](#), which varies depending on the courses undertaken. Students are able to calculate the fees for a particular course via the [Course Fee Schedules](#).

Commonwealth Supported students may be eligible to defer their fees through a Government loan called [HECS-HELP](#).

### Domestic full fee paying place

Domestic full fee paying places are funded entirely through the full fees paid by the student. Full fees vary depending on the courses that are taken. Students are able to calculate the fees for a particular course via the [Course Fee Schedule](#)

Domestic full fee paying students may be eligible to defer their fees through a Government loan called [FEE-HELP](#) provided they meet the residency and citizenship requirements.

Australian citizens, Permanent Humanitarian Visa holders, Permanent Resident visa holders and New Zealand citizens who will be resident outside Australia for the duration of their program pay full tuition fees and are not eligible for [FEE-Help](#).

### International full fee paying place

International students pay full fees. Full fees vary depending on the courses that are taken and whether they are studied on-campus, external or online. Students are able to calculate the fees for a particular course via the [Course Fee Schedules](#).

## Program structure

The Bachelor of Engineering Science is a 24-unit program consisting of Academic Courses and Practice Courses. Students undertake a major of study, including approved courses which students are able to select. Mechanical engineering students may choose to study a minor of four units in another area of study instead of four approved courses.

Academic courses are normally one-unit courses and involve approximately 155 hours of student work per unit.

Practice courses are zero unit courses and each involves approximately 50 hours of student work.

## Required time limits

Students have a maximum of 8 years to complete this program.

## Core courses

The courses that comprise the core studies program are shown in the following table:

Courses	Semester(s) Offered			
	Toowoomba	Springfield	External	Online
<b>Academic Courses</b>				

<a href="#">ENG1002 Introduction to Engineering and Built Environment Applications</a>	1,2	1,2		1,2
<a href="#">ENG1003 Problem Solving in Engineering and the Built Environment<sup>\$</sup></a>	1	1		1,2
<a href="#">ENG1100 Introduction to Engineering Design</a>	1,2	1,2		1,2
<a href="#">ENG2002 Technology, Sustainability and Society</a>	1,2	1,2		1,2,3
<a href="#">ENG3003 Engineering Management<sup>*</sup></a>	1,3	1		1,3
<a href="#">ENG3111 Technology Design Project</a>	1,2			1,2
<a href="#">ENM1600 Engineering Mathematics</a>	1,2	1,2		1,2
<b>Practice Courses</b>				
<a href="#">ENG1901 Engineering Practice 1</a>	1,2	1	2,3	
<a href="#">ENG3909 Work Experience - Technologist</a>				1,3

#### Footnotes

<sup>\$</sup> Unavailable online S2 2023

<sup>\*</sup> The Semester 3 offering of this course is offered in odd numbered years only.

## Major studies

The Bachelor of Engineering Science consists of a core component and a series of major studies. All students must complete the core courses and one of the major studies. The major study provides students with knowledge and skills in a specific discipline. The major study areas in the UniSQ Bachelor of Engineering Science are listed below.

Major	On-Campus Toowoomba	On-Campus Springfield	External
Agricultural Engineering	Yes	No	Yes
Civil Engineering	Yes	Yes	Yes
Electrical and Electronic Engineering	Yes	Yes	Yes
Environmental Engineering	Yes	No	Yes
Infrastructure Management Engineering	Yes	Yes	Yes
Mechanical Engineering	Yes	Yes	Yes

## Agricultural Engineering major courses

Courses	Semester(s) Offered			
	Toowoomba	Springfield	External	Online
<b>Academic Courses</b>				
<a href="#">AGR2301 Agricultural Science</a>	2			2
<a href="#">AGR2302 Agricultural Machinery</a>	1			1
<a href="#">AGR3303 Agricultural Materials and Post-Harvest Technologies</a>	1			1
<a href="#">AGR3304 Soil Science</a>	1			1
<a href="#">AGR3305 Precision and Smart Technologies in Agriculture</a>	2			2

CIV1501 Engineering Statics	2	2		2,3
CIV2403 Geology and Geomechanics	2	2		2
ENV2103 Hydraulics I	1	1		1
ENV3105 Hydrology	2	2		2
ENV4106 Irrigation Science	2			2
MEC1201 Engineering Materials	1,2	1,2		1,2,3
MEC2402 Stress Analysis	1	1		1
SVY1500 Spatial Science for Engineers	2	2		2
Approved Courses (x 4)				
<b>Practice Courses</b>				
AGR2902 Field Practice			3	
AGR3903 Soil and Water Engineering Practice 2			2	
CIV2901 Geology and Geomechanics Practice	2	2	2,3	
ENV2902 Hydraulics Practice	2	2	1,2,3	

## Civil Engineering major courses

Courses	Semester(s) Offered			
	Toowoomba	Springfield	External	Online
<b>Academic Courses</b>				
CIV1501 Engineering Statics	2	2		2,3
CIV2403 Geology and Geomechanics	2	2		2
CIV2502 Structural and Building Technology	2	2	2	
CIV2503 Structural Design I	2	2		2
CIV2605 Construction Engineering	1	1		1
CIV2701 Road Design and Location	1	1		1
CIV2702 Municipal Services	2	2		2
CMG2001 Job Organisation	2	2		2
ENV2103 Hydraulics I	1	1		1
ENV3105 Hydrology	2	2		2
MEC1201 Engineering Materials	1,2	1,2		1,2,3
MEC2402 Stress Analysis	1	1		1
SVY1500 Spatial Science for Engineers	2	2		2
Approved Courses (x 4)				
<b>Practice Courses</b>				
CIV2901 Geology and Geomechanics Practice	2	2	2,3	
CIV3906 Civil Materials Practice	1	1	3	
CIV3907 Civil Systems Practice			3	
ENV2902 Hydraulics Practice	2	2	1,2,3	

## Electrical and Electronic Engineering major courses

Courses	Semester(s) Offered			
	Toowoomba	Springfield	External	Online
<b>Academic Courses</b>				
<a href="#">ELE1301 Computer Engineering</a>	1	1		1
<a href="#">ELE1502 Electronic Circuits</a>	1	1		1
<a href="#">ELE1801 Electrical Technology<sup>\$</sup></a>	2	2		2,3
<a href="#">ELE2101 Control and Instrumentation</a>	2	2		2
<a href="#">ELE2303 Embedded Systems Design</a>	1	1		1
<a href="#">ELE2501 Electronic Workshop and Production</a>	2	2		2
<a href="#">ELE2503 Electronic Systems</a>	2	2		2
<a href="#">ELE2601 Telecommunications Principles</a>	1	1		1
<a href="#">ELE2702 Electrical Measurement and Analysis</a>	1	1		1
<a href="#">ELE3506 Electronic Measurement</a>	2	2		2
<a href="#">ELE3803 Electrical Plant</a>	1	1		1
<a href="#">ELE3805 Power Electronics Principles and Applications</a>	2	2		2
<a href="#">MEC1201 Engineering Materials</a>	1,2	1,2		1,2,3
Approved Courses (x4)				
<b>Practice Courses</b>				
<a href="#">ELE1911 Electrical and Electronic Practice A<sup>~\$</sup></a>	2	2	3	
<a href="#">ELE2912 Electrical and Electronic Practice B<sup>\$</sup></a>	1	1	3	
<a href="#">ELE2913 Electrical and Electronic Practice C</a>				2
<a href="#">ELE3914 Electrical and Electronic Practice D</a>	1	1	3	

### Footnotes

- <sup>\$</sup> Unavailable online in S3 2023  
<sup>~</sup> Unavailable in On-Campus mode in S2 2023  
<sup>§</sup> Unavailable in External mode in S3 2023

## Environmental Engineering major courses

Courses	Semester(s) Offered			
	Toowoomba	Springfield	External	Online
<b>Academic Courses</b>				
<a href="#">AGR3304 Soil Science</a>	1			1
<a href="#">CIV1501 Engineering Statics</a>	2	2		2,3
<a href="#">CIV2403 Geology and Geomechanics</a>	2	2		2
<a href="#">ENV2103 Hydraulics I</a>	1	1		1
<a href="#">ENV2105 Applied Chemistry and Microbiology</a>	1			1
<a href="#">ENV2201 Land Studies</a>	1	1		1
<a href="#">ENV3103 Environmental Pollution</a>	2			2

ENV3105 Hydrology	2	2		2
ENV4106 Irrigation Science	2			2
ENV4203 Public Health Engineering	2	2		2
ENV4204 Environmental Technology	1			1
MEC1201 Engineering Materials	1,2	1,2		1,2,3
SVY1500 Spatial Science for Engineers	2	2		2
Approved Courses (x 4)				
<b>Practice Courses</b>				
AGR2902 Field Practice			3	
AGR3903 Soil and Water Engineering Practice 2			2	
CIV2901 Geology and Geomechanics Practice	2	2	2,3	
ENV2902 Hydraulics Practice	2	2	1,2,3	
ENV3904 Environmental Engineering Practice			3	

### Infrastructure Management Engineering major courses

Courses	Semester(s) Offered			
	Toowoomba	Springfield	External	Online
<b>Academic Courses</b>				
ACC1201 Data Insights and Financial Performance <sup>£</sup>	1,2	1,2		1,2
CIV1501 Engineering Statics	2	2		2,3
CIV2403 Geology and Geomechanics	2	2		2
CIV2502 Structural and Building Technology	2	2	2	
CIV2503 Structural Design I	2	2		2
CIV2605 Construction Engineering	1	1		1
CIV3603 Construction Methods				2
CMG2001 Job Organisation	2	2		2
ENV2103 Hydraulics I	1	1		1
LAW1501 Business Law and Ethics	1,2	1,2		1,2
MEC1201 Engineering Materials	1,2	1,2		1,2,3
MGT1101 Human Capabilities for Business <sup>£</sup>	1	1		1,2,3
MGT1001 Cultivating Talent	1	1		1
MGT2001 Risk Mitigation, Work Health and Safety	1	1		1
SVY1500 Spatial Science for Engineers	2	2		2
Approved Courses (x 2)				
<b>Practice Courses</b>				
CIV2901 Geology and Geomechanics Practice	2	2	2,3	
CIV3906 Civil Materials Practice	1	1	3	

#### Footnotes

£ In Semester 3, 2023 this course will be delivered as a Transition (9 week) semester, commencing on 13 November 2023 and concluding on 12 January 2024



## Mechanical Engineering major courses

Courses	Semester(s) Offered			
	Toowoomba	Springfield	External	Online
<b>Academic Courses</b>				
<a href="#">CIV1501 Engineering Statics</a>	2	2		2,3
<a href="#">ELE1801 Electrical Technology</a> <sup>\$</sup>	2	2		2,3
<a href="#">MEC1201 Engineering Materials</a>	1,2	1,2		1,2,3
<a href="#">MEC2106 Introduction to Thermofluids</a>	2	2		2
<a href="#">MEC2202 Manufacturing Processes</a>	1	1		1
<a href="#">MEC2301 Design of Machine Elements</a>	2	2		2
<a href="#">MEC2304 Solid Modelling</a>	2	2		2
<a href="#">MEC2402 Stress Analysis</a>	1	1		1
<a href="#">MEC2405 Machine Dynamics</a>	1	1		1
<a href="#">MEC3107 Thermofluids</a>	1	1		1
<a href="#">MEC3203 Materials Technology</a>	1	1		1
<a href="#">MEC3204 Production Engineering</a>	2	2		2
Approved Courses (x 5)				
<b>Practice Courses</b>				
<a href="#">MEC2901 Mechanical Practice 1</a>	1	1	3	
<a href="#">MEC2902 Mechanical Practice 2</a>	1	1	1	
<a href="#">MEC3903 Mechanical Practice 3</a>	2	2	3	
<a href="#">MEC3904 Mechanical Practice 4</a>	2	2	2	

### Footnotes

\$ Unavailable online in S3 2023

## Practical experience

To be eligible to graduate from the Bachelor of Engineering Science, students must obtain an aggregate of at least 45 days of suitable work experience during their program. This experience may be in an engineering office or laboratory where the student would be working principally with professional engineers and engineering associates. It may, however, be preferable for students to spend some time in field or factory activities to gain insight into industrial practice and to see what is involved in converting designs into finished products. Students are required to enrol in [ENG3909 Work Experience - Technologist](#) in the latter part of their program and keep a record of appropriate experience as specified in the Course Specification. The work experience is to be endorsed by an appropriate person in the organisation providing the experience and submitted to the examiner. The student must meet all costs associated with the acquisition of work experience to satisfy this requirement. The record of work experience must be made available for perusal by the Faculty of Health, Engineering and Sciences upon request. The acceptability or otherwise of employment experience, and the period of that type of experience that may be credited towards the 45 days, will be determined by the Examiner of [ENG3909 Work Experience - Technologist](#).

Credit or exemptions for [ENG3909 Work Experience - Technologist](#) will not normally be considered.

## IT requirements

For information technology requirements, please refer to the [minimum computing standards](#).



## Residential schools

The attendance requirement of residential schools within this degree is indicated by the following letters: R = Recommended; HR = Highly Recommended; M = Mandatory. To find out more about [residential schools](#), visit the [Residential School Schedule](#) to view specific dates for your degree, or visit the [Policy and Procedure Library](#).

Students are required to undertake practical and professional activities relevant to their program through enrolment in a series of **Practice courses** in the program. Practice courses are **zero** unit courses that may be undertaken in either on-campus or external mode and the final grades available are Pass (P)/Fail (F) only. They are a compulsory part of the program and do not attract a student contribution charge for Australian residents or a tuition fee for international students. The recommended enrolment schedule for Practice courses is shown in the Recommended Enrolment Pattern for the program in this Handbook.

External students must attend a number of residential schools during their program to obtain experience in practical and professional activities appropriate to the program. The residential schools are included in Practice courses which are conducted in Semester 3 or during the recess periods. The dates for each residential school Practice course are shown in the [Residential School schedule](#) in this Handbook and external students should ensure they are able to attend the residential school prior to enrolling in a Practice course. Personal protective equipment is compulsory in many engineering, construction and spatial science laboratories, student should confirm the requirements before attending residential schools for Practice courses.

Student who enrol in on-campus mode for Practice courses normally undertake a series of weekly activities and/or attend a compulsory residential school.

### Agricultural Engineering

- [ENG1901 Engineering Practice 1](#)
- [CIV2901 Geology and Geomechanics Practice](#)
- [ENV2902 Hydraulics Practice](#)
- [AGR2902 Field Practice](#)
- [AGR3903 Soil and Water Engineering Practice 2](#)

### Civil Engineering

- [ENG1901 Engineering Practice 1](#)
- [CIV2901 Geology and Geomechanics Practice](#)
- [ENV2902 Hydraulics Practice](#)
- [CIV3906 Civil Materials Practice](#)
- [CIV3907 Civil Systems Practice](#)

### Electrical and Electronic Engineering

- [ENG1901 Engineering Practice 1](#)
- [ELE1911 Electrical and Electronic Practice A](#)
- [ELE2912 Electrical and Electronic Practice B](#)
- [ELE3914 Electrical and Electronic Practice D](#)
- [CHE1110 Chemistry 1 \(Elective\)](#)

### Environmental Engineering

- [ENG1901 Engineering Practice 1](#)
- [CIV2901 Geology and Geomechanics Practice](#)
- [ENV2902 Hydraulics Practice](#)
- [AGR2902 Field Practice](#)
- [ENV3904 Environmental Engineering Practice](#)
- [AGR3903 Soil and Water Engineering Practice 2](#)

### Infrastructure Management Engineering

- [ENG1901 Engineering Practice 1](#)
- [CIV2901 Geology and Geomechanics Practice](#)
- [CIV3906 Civil Materials Practice](#)

## Mechanical Engineering

- [ENG1901 Engineering Practice 1](#)
- [MEC2901 Mechanical Practice 1](#)
- [MEC2902 Mechanical Practice 2](#)
- [MEC3903 Mechanical Practice 3](#)
- [MEC3904 Mechanical Practice 4](#)

## Articulation

Students who complete a Bachelor of Engineering Science program, or equivalent, may articulate to the [Bachelor of Engineering \(Honours\)](#). The amount of credit granted depends upon the field of study and approved courses completed in the Bachelor of Engineering Science program and the field of study selected in the Bachelor of Engineering (Honours) and is maximised for students undertaking the pathway to Bachelor of Engineering (Honours).

Students who complete a Bachelor of Engineering Science program in a cognate major may articulate to the [MEPR Master of Engineering Practice](#) when eligible. To be eligible students must either:

- gain 5 years relevant industry experience after receiving their BENS degree, or
- on entry to the BENS program have achieved Engineers Australia Associate Status (or equivalent) and have at least 5 years of relevant industrial experience in a cognate field. In this case the student may be approved to complete the [ENG3300 Industry Experience Evaluation Portfolio](#) course to complete their BENS graduate Technologist portfolio. (refer to Pathways to the Master of Engineering Practice below for more details)

## Engineering Pathways

### *Pathway to the Bachelor of Engineering (Honours)*

A Pathway has been developed for students who intend to study the [Bachelor of Engineering \(Honours\)](#) once they have completed the Bachelor of Engineering Science program. Pathway to the [Bachelor of Engineering \(Honours\)](#) maximises the advanced standing (exemptions) students will receive in the [Bachelor of Engineering \(Honours\)](#) program. A Pathway to the [Bachelor of Engineering \(Honours\)](#) has been developed for each of the following Bachelor of Engineering Science majors into the equivalent [Bachelor of Engineering \(Honours\)](#) major:

- Agricultural Engineering
- Civil Engineering
- Electrical and Electronic Engineering
- Environmental Engineering
- Mechanical Engineering

In addition, students enrolled in the Electrical and Electronic Engineering major may articulate into the following [Bachelor of Engineering \(Honours\)](#) majors:

- Computer Systems Engineering
- Power Engineering

The pathway to the [Bachelor of Engineering \(Honours\)](#) has been specially developed for students who study part-time. Full-time students may seek approval to follow the Pathway to the [Bachelor of Engineering \(Honours\)](#), but it is not timetabled for on-campus students.

Students must have the approval of the Faculty of Health, Engineering and Sciences to undertake the Pathway to the [Bachelor of Engineering \(Honours\)](#). Students are strongly advised to consider and apply for approval

for this Pathway as soon as possible in order to maximise the credit they will receive in the [Bachelor of Engineering \(Honours\)](#). This should be done prior to the commencement of the second year of studies if possible or after successful completion of at least eight (8) academic courses including [ENM1600 Engineering Mathematics](#).

The Faculty will take into consideration a student's GPA before granting approval.

Once approval is granted, the Faculty will advise students of the courses they should study when granting approval for them to follow the Pathway to the [Bachelor of Engineering \(Honours\)](#).

The following tables list some of the changes to the courses in each major which should be observed to undertake a Pathway into the [Bachelor of Engineering \(Honours\)](#). Pathway students should seek advice from the Faculty of Health, Engineering and Sciences before selecting their approved courses.

### Agricultural Engineering (BENH)

Approved Courses (choose the following)	Semester(s) Offered			
	Toowoomba	Springfield	External	Online
<a href="#">ENM2600 Advanced Engineering Mathematics</a>	1	1		1
<a href="#">ENG3104 Engineering Simulations and Computations</a>	2	2		2

Students should contact the Faculty of Health, Engineering and Sciences regarding the selection of their remaining Approved courses.

### Civil Engineering (BENH)

Courses to NOT be studied	Substitute course
<a href="#">CIV2702 Municipal Services</a>	<a href="#">CIV3703 Transport Engineering</a>
1 Approved Course	<a href="#">ENV4203 Public Health Engineering</a>

Approved Courses (choose the following)	Semester(s) Offered			
	Toowoomba	Springfield	External	Online
<a href="#">ENM2600 Advanced Engineering Mathematics</a>	1	1		1
<a href="#">ENG3104 Engineering Simulations and Computations</a>	2	2		2

Students should contact the Faculty of Health, Engineering and Sciences regarding the selection of their remaining Approved courses.

### Computer Systems Engineering (BENH)

Students wishing to articulate to this major should enrol in the Bachelor of Engineering Science (Electrical and Electronic Engineering).

Course to NOT be studied	Substitute course
<a href="#">ELE2101 Control and Instrumentation</a>	<a href="#">ELE2103 Linear Systems and Control</a>

Approved Courses (choose the following)	Semester(s) Offered			
	Toowoomba	Springfield	External	Online
<a href="#">CSC1401 Foundation Programming<sup>£</sup></a>	1,2	1,2		1,2,3
<a href="#">ENM2600 Advanced Engineering Mathematics</a>	1	1		1
<a href="#">ENG3104 Engineering Simulations and Computations</a>	2	2		2

#### Footnotes

£ In Semester 3, 2023 this course will be delivered as a Transition (9 week) semester, commencing on 13 November 2023 and concluding on 12 January 2024

Students should contact the Faculty of Health, Engineering and Sciences regarding the selection of their remaining Approved courses.

#### Electrical and Electronic Engineering (BENH)

Course to NOT be studied	Substitute course
<a href="#">ELE2101 Control and Instrumentation</a>	<a href="#">ELE2103 Linear Systems and Control</a>
<a href="#">ELE2503 Electronic Systems</a>	<a href="#">ELE2504 Electronic Design and Analysis</a>

Approved Courses (choose the following)	Semester(s) Offered			
	Toowoomba	Springfield	External	Online
<a href="#">ENM2600 Advanced Engineering Mathematics</a>	1	1		1
<a href="#">ENG3104 Engineering Simulations and Computations</a>	2	2		2

Students should contact the Faculty of Health, Engineering and Sciences regarding the selection of their remaining Approved courses.

#### Environmental Engineering (BENH)

Approved Courses (choose the following)	Semester(s) Offered			
	Toowoomba	Springfield	External	Online
<a href="#">ENM2600 Advanced Engineering Mathematics</a>	1	1		1

<a href="#">ENG3104 Engineering Simulations and Computations</a>	2	2		2
--	---	---	--	---

Students should contact the Faculty of Health, Engineering and Sciences regarding the selection of their remaining Approved courses.

### Mechanical Engineering (BENH)

Course to NOT be studied	Substitute course
<a href="#">MEC2405 Machine Dynamics</a>	<a href="#">MEC2401 Dynamics I</a>

Approved Courses (choose the following)	Semester(s) Offered			
	Toowoomba	Springfield	External	Online
<a href="#">ENM2600 Advanced Engineering Mathematics</a>	1	1		1
<a href="#">ENG3104 Engineering Simulations and Computations</a>	2	2		2

Students should contact the Faculty of Health, Engineering and Sciences regarding the selection of their remaining Approved courses.

### Power Engineering (BENH)

Students wishing to articulate to this major should enrol in the Bachelor of Engineering Science (Electrical and Electronic Engineering).

Courses to NOT be studied	Substitute course
<a href="#">ELE2101 Control and Instrumentation</a>	<a href="#">ELE2103 Linear Systems and Control</a>
<a href="#">ELE2503 Electronic Systems</a>	<a href="#">ELE2504 Electronic Design and Analysis</a>

Approved Courses (choose the following)	Semester(s) Offered			
	Toowoomba	Springfield	External	Online
<a href="#">ENM2600 Advanced Engineering Mathematics</a>	1	1		1
<a href="#">ENG3104 Engineering Simulations and Computations</a>	2	2		2

### Pathways to the Master of Engineering Practice

One Pathway to the [MEPR Master of Engineering Practice](#) program has been developed for graduates of the BENS program who gain five years of relevant industrial experience after receiving their BENS degree. This industrial experience should be in the BENS major and/or the major they wish to undertake in the program. Students who wish to follow this pathway into a different major in the MEPR from the major they studied in the BENS are not guaranteed articulation into the MEPR. All students should consult their relevant Major Convenor for advice before enrolling in their courses.

An alternative engineering Practice Pathway has been developed for students who intend to study the MEPR immediately after completing the Bachelor of Engineering Science program. The BENS engineering practice

pathway is designed to enable experienced engineering Associates to draw on their industrial experience to demonstrate their achievement of the required generic and technical capabilities to Engineers Australia Stage 2 Experienced Technologist Competency attributes. BENS graduates who have completed this engineering practice pathway may be considered for entry into the MEPR program after receiving formal Engineers Australia Technologist accreditation using their Bachelor of Engineering Science (BENS) practice pathway e-Portfolio.

The engineering practice pathway is an option for students who hold an [ADNG Associate Degree of Engineering](#) or close equivalent and have five years of relevant industry experience at the time they enter the Bachelor of Engineering Science program. The pathway requires students to complete the approved course [ENG3300 Industry Experience Evaluation Portfolio](#). Students who have the appropriate industrial experience, and are eligible for 10 or more exemptions upon entry into the Bachelor of Engineering Science (BENS) program may undertake this pathway. The ENG3300 Industry Experience Evaluation Portfolio will enable students to assess their existing workplace integrated learning skills, attributes and capabilities, and complete a technologist workplace e-portfolio to demonstrate their level of competency achievements.

Prospective Engineering Practice Pathway students should visit the Engineers Australia web site to gain an understanding of the processes which will be followed. In particular, they should view the Engineering Technologist Stage Two Competencies and the guidelines for achieving Chartered Technologist status.

## Exit points

Students who, for whatever reason, are unable to complete the Bachelor of Engineering Science and who satisfy all of the requirements of either the [Associate Degree of Engineering](#) or the [Diploma of Engineering Studies](#) may be permitted to exit with that award.

## Credit

Exemptions/credit will be assessed based on the [UniSQ Credit and Exemption Procedure](#).

## Work Experience

Work and industrial experience that has not been formally assessed, does not normally qualify for course credit in the Bachelor of Engineering Science program. The [MEPR Master of Engineering Practice](#) and the BENS/MEPR Engineering Practice Pathway has been established with the capacity of recognising and formally assessing industrial and work integrated learning (WIL) experience. Existing work experience may be used to satisfy the practical/work experience requirements when completing the [ENG3909 Work Experience - Technologist](#) practice course.

## Other information

The Faculty of Health, Engineering and Sciences may permit a student to enrol in an approved course other than those specified for the accredited program. Students who wish to enrol in approved courses other than those listed, must obtain written approval from their Major Convenor prior to enrolling in the course.

To satisfy the requirements of the program students must complete all Academic and Practice courses in the following recommended enrolment patterns. Students following a non-standard enrolment pattern should consult the [course specification](#) to ascertain if a course is offered in another term.

## Agricultural Engineering major full-time recommended enrolment pattern

Students who wish to complete a Pathway to another degree in Agricultural Engineering should seek advice from the Faculty of Health, Engineering and Sciences before enrolling in their courses.

Major study: Agricultural Engineering (Major Study Code: 16244)									
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements	
	On-campus (ONC)		External (EXT)		Online (ONL)				
	Year	Sem	Year	Sem	Year	Sem			
Academic Courses Year 1									
ENG1002 Introduction to Engineering and Built Environment Applications	1	1				1,2			
ENM1600 Engineering Mathematics	1	1				1,2		Enrolment is not permitted in ENM1600 if MAT1102 or MAT1502 has been previously completed	
ENG1003 Problem Solving in Engineering and the Built Environment <sup>\$</sup>	1	1				1,2			
MEC1201 Engineering Materials	1	1				1,2,3			
ENG1100 Introduction to Engineering Design	1	2				1,2			
CIV1501 Engineering Statics	1	2				2,3		Pre-requisite: ENM1600 or (ENM1500 and CIV1500) or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR	
ENG2002 Technology, Sustainability and Society	1	2				1,2,3			
SVY1500 Spatial Science for Engineers	1	2				2			
Practice Courses Year 1									
ENG1901 Engineering Practice 1	1	1		2,3			M		
Academic Courses Year 2									
AGR2302 Agricultural Machinery	2	1				1			
ENV2103 Hydraulics I	2	1				1		Pre-requisite: CIV1500 or CIV1501 or Students must be enrolled in the following Program: GCEN or GEPR	
MEC2402 Stress Analysis	2	1				1		Pre-requisite: CIV1501 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR	
Approved Course (Select from the approved course list) <sup>#</sup>	2	1				1			
Approved Course (Select from the approved course list) <sup>#</sup>	2	2				2			
CIV2403 Geology and Geomechanics	2	2				2		Pre-requisite: CIV1501 or CIV1500 or Students must be enrolled in one of the following Programs: MENS or GCEN or GEPR	
AGR2301 Agricultural Science	2	2				2			
ENV3105 Hydrology	2	2				2			
Practice Courses Year 2									
CIV2901 Geology and Geomechanics Practice	2	2		2,3			M	Pre-requisite or Co-requisite: ENG1901 and CIV2403	



Major study: Agricultural Engineering (Major Study Code: 16244)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
ENV2902 Hydraulics Practice	2	2		1,2,3			M	Pre-requisite or Co-requisite: <a href="#">ENV2103</a> or ENV1101
AGR2902 Field Practice ^				3			M	
Academic Courses Year 3								
ENG3003 Engineering Management †	3	1				1,3		
AGR3304 Soil Science	3	1				1		
AGR3303 Agricultural Materials and Post-Harvest Technologies	3	1				1		
Approved Course (Select from the approved course list) #	3	1				1		
AGR3305 Precision and Smart Technologies in Agriculture	3	2				2		
ENV4106 Irrigation Science	3	2				2		Pre-requisite: <a href="#">AGR3304</a> or Students must be enrolled in one of the following Program s: GCEN or GCSC or GDSI or METC or MEPR or GCNS or GDNS or MENS or MSCN.
Approved Course (Select from the approved course list) #	3	2				2		
ENG3111 Technology Design Project	3	2				1,2		Pre-requisite: (ENG2102 or <a href="#">ENG1003</a> or ENG1101) and Undergraduate students must have completed 14 courses in their program.
Practice Courses Year 3								
AGR3903 Soil and Water Engineering Practice 2				2			M	
ENG3909 Work Experience - Technologist						1,3		
Approved Courses: Select any BENH (Agricultural Engineering) Core or Major course or any of the following:								
ELE1301 Computer Engineering		1				1		
ELE2103 Linear Systems and Control		2				2		
ENV2201 Land Studies		1				1		
MEC2202 Manufacturing Processes		1				1		Pre-requisite: <a href="#">MEC1201</a> or Students must be enrolled in one of the following Program s: MEPR or GCEN
MEC3303 Mechanical and Mechatronic System Design		2				2		Pre-requisite: <a href="#">MEC2301</a> or Students must be enrolled in one of the following Program s: GCEN or METC or GCNS or GDNS or MEPR or MENS
MEC3203 Materials Technology		1				1		Pre-requisite: <a href="#">MEC1201</a> or Students must be enrolled in one of the following Program s: GCEN or METC or GCNS or GDNS or MEPR or MENS

#### Footnotes

\$ Unavailable online S2 2023

# This is a Pathway course. Please refer to Engineering pathways under [Articulation](#).

^ The residential school for this course may involve overnight field trips for which each student will be responsible for their own accommodation costs.

† The semester 3 offering of this course is offered in odd numbered years only.

## Agricultural Engineering major part-time recommended enrolment pattern

Students who wish to complete a Pathway to another degree in Agricultural Engineering should seek advice from the Faculty of Health, Engineering and Sciences before enrolling in their courses.

Major study: Agricultural Engineering (Major Study Code: 16244)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
Year 1								
ENG1002 Introduction to Engineering and Built Environment Applications		1,2				1,2		
ENM1600 Engineering Mathematics		1,2				1,2		Enrolment is not permitted in ENM1600 if MAT1102 or MAT1502 has been previously completed
ENG1100 Introduction to Engineering Design		1,2				1,2		
CIV1501 Engineering Statics		2				2,3		Pre-requisite: ENM1600 or (ENM1500 and CIV1500) or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR
Year 2								
ENG1003 Problem Solving in Engineering and the Built Environment <sup>\$</sup>		1				1,2		
MEC1201 Engineering Materials		1,2				1,2,3		
ENG2002 Technology, Sustainability and Society		1,2				1,2,3		
SVY1500 Spatial Science for Engineers		2				2		
Year 2 Practice Courses								
ENG1901 Engineering Practice 1		1,2		2,3			M	
Year 3								
AGR2302 Agricultural Machinery		1				1		
ENV2103 Hydraulics I		1				1		Pre-requisite: CIV1500 or CIV1501 or Students must be enrolled in the following Program: GCEN or GEPR
Approved Course (Select from the approved course list) <sup>#</sup>								
CIV2403 Geology and Geomechanics		2				2		Pre-requisite: CIV1501 or CIV1500 or Students must be enrolled in one of the following Programs: MENS or GCEN or GEPR
Year 3 Practice Courses								
CIV2901 Geology and Geomechanics Practice		2		2,3			M	Pre-requisite or Co-requisite: ENG1901 and CIV2403
ENV2902 Hydraulics Practice		2		1,2,3			M	Pre-requisite or Co-requisite: ENV2103 or ENV1101
Year 4								
MEC2402 Stress Analysis		1				1		Pre-requisite: CIV1501 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR

Major study: Agricultural Engineering (Major Study Code: 16244)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
								or GCNS or GDNS or MENS or GEPR
Approved Course (Select from the approved course list) <sup>#</sup>								
<a href="#">AGR2301 Agricultural Science</a>		2				2		
<a href="#">ENV3105 Hydrology</a>		2				2		
<b>Year 4 Practice Courses</b>								
<a href="#">AGR2902 Field Practice</a> <sup>^</sup>				3			M	
<b>Year 5</b>								
<a href="#">ENG3003 Engineering Management</a> <sup>†</sup>		1				1,3		
<a href="#">AGR3304 Soil Science</a>		1				1		
<a href="#">AGR3305 Precision and Smart Technologies in Agriculture</a>		2				2		
<a href="#">ENV4106 Irrigation Science</a>		2				2		Pre-requisite: <a href="#">AGR3304</a> or Students must be enrolled in one of the following Program s: GCEN or GCSC or GDSI or METC or MEPR or GCNS or GDNS or MENS or MSCN.
<b>Year 6</b>								
<a href="#">AGR3303 Agricultural Materials and Post-Harvest Technologies</a>		1				1		
Approved Course (Select from the approved course list) <sup>#</sup>								
Approved Course (Select from the approved course list) <sup>#</sup>								
<a href="#">ENG3111 Technology Design Project</a>		1,2				1,2		Pre-requisite: (ENG2102 or <a href="#">ENG1003</a> or ENG1101) and Undergraduate students must have completed 14 courses in their program.
<b>Year 6 Practice Courses</b>								
<a href="#">AGR3903 Soil and Water Engineering Practice 2</a>				2			M	
<a href="#">ENG3909 Work Experience - Technologist</a>						1,3		
<b>Approved Courses: Select any BENH (Agricultural Engineering) Core or Major course or any of the following:</b>								
<a href="#">ELE1301 Computer Engineering</a>		1				1		
<a href="#">ELE2103 Linear Systems and Control</a>		2				2		
<a href="#">ENV2201 Land Studies</a>		1				1		
<a href="#">MEC2202 Manufacturing Processes</a>		1				1		Pre-requisite: <a href="#">MEC1201</a> or Students must be enrolled in one of the following Program s: MEPR or GCEN
<a href="#">MEC3303 Mechanical and Mechatronic System Design</a>		2				2		Pre-requisite: <a href="#">MEC2301</a> or Students must be enrolled in one of the following Program s: GCEN or METC or GCNS or GDNS or MEPR or MENS
<a href="#">MEC3203 Materials Technology</a>		1				1		Pre-requisite: <a href="#">MEC1201</a> or Students must be enrolled in one of the following Program

Major study: Agricultural Engineering (Major Study Code: 16244)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
								s: GCEN or METC or GCNS or GDNS or MEPR or MENS

#### Footnotes

- \$ Unavailable online S2 2023  
 # This is a Pathway course. Please refer to Engineering pathways under [Articulation](#).  
 ^ The residential school for this course may involve overnight field trips for which each student will be responsible for their own accommodation costs.  
 † The semester 3 offering of this course is offered in odd numbered years only.

## Civil Engineering major full-time recommended enrolment pattern (Toowoomba and Springfield campus)

Students who wish to complete a Pathway to another degree in Civil Engineering should seek advice from the Faculty of Health, Engineering and Sciences before enrolling in their courses.

Major study: Civil Engineering (Major Study Code: 12044)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
Academic Courses Year 1								
ENG1002 Introduction to Engineering and Built Environment Applications	1	1				1		
ENM1600 Engineering Mathematics	1	1				1,2		Enrolment is not permitted in ENM1600 if MAT1102 or MAT1502 has been previously completed
ENG1003 Problem Solving in Engineering and the Built Environment <sup>\$</sup>	1	1				1,2		
MEC1201 Engineering Materials	1	1				1,2,3		
ENG1100 Introduction to Engineering Design	1	2				1,2		
CIV1501 Engineering Statics	1	2				2,3		Pre-requisite: ENM1600 or (ENM1500 and CIV1500) or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR
ENG2002 Technology, Sustainability and Society	1	2				1,2,3		
SVY1500 Spatial Science for Engineers	1	2				2		
Practice Courses Year 1								
ENG1901 Engineering Practice 1	1	1		2,3			M	
Academic Courses Year 2								
ENV2103 Hydraulics I	2	1				1		Pre-requisite: CIV1500 or CIV1501 or Students must be enrolled in the following Program: GCEN or GEPR
Approved Course (Select from the approved course list) <sup>#</sup>	2	1				1		
CIV2605 Construction Engineering	2	1				1		
CIV2701 Road Design and Location	2	1				1		Pre-requisite: ENM1500 or ENM1600 or Students must be enrolled in one of the following Programs: GCST or GDST or GCEN or GEPR

Major study: Civil Engineering (Major Study Code: 12044)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
<a href="#">CIV2403 Geology and Geomechanics</a>	2	2				2		Pre-requisite: <a href="#">CIV1501</a> or <a href="#">CIV1500</a> or Students must be enrolled in one of the following Programs: MENS or GCEN or GEPR
Approved Course (Select from the approved course list) <sup>#</sup>	2	2				2		
<a href="#">CIV2502 Structural and Building Technology</a>	2	2		2				
<a href="#">CIV2702 Municipal Services</a> <sup>#</sup>	2	2				2		Pre-requisite: <a href="#">ENV2103</a> or ENV1101
Practice Courses Year 2								
<a href="#">CIV3906 Civil Materials Practice</a>	2	1		3			M	Pre-requisite: <a href="#">MEC1201</a> and <a href="#">ENG1901</a> or Students must be enrolled in one of the following programs: ADCN or BCON or BCNH
<a href="#">CIV2901 Geology and Geomechanics Practice</a>	2	2		2,3			M	Pre-requisite or Co-requisite: <a href="#">ENG1901</a> and <a href="#">CIV2403</a>
<a href="#">ENV2902 Hydraulics Practice</a>	2	2		1,2,3			M	Pre-requisite or Co-requisite: <a href="#">ENV2103</a> or ENV1101
Academic Courses Year 3								
<a href="#">ENG3003 Engineering Management</a> <sup>†</sup>	3	1				1,3		
<a href="#">MEC2402 Stress Analysis</a>	3	1				1		Pre-requisite: <a href="#">CIV1501</a> or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR
Approved Course (Select from the approved course list) <sup>#</sup>	3	1				1		
Approved Course (Select from the approved course list) <sup>#</sup>	3	1				1		
<a href="#">CIV2503 Structural Design I</a>	3	2				2		Pre-requisite: ( <a href="#">ENG1100</a> and <a href="#">MEC2402</a> ) or ( <a href="#">ENG1100</a> and <a href="#">CIV1501</a> for students enrolled in one of the following: BETC Infrastructure Management major or BENS Infrastructure Management Engineering major) or Students must be enrolled in: GCEN or GEPR
<a href="#">CMG2001 Job Organisation</a>	3	2				2		
<a href="#">ENV3105 Hydrology</a>	3	2				2		
<a href="#">ENG3111 Technology Design Project</a>	3	2				1,2		Pre-requisite: ( <a href="#">ENG2102</a> or <a href="#">ENG1003</a> or <a href="#">ENG1101</a> ) and Undergraduate students must have completed 14 courses in their program.
Practice Courses Year 3								
<a href="#">CIV3907 Civil Systems Practice</a>				3			M	Pre-requisite: <a href="#">CIV2503</a> or Students must be enrolled in one of the following Programs: MENS or MEPR
<a href="#">ENG3909 Work Experience - Technologist</a>						1,3		

Major study: Civil Engineering (Major Study Code: 12044)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
Approved Courses: Select any BENH (Civil Engineering) Core or Major course or any of the following:								
CIV3603 Construction Methods						2		
ENG4004 Engineering Project and Operations Management <sup>‡</sup>		3				2,3		
ENV2201 Land Studies		1				1		
ENV4204 Environmental Technology <sup>@</sup>		1				1		Pre-requisite: ENV2105 or Students must be enrolled in one of the following Programs: PDEV or GCEN or METC or MEPR or GCNS or GDNS or MENS
GIS1402 Geographic Information Systems <sup>£</sup>		1				1,3		
REN1201 Environmental Studies		1				1		Enrolment is not permitted in REN1201 if REN8101 has been previously completed.
SVY1104 Survey Computations A		2				2		Pre-requisite: SVY1102 or SVY1500 or Students must be enrolled in one of the following Programs: GCST or GDST or MSPT
URP3201 Sustainable Urban Design and Development		2				2		
ENG3300 Industry Experience Evaluation Portfolio						1,2		Pre-requisite: Students must be enrolled in the BENS engineering practice sub-plan pathway.

#### Footnotes

- \$ Unavailable online S2 2023  
 # This is a Pathway course. Please refer to Engineering pathways under [Articulation](#).  
 † The semester 3 offering of this course is offered in odd numbered years only.  
 ‡ The semester 3 offering of this course is offered in even numbered years only.  
 @ Students who wish to enrol in ENV4204 Environmental Technology as an Approved course, should consult their Major Convenor.  
 £ In Semester 3, 2023 this course will be delivered as a Transition (9 week) semester, commencing on 13 November 2023 and concluding on 12 January 2024

## Civil Engineering major part-time recommended enrolment pattern (Toowoomba and Springfield campus)

Students who wish to complete a Pathway to another degree in Civil Engineering should seek advice from the Faculty of Health, Engineering and Sciences before enrolling in their courses.

Major study: Civil Engineering (Major Study Code: 12044)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
Year 1								
ENG1002 Introduction to Engineering and Built Environment Applications		1,2				1,2		
ENM1600 Engineering Mathematics		1,2				1,2		Enrolment is not permitted in ENM1600 if MAT1102 or MAT1502 has been previously completed
ENG1100 Introduction to Engineering Design		1,2				1,2		

Major study: Civil Engineering (Major Study Code: 12044)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
CIV1501 Engineering Statics		2				2,3		Pre-requisite: ENM1600 or (ENM1500 and CIV1500) or Students must be enrolled in one of the following Program s: MEPR or GCEN or GEPR
Year 2								
ENG1003 Problem Solving in Engineering and the Built Environment <sup>\$</sup>		1				1,2		
MEC1201 Engineering Materials		1,2				1,2,3		
ENG2002 Technology, Sustainability and Society		1,2				1,2,3		
SVY1500 Spatial Science for Engineers		2				2		
Year 2 Practice Courses								
ENG1901 Engineering Practice 1		1,2		2,3			M	
Year 3								
ENV2103 Hydraulics I		1				1		Pre-requisite: CIV1500 or CIV1501 or Students must be enrolled in the following Pro gram: GCEN or GEPR
Approved Course (Select from the approved course list) <sup>#</sup>								
CIV2403 Geology and Geomechanics		2				2		Pre-requisite: CIV1501 or CIV1500 or Students must be enrolled in one of the follow ing Programs: MENS or G CEN or GEPR
Approved Course (Select from the approved course list) <sup>#</sup>								
Year 3 Practice Courses								
CIV2901 Geology and Geomechanics Practice		2		2,3			M	Pre-requisite or Co-requisite: ENG1901 and CIV2403
ENV2902 Hydraulics Practice		2		1,2,3			M	Pre-requisite or Co-requisite: ENV2103 or ENV1101
Year 4								
CIV2605 Construction Engineering		1				1		
CIV2701 Road Design and Location		1				1		Pre-requisite: ENM1500 or ENM1600 or Students must be enrolled in one of the fol lowing Programs: GCST or GDST or GCEN or GEPR
CIV2502 Structural and Building Technology		2		2				
CIV2702 Municipal Services <sup>#</sup>		2				2		Pre-requisite: ENV2103 or ENV1101
Year 4 Practice Courses								
CIV3906 Civil Materials Practice		1		3			M	Pre-requisite: MEC1201 and ENG1901 or Students must be enrolled in one of the fol lowing programs: ADCN or BCON or BCNH



Major study: Civil Engineering (Major Study Code: 12044)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
Year 5								
ENG3003 Engineering Management <sup>†</sup>		1				1,3		
MEC2402 Stress Analysis		1				1		Pre-requisite: CIV1501 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR
CIV2503 Structural Design I		2				2		Pre-requisite: (ENG1100 and MEC2402) or (ENG1100 and CIV1501 for students enrolled in one of the following: BETC Infrastructure Management major or BENS Infrastructure Management Engineering major) or Students must be enrolled in: GCEN or GEPR
CMG2001 Job Organisation		2				2		
Year 6								
Approved Course (Select from the approved course list) <sup>#</sup>								
Approved Course (Select from the approved course list) <sup>#</sup>								
ENV3105 Hydrology		2				2		
ENG3111 Technology Design Project		1,2				1,2		Pre-requisite: (ENG2102 or ENG1003 or ENG1101) and Undergraduate students must have completed 14 courses in their program.
Year 6 Practice Courses								
CIV3907 Civil Systems Practice				3			M	Pre-requisite: CIV2503 or Students must be enrolled in one of the following Programs: MENS or MEPR
ENG3909 Work Experience - Technologist						1,3		
Approved Courses: Select any BENH (Civil Engineering) Core or Major course or any of the following:								
CIV3603 Construction Methods						2		
ENG4004 Engineering Project and Operations Management <sup>‡</sup>		3				2,3		
ENV2201 Land Studies		1				1		
ENV4204 Environmental Technology <sup>@</sup>		1				1		Pre-requisite: ENV2105 or Students must be enrolled in one of the following Programs: PDEV or GCEN or METC or MEPR or GCNS or GDNS or MENS
GIS1402 Geographic Information Systems <sup>£</sup>		1				1,3		
REN1201 Environmental Studies		1				1		Enrolment is not permitted in REN1201 if REN8101 has been previously completed.
SVY1104 Survey Computations A		2				2		Pre-requisite: SVY1102 or SVY1500 or Students must

Major study: Civil Engineering (Major Study Code: 12044)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
								be enrolled in one of the following Programs: GCST or GDST or MSPT
<a href="#">URP3201 Sustainable Urban Design and Development</a>		2				2		
<a href="#">ENG3300 Industry Experience Evaluation Portfolio</a>						1,2		Pre-requisite: Students must be enrolled in the BENS engineering practice sub-plan pathway.

#### Footnotes

- \$ Unavailable online S2 2023  
 # This is a Pathway course. Please refer to Engineering pathways under [Articulation](#).  
 † The semester 3 offering of this course is offered in odd numbered years only.  
 ‡ The semester 3 offering of this course is offered in even numbered years only.  
 @ Students who wish to enrol in ENV4204 Environmental Technology as an Approved course, should consult their Major Convenor.  
 £ In Semester 3, 2023 this course will be delivered as a Transition (9 week) semester, commencing on 13 November 2023 and concluding on 12 January 2024

## Electrical and Electronic Engineering major full-time recommended enrolment pattern (Toowoomba and Springfield campus)

On entering the Bachelor of Engineering Science in Electrical and Electronic Engineering external students are required to purchase a kit of tools comprising an electronic soldering iron, wire strippers, long nose pliers, diagonal cutter, safety glasses and an electronic prototyping 'breadboard'. These will first be required for [ELE2501 Electronic Workshop and Production](#) and [ELE1502 Electronic Circuits](#), and further details will be provided on commencement of these courses. Additionally, all students enrolled in course [ELE2501 Electronic Workshop and Production](#) will be required to purchase an electronic kit costing approximately \$80. For [ELE2702 Electrical Measurement and Analysis](#), access to a digital multimeter and hook-up wire may be required, together with the purchase of some electronic components.

Students who wish to complete a Pathway to another degree in Electrical and Electronic Engineering, Computer Systems Engineering or Power Engineering should seek advice from the Faculty of Health, Engineering and Sciences before enrolling in their courses.

Major study: Electrical and Electronic Engineering (Major Study Code: 12047)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
Academic Courses Year 1								
ENG1003 Problem Solving in Engineering and the Built Environment <sup>\$</sup>	1	1				1,2		
ENM1600 Engineering Mathematics	1	1				1,2		Enrolment is not permitted in ENM1600 if MAT1102 or MAT1502 has been previously completed
ELE1301 Computer Engineering	1	1				1		
ELE1502 Electronic Circuits	1	1				1		
ENG1002 Introduction to Engineering and Built Environment Applications	1	2				1,2		
ENG1100 Introduction to Engineering Design	1	2				1,2		
MEC1201 Engineering Materials	1	2				1,2,3		
ELE1801 Electrical Technology <sup>&lt;</sup>	1	2				2,3		Pre-requisite: ENM1500 or ENM1600 or Students must be enrolled in one of the fol

Major study: Electrical and Electronic Engineering (Major Study Code: 12047)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
								lowing Programs: MEPR or GCEN or GEPR
Practice Courses Year 1								
ENG1901 Engineering Practice 1	1	1,2		2,3			M	
ELE1911 Electrical and Electronic Practice A <sup>~\$</sup>	1	2		3			M	
Academic Courses Year 2								
ENG2002 Technology, Sustainability and Society	2	1				1,2,3		
ELE2303 Embedded Systems Design	2	1				1		Pre-requisite: ELE1301
ELE2702 Electrical Measurement and Analysis	2	1				1		Pre-requisite: (ENM1500 or ENM1600) and ELE1801 or Students must be enrolled in the following Program: GCEN
ELE2601 Telecommunications Principles	2	1				1		Pre-requisite: (ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GCEN or METC or GEPR
ELE2101 Control and Instrumentation <sup>#</sup>	2	2				2		Pre-requisite: ENM1500 or ENM1600 or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR
ELE2501 Electronic Workshop and Production	2	2				2		Pre-requisite: (ELE1502 and ELE1301) or Students must be enrolled in the following Program: GCEN
Approved Course (Select from the Approved Course list) <sup>#</sup>	2	2				2		
ELE2503 Electronic Systems <sup>#</sup>	2	2				2		Pre-requisite: ELE1502 or Students must be enrolled in the following Program: GCEN or GEPR Students cannot be enrolled in ELE2503 and ELE2504 in the same semester Enrolment is not permitted in ELE2503 if ELE2504 has been previously completed
Practice Courses Year 2								
ELE2912 Electrical and Electronic Practice B <sup>\$</sup>	2	1		3			M	Pre-requisite: (ELE1301 and ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GDNS or MENS
ELE2913 Electrical and Electronic Practice C						2		Pre-requisite: (ELE1301 and ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GDNS or MENS
Academic Courses Year 3								
ELE3803 Electrical Plant	3	1				1		Pre-requisite: ELE1801 or Students must be enrolled in one of the following Program

Major study: Electrical and Electronic Engineering (Major Study Code: 12047)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
								s: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR
ENG3003 Engineering Management <sup>†</sup>	3	1				1,3		
Approved Course (Select from the Approved Course list) <sup>#</sup>	3	1				1		
Approved Course (Select from the Approved Course list) <sup>#</sup>	3	1				1		
ELE3805 Power Electronics Principles and Applications	3	2				2		Pre-requisite: (ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS
ELE3506 Electronic Measurement	3	2				2		Pre-requisite: (ELE1502 and (ELE2101 or ELE2103) and (ELE2503 or ELE2504)) or Students must be enrolled in one of the following Program s: GCEN or METC or MEPR or MENS
Approved Course (Select from the Approved Course list) <sup>#</sup>	3	2				2		
ENG3111 Technology Design Project	3	2				1,2		Pre-requisite: (ENG2102 or ENG1003 or ENG1101) and Undergraduate students must have completed 14 courses in their program.
Practice Courses Year 3								
ELE3914 Electrical and Electronic Practice D	3	1		3			M	Pre-requisite: (ELE1801 and ELE1301 and ELE1502) or Students must be enrolled in one of the following Program s: MENS or MEPR
ENG3909 Work Experience - Technologist						1,3		
Approved Courses: Select any BENH (Electrical and Electronic Engineering) Core or Major course or any of the following:								
ELE2704 Electricity Supply Systems						2		Pre-requisite: ELE1801 or S tudents must be enrolled in one of the following Program s: MEPR or GCEN or METC or GEPR
ELE4804 Power Systems Protection						1		Pre-requisite: ELE1801 or S tudents must be enrolled in one of the following Program s: GCEN or METC or MEPR or GCNS or GDNS or MENS
ELE4807 Power Systems Analysis		1				1		
ENG4004 Engineering Project and Operations Management <sup>‡</sup>		3				2,3		
CIV1501 Engineering Statics		2				2,3		Pre-requisite: ENM1600 or (ENM1500 and CIV1500) or Students must be enrolled in one of the following Program s: MEPR or GCEN or GEPR

Major study: Electrical and Electronic Engineering (Major Study Code: 12047)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
CSC1401 Foundation Programming <sup>£*</sup>		1,2				1,2,3		
CSC2402 Object-Oriented Programming in C++		1				1		Pre-requisite: <a href="#">CSC1401</a> or Students must be enrolled in one of the following Programs: GDTI or GCSC or GCEN or METC or MCOT or MCTE or MCOP or MPIT or MCTN
MEC1501 Introduction to Industrial Processes						2		Pre-requisite: <a href="#">CIV1500</a> or <a href="#">CIV1501</a>
MEC2106 Introduction to Thermofluids		2				2		Pre-requisite: <a href="#">CIV1500</a> or <a href="#">CIV1501</a> or Students must be enrolled in one of the following Programs: BENH or BEBC or BEHS or GCEN or MENS or GEPR
MEC2402 Stress Analysis		1				1		Pre-requisite: <a href="#">CIV1501</a> or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR
MEC2405 Machine Dynamics		1				1		Pre-requisite: <a href="#">CIV1501</a> or Students must be enrolled in the following Program: GCEN
MEC2501 Process Control Systems						2		Pre-requisite: <a href="#">ELE2103</a> or ( <a href="#">MEC1501</a> and <a href="#">ELE2101</a> as Co-requisite or Pre-requisite) or Students must be enrolled in the following Program: GEPR
CHE1110 Chemistry 1 <sup>^</sup>		1		1			HR	
ENG3300 Industry Experience Evaluation Portfolio						1,2		Pre-requisite: Students must be enrolled in the BENS engineering practice sub-plan pathway.

#### Footnotes

- \$ Unavailable online S2 2023  
 < Unavailable online in S3 2023  
 ~ Unavailable in On-Campus mode in S2 2023  
 § Unavailable in External mode in S3 2023  
 # This is a Pathway course. Please refer to Engineering pathways under [Articulation](#).  
 † The semester 3 offering of this course is offered in odd numbered years only.  
 ‡ The semester 3 offering of this course is offered in even numbered years only.  
 £ In Semester 3, 2023 this course will be delivered as a Transition (9 week) semester, commencing on 13 November 2023 and concluding on 12 January 2024  
 \* This is a Pathway course for students intending to complete the BENH (Computer Systems Engineering). Please refer to Engineering pathways under [Articulation](#)  
 ^ [CHE1110 Chemistry 1](#) has a highly recommended residential school component in External mode.

## Electrical and Electronic Engineering major part-time recommended enrolment pattern (Toowoomba and Springfield campus)

On entering the Bachelor of Engineering Science in Electrical and Electronic Engineering, external students are required to purchase a kit of tools comprising an electronic soldering iron, wire strippers, long nose pliers, diagonal cutter, safety glasses and an electronic prototyping 'breadboard'. These will first be required for [ELE2501 Electronic Workshop and Production](#) and [ELE1502 Electronic Circuits](#), and further details will be provided on commencement of these courses. Additionally, all students enrolled in course [ELE2501 Electronic](#)

[Workshop and Production](#) will be required to purchase an electronic kit costing approximately \$80. For [ELE2702 Electrical Measurement and Analysis](#), access to a digital multimeter and hook-up wire may be required, together with the purchase of some electronic components.

Students who wish to complete a Pathway to another degree in Electrical and Electronic Engineering, Computer Systems Engineering or Power Engineering should seek advice from the Faculty of Health, Engineering and Sciences before enrolling in their courses.

Major study: Electrical and Electronic Engineering (Major Study Code: 12047)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
Year 1								
ENG1003 Problem Solving in Engineering and the Built Environment <sup>§</sup>		1				1,2		
ENM1600 Engineering Mathematics		1,2				1,2		Enrolment is not permitted in ENM1600 if MAT1102 or MAT1502 has been previously completed
ENG1002 Introduction to Engineering and Built Environment Applications		1,2				1,2		
ENG1100 Introduction to Engineering Design		1,2				1,2		
Year 1 Practice Courses								
ENG1901 Engineering Practice 1		1,2		2,3			M	
Year 2								
ELE1301 Computer Engineering		1				1		
ELE1502 Electronic Circuits		1				1		
MEC1201 Engineering Materials		1,2				1,2,3		
ELE1801 Electrical Technology <sup>&lt;</sup>		2				2,3		Pre-requisite: ENM1500 or ENM1600 or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR
Year 2 Practice Courses								
ELE1911 Electrical and Electronic Practice A <sup>~§</sup>		2		3			M	
Year 3								
ENG2002 Technology, Sustainability and Society		1,2				1,2,3		
ELE2303 Embedded Systems Design		1				1		Pre-requisite: ELE1301
ELE2101 Control and Instrumentation <sup>#</sup>		2				2		Pre-requisite: ENM1500 or ENM1600 or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR
ELE2501 Electronic Workshop and Production		2				2		Pre-requisite: (ELE1502 and ELE1301) or Students must be enrolled in the following Program: GCEN
Year 3 Practice Courses								
ELE2912 Electrical and Electronic Practice B <sup>§</sup>		1		3			M	Pre-requisite: (ELE1301 and ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GDNS or MENS

Major study: Electrical and Electronic Engineering (Major Study Code: 12047)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
Year 4								
<a href="#">ELE2702 Electrical Measurement and Analysis</a>		1				1		Pre-requisite: ( <a href="#">ENM1500</a> or <a href="#">ENM1600</a> ) and <a href="#">ELE1801</a> or Students must be enrolled in the following Program: GCEN
<a href="#">ELE2601 Telecommunications Principles</a>		1				1		Pre-requisite: ( <a href="#">ELE1502</a> and <a href="#">ELE1801</a> ) or Students must be enrolled in one of the following Programs: GCEN or METC or GEPR
Approved Course (Select from the Approved Course list) <sup>#</sup>								
<a href="#">ELE2503 Electronic Systems</a> <sup>#</sup>		2				2		Pre-requisite: <a href="#">ELE1502</a> or Students must be enrolled in the following Program: GCEN or GEPR Students cannot be enrolled in <a href="#">ELE2503</a> and <a href="#">ELE2504</a> in the same semester Enrolment is not permitted in <a href="#">ELE2503</a> if <a href="#">ELE2504</a> has been previously completed
Year 4 Practice Courses								
<a href="#">ELE2913 Electrical and Electronic Practice C</a>						2		Pre-requisite: ( <a href="#">ELE1301</a> and <a href="#">ELE1502</a> and <a href="#">ELE1801</a> ) or Students must be enrolled in one of the following Programs: GDNS or MENS
Year 5								
<a href="#">ELE3803 Electrical Plant</a>		1				1		Pre-requisite: <a href="#">ELE1801</a> or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR
<a href="#">ENG3003 Engineering Management</a> <sup>†</sup>		1				1,3		
<a href="#">ELE3805 Power Electronics Principles and Applications</a>		2				2		Pre-requisite: ( <a href="#">ELE1502</a> and <a href="#">ELE1801</a> ) or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS
<a href="#">ELE3506 Electronic Measurement</a>		2				2		Pre-requisite: ( <a href="#">ELE1502</a> and ( <a href="#">ELE2101</a> or <a href="#">ELE2103</a> ) and ( <a href="#">ELE2503</a> or <a href="#">ELE2504</a> )) or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or MENS
Year 5 Practice Courses								
<a href="#">ELE3914 Electrical and Electronic Practice D</a>		1		3			M	Pre-requisite: ( <a href="#">ELE1801</a> and <a href="#">ELE1301</a> and <a href="#">ELE1502</a> ) or Students must be enrolled in



Major study: Electrical and Electronic Engineering (Major Study Code: 12047)									
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements	
	On-campus (ONC)		External (EXT)		Online (ONL)				
	Year	Sem	Year	Sem	Year	Sem			
								one of the following Program s: MENS or MEPR	
Year 6									
Approved Course (Select from the Approved Course list) <sup>#</sup>									
Approved Course (Select from the Approved Course list) <sup>#</sup>									
Approved Course (Select from the Approved Course list) <sup>#</sup>									
ENG3111 Technology Design Project		1,2				1,2		Pre-requisite: (ENG2102 or <a href="#">ENG1003</a> or ENG1101) and Undergraduate students must have completed 14 courses in their program.	
Year 6 Practice Courses									
ENG3909 Work Experience - Technologist						1,3			
Approved Courses: Select any BENH (Electrical and Electronic Engineering) Core or Major course or any of the following:									
ELE2704 Electricity Supply Systems						2		Pre-requisite: <a href="#">ELE1801</a> or S tudents must be enrolled in one of the following Program s: MEPR or GCEN or METC or GEPR	
ELE4804 Power Systems Protection						1		Pre-requisite: <a href="#">ELE1801</a> or S tudents must be enrolled in one of the following Program s: GCEN or METC or MEPR or GCNS or GDNS or MENS	
ELE4807 Power Systems Analysis		1				1			
ENG4004 Engineering Project and Operations Management <sup>‡</sup>		3				2,3			
CIV1501 Engineering Statics		2				2,3		Pre-requisite: <a href="#">ENM1600</a> or ( <a href="#">ENM1500</a> and <a href="#">CIV1500</a> ) or Students must be enrolled in one of the following Program s: MEPR or GCEN or GEPR	
CSC1401 Foundation Programming <sup>£*</sup>		1,2				1,2,3			
CSC2402 Object-Oriented Programming in C++		1				1		Pre-requisite: <a href="#">CSC1401</a> or Students must be enrolled in one of the following Program s: GDTI or GCSC or GCEN or METC or MCOT or MCTE or MCOP or MPIT or MCTN	
MEC1501 Introduction to Industrial Processes						2		Pre-requisite: <a href="#">CIV1500</a> or <a href="#">CIV1501</a>	
MEC2106 Introduction to Thermofluids		2				2		Pre-requisite: <a href="#">CIV1500</a> or <a href="#">CIV1501</a> or Students must be enrolled in one of the follow ing Programs: BENH or BE BC or BEHS or GCEN or MENS or GEPR	
MEC2402 Stress Analysis		1				1		Pre-requisite: <a href="#">CIV1501</a> or S tudents must be enrolled in one of the following Program	

Major study: Electrical and Electronic Engineering (Major Study Code: 12047)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
								s: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR
MEC2405 Machine Dynamics		1				1		Pre-requisite: CIV1501 or S students must be enrolled in the following Program: GCEN
MEC2501 Process Control Systems						2		Pre-requisite: ELE2103 or (MEC1501 and ELE2101 as Co-requisite or Pre-requisite) or Students must be enrolled in the following Program: GEPR
CHE1110 Chemistry 1 <sup>^</sup>		1		1			HR	
ENG3300 Industry Experience Evaluation Portfolio						1,2		Pre-requisite: Students must be enrolled in the BENS engineering practice sub-plan pathway.

#### Footnotes

- \$ Unavailable online S2 2023  
 < Unavailable online in S3 2023  
 ~ Unavailable in On-Campus mode in S2 2023  
 § Unavailable in External mode in S3 2023  
 # This is a Pathway course. Please refer to Engineering pathways under [Articulation](#).  
 † The semester 3 offering of this course is offered in odd numbered years only.  
 ‡ The semester 3 offering of this course is offered in even numbered years only.  
 £ In Semester 3, 2023 this course will be delivered as a Transition (9 week) semester, commencing on 13 November 2023 and concluding on 12 January 2024  
 \* This is a Pathway course for students intending to complete the BENH (Computer Systems Engineering). Please refer to Engineering pathways under [Articulation](#)  
 ^ [CHE1110 Chemistry 1](#) has a highly recommended residential school component in External mode.

## Environmental Engineering major full-time recommended enrolment pattern

Students who wish to complete a Pathway to another degree in Environmental Engineering should seek advice from the Faculty of Health, Engineering and Sciences before enrolling in their courses.

Major study: Environmental Engineering (Major Study Code: 12045)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
Academic Courses Year 1								
ENG1002 Introduction to Engineering and Built Environment Applications	1	1				1,2		
ENM1600 Engineering Mathematics	1	1				1,2		Enrolment is not permitted in ENM1600 if MAT1102 or MAT1502 has been previously completed
ENG1003 Problem Solving in Engineering and the Built Environment <sup>\$</sup>	1	1				1,2		
MEC1201 Engineering Materials	1	1				1,2,3		
ENG1100 Introduction to Engineering Design	1	2				1,2		
CIV1501 Engineering Statics	1	2				2,3		Pre-requisite: ENM1600 or (ENM1500 and CIV1500) or Students must be enrolled in

Major study: Environmental Engineering (Major Study Code: 12045)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
								one of the following Program s: MEPR or GCEN or GEPR
ENG2002 Technology, Sustainability and Society	1	2				1,2,3		
SVY1500 Spatial Science for Engineers	1	2				2		
Practice Courses Year 1								
ENG1901 Engineering Practice 1	1	1		2,3			M	
Academic Courses Year 2								
ENV2105 Applied Chemistry and Microbiology	2	1				1		
ENV2103 Hydraulics I	2	1				1		Pre-requisite: CIV1500 or CIV1501 or Students must be enrolled in the following Program: GCEN or GEPR
ENV2201 Land Studies	2	1				1		
Approved Course (Select from the Approved Course list) <sup>#</sup>	2	1				1		
Approved Course (Select from the Approved Course list) <sup>#</sup>	2	2				1,2,3		
CIV2403 Geology and Geomechanics	2	2				2		Pre-requisite: CIV1501 or CIV1500 or Students must be enrolled in one of the following Programs: MENS or GCEN or GEPR
ENV3105 Hydrology	2	2				2		
Approved Course (Select from the Approved Course list) <sup>#</sup>	2	2				2		
Practice Courses Year 2								
CIV2901 Geology and Geomechanics Practice	2	2		2,3			M	Pre-requisite or Co-requisite: ENG1901 and CIV2403
ENV2902 Hydraulics Practice	2	2		1,2,3			M	Pre-requisite or Co-requisite: ENV2103 or ENV1101
AGR2902 Field Practice <sup>^</sup>				3			M	
Academic Courses Year 3								
ENG3003 Engineering Management <sup>†</sup>	3	1				1,3		
ENV4204 Environmental Technology	3	1				1		Pre-requisite: ENV2105 or Students must be enrolled in one of the following Programs: PDEV or GCEN or METC or MEPR or GCNS or GDNS or MENS
AGR3304 Soil Science	3	1				1		
Approved Course (Select from the Approved Course list) <sup>#</sup>	3	1				1		
ENV4203 Public Health Engineering	3	2				2		Pre-requisite: ENV1101 or ENV2103 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS
ENV3103 Environmental Pollution	3	2				2		Pre-requisite: ENV2105 and ENV2103 or Students must be enrolled in one of the following Programs: GCEN or

Major study: Environmental Engineering (Major Study Code: 12045)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
								METC or MEPR or GCNS or GDNS or MENS or GEPR
ENV4106 Irrigation Science	3	2				2		Pre-requisite: <a href="#">AGR3304</a> or Students must be enrolled in one of the following Programs: GCEN or GCSC or GDSI or METC or MEPR or GCNS or GDNS or MENS or MSCN.
ENG3111 Technology Design Project	3	2				1,2		Pre-requisite: (ENG2102 or <a href="#">ENG1003</a> or ENG1101) and Undergraduate students must have completed 14 courses in their program.
Practice Courses Year 3								
ENV3904 Environmental Engineering Practice				3			M	Pre-requisite: <a href="#">ENV4203</a> or Students must be enrolled in one of the following Programs: GDNS or MENS or MEPR or GEPR
AGR3903 Soil and Water Engineering Practice 2				2			M	
ENG3909 Work Experience - Technologist						1,3		
Approved Courses: Select any BENH (Environmental Engineering) Core or Major course or any of the following:								
<a href="#">AGR2301 Agricultural Science</a>		2				2		
<a href="#">AGR3305 Precision and Smart Technologies in Agriculture</a>		2				2		
<a href="#">CIV3703 Transport Engineering</a>		2				2		
<a href="#">CLI2201 Climate Change and Variability</a>						2		
<a href="#">ENG4004 Engineering Project and Operations Management<sup>‡</sup></a>		3				2,3		
<a href="#">GIS1402 Geographic Information Systems<sup>£</sup></a>		1				1,3		
<a href="#">LAW2107 Environmental Law<sup>**</sup></a>						2		Pre-requisite: <a href="#">LAW1501</a> or <a href="#">LAW1101</a> or <a href="#">LAW1500</a> or <a href="#">ENG2002</a> or <a href="#">REN1201</a> or (Students enrolled in BEDU (Legal Studies) or BLAW or LLBP or BALW or BCLW or BZLW - Pre-requisite: <a href="#">LAW1111</a> )
<a href="#">REN1201 Environmental Studies</a>		1				1		Enrolment is not permitted in <a href="#">REN1201</a> if <a href="#">REN8101</a> has been previously completed.
<a href="#">URP3201 Sustainable Urban Design and Development</a>		2				2		
<a href="#">SVY3202 Photogrammetry and Remote Sensing</a>		1				1		
<a href="#">ENG3300 Industry Experience Evaluation Portfolio</a>						1,2		Pre-requisite: Students must be enrolled in the BENS engineering practice sub-plan pathway.

**Footnotes**

\$ Unavailable online S2 2023

# This is a Pathway course. Please refer to Engineering pathways under [Articulation](#).

^ The residential school for this course may involve overnight field trips for which each student will be responsible for their own accommodation costs.

† The semester 3 offering of this course is offered in odd numbered years only.

‡ The semester 3 offering of this course is offered in even numbered years only.

£ In Semester 3, 2023 this course will be delivered as a Transition (9 week) semester, commencing on 13 November 2023 and concluding on 12 January 2024

\*\* Course is offered in the interim trimester layer, please consult for interim trimester dates.

## Environmental Engineering major part-time recommended enrolment pattern

Students who wish to complete a Pathway to another degree in Environmental Engineering should seek advice from the Faculty of Health, Engineering and Sciences before enrolling in their courses.

Major study: Environmental Engineering (Major Study Code: 12045)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
Year 1								
ENG1002 Introduction to Engineering and Built Environment Applications		1,2				1,2		
ENM1600 Engineering Mathematics		1,2				1,2		Enrolment is not permitted in ENM1600 if MAT1102 or MAT1502 has been previously completed
ENG1100 Introduction to Engineering Design		1,2				1,2		
CIV1501 Engineering Statics		2				2,3		Pre-requisite: ENM1600 or (ENM1500 and CIV1500) or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR
Year 1 Practice Courses								
ENG1901 Engineering Practice 1		1,2		2,3			M	
Year 2								
ENG1003 Problem Solving in Engineering and the Built Environment <sup>\$</sup>		1				1,2		
MEC1201 Engineering Materials		1,2				1,2,3		
ENG2002 Technology, Sustainability and Society		1,2				1,2,3		
SVY1500 Spatial Science for Engineers		2				2		
Year 3								
ENV2105 Applied Chemistry and Microbiology		1				1		
ENV2103 Hydraulics I		1				1		Pre-requisite: CIV1500 or CIV1501 or Students must be enrolled in the following Program: GCEN or GEPR
Approved Course (Select from the Approved Course list) <sup>#</sup>								
CIV2403 Geology and Geomechanics		2				2		Pre-requisite: CIV1501 or CIV1500 or Students must be enrolled in one of the following Programs: MENS or GCEN or GEPR
Year 3 Practice Courses								
CIV2901 Geology and Geomechanics Practice		2		2,3			M	Pre-requisite or Co-requisite: ENG1901 and CIV2403
ENV2902 Hydraulics Practice		2		1,2,3			M	Pre-requisite or Co-requisite: ENV2103 or ENV1101
Year 4								
ENV2201 Land Studies		1				1		

Major study: Environmental Engineering (Major Study Code: 12045)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
Approved Course (Select from the Approved Course list) <sup>#</sup>								
<a href="#">ENV3105 Hydrology</a>		2				2		
Approved Course (Select from the Approved Course list) <sup>#</sup>								
<b>Year 4 Practice Courses</b>								
<a href="#">AGR2902 Field Practice</a> <sup>^</sup>				3			M	
<b>Year 5</b>								
<a href="#">ENG3003 Engineering Management</a> <sup>†</sup>		1				1,3		
<a href="#">ENV4204 Environmental Technology</a>		1				1		Pre-requisite: <a href="#">ENV2105</a> or Students must be enrolled in one of the following Programs: PDEV or GCEN or METC or MEPR or GCNS or GDNS or MENS
<a href="#">ENV4203 Public Health Engineering</a>		2				2		Pre-requisite: ENV1101 or <a href="#">ENV2103</a> or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS
<a href="#">ENV3103 Environmental Pollution</a>	3]	2				2		Pre-requisite: <a href="#">ENV2105</a> and <a href="#">ENV2103</a> or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR
<b>Year 5 Practice Courses</b>								
<a href="#">ENV3904 Environmental Engineering Practice</a>				3			M	Pre-requisite: <a href="#">ENV4203</a> or Students must be enrolled in one of the following Programs: GDNS or MENS or MEPR or GEPR
<b>Year 6</b>								
<a href="#">AGR3304 Soil Science</a>		1				1		
Approved Course (Select from the Approved Course list) <sup>#</sup>								
<a href="#">ENV4106 Irrigation Science</a>		2				2		Pre-requisite: <a href="#">AGR3304</a> or Students must be enrolled in one of the following Programs: GCEN or GCSC or GDSI or METC or MEPR or GCNS or GDNS or MENS or MSCN.
<a href="#">ENG3111 Technology Design Project</a>		1,2				1,2		Pre-requisite: (ENG2102 or <a href="#">ENG1003</a> or ENG1101) and Undergraduate students must have completed 14 courses in their program.
<b>Year 6 Practice Courses</b>								
<a href="#">AGR3903 Soil and Water Engineering Practice 2</a>				2			M	
<a href="#">ENG3909 Work Experience - Technologist</a>						1,3		

Major study: Environmental Engineering (Major Study Code: 12045)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
Approved Courses: Select any BENH (Environmental Engineering) Core or Major course or any of the following:								
AGR2301 Agricultural Science		2				2		
AGR3305 Precision and Smart Technologies in Agriculture		2				2		
CIV3703 Transport Engineering		2				2		
CLI2201 Climate Change and Variability						2		
ENG4004 Engineering Project and Operations Management <sup>†</sup>		3				2,3		
GIS1402 Geographic Information Systems <sup>£</sup>		1				1,3		
LAW2107 Environmental Law <sup>**</sup>						2		Pre-requisite: <a href="#">LAW1501</a> or <a href="#">LAW1101</a> or <a href="#">LAW1500</a> or <a href="#">ENG2002</a> or <a href="#">REN1201</a> or (Students enrolled in BEDU (Legal Studies) or BLAW or LLBP or BALW or BCLW or BZLW - Pre-requisite: <a href="#">LAW1111</a> )
REN1201 Environmental Studies		1				1		Enrolment is not permitted in <a href="#">REN1201</a> if <a href="#">REN8101</a> has been previously completed.
URP3201 Sustainable Urban Design and Development		2				2		
SVY3202 Photogrammetry and Remote Sensing		1				1		
ENG3300 Industry Experience Evaluation Portfolio						1,2		Pre-requisite: Students must be enrolled in the BENS engineering practice sub-plan pathway.

#### Footnotes

- \$ Unavailable online S2 2023
- # This is a Pathway course. Please refer to Engineering pathways under [Articulation](#).
- ^ The residential school for this course may involve overnight field trips for which each student will be responsible for their own accommodation costs.
- † The semester 3 offering of this course is offered in odd numbered years only.
- ‡ The semester 3 offering of this course is offered in even numbered years only.
- £ In Semester 3, 2023 this course will be delivered as a Transition (9 week) semester, commencing on 13 November 2023 and concluding on 12 January 2024
- \*\* Course is offered in the interim trimester layer, please consult [for interim trimester dates](#).

## Infrastructure Management Engineering major full-time recommended enrolment pattern (Toowoomba and Springfield campus)

Major study: Infrastructure Management Engineering (Major Study Code: 18502)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
Academic Courses Year 1								
ENG1002 Introduction to Engineering and Built Environment Applications	1	1					1,2	
ENM1600 Engineering Mathematics	1	1					1,2	Enrolment is not permitted in ENM1600 if MAT1102 or MAT1502 has been previously completed



Major study: Infrastructure Management Engineering (Major Study Code: 18502)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
ENG1003 Problem Solving in Engineering and the Built Environment <sup>\$</sup>	1	1				1,2		
MEC1201 Engineering Materials	1	1				1,2,3		
CIV1501 Engineering Statics	1	2				2,3		Pre-requisite: ENM1600 or (ENM1500 and CIV1500) or Students must be enrolled in one of the following Program s: MEPR or GCEN or GEPR
ENG1100 Introduction to Engineering Design	1	2				1,2		
Approved Course (Select from the Approved Course list)	1	2				2,3		
SVY1500 Spatial Science for Engineers	1	2				2		
Practice Courses Year 1								
ENG1901 Engineering Practice 1	1	1		2,3			M	
Academic Courses Year 2								
MGT1001 Cultivating Talent	2	1				1		
MGT1101 Human Capabilities for Business <sup>£</sup>	2	1				1,2,3		Enrolment is not permitted in MGT1101 if MGT1000 has been previously completed.
ENV2103 Hydraulics I	2	1				1		Pre-requisite: CIV1500 or CIV1501 or Students must be enrolled in the following Pro gram: GCEN or GEPR
CIV2605 Construction Engineering	2	1				1		
ENG2002 Technology, Sustainability and Society	2	2				1,2,3		
LAW1501 Business Law and Ethics	2	2				2		Enrolment is not permitted in LAW1501 if LAW1500 has been previously completed.
CIV2502 Structural and Building Technology	2	2		2				
CIV2403 Geology and Geomechanics	2	2				2		Pre-requisite: CIV1501 or CIV1500 or Students must be enrolled in one of the follow ing Programs: MENS or G CEN or GEPR
Practice Courses Year 2								
CIV2901 Geology and Geomechanics Practice	2	2		2,3			M	Pre-requisite or Co-requisite: ENG1901 and CIV2403
Academic Courses Year 3								
ENG3003 Engineering Management <sup>†</sup>	3	1				1,3		
ACC1201 Data Insights and Financial Performance <sup>£</sup>	3	1				1,2		Enrolment is not permitted in ACC1201 if ACC1101 has been previously completed.
MGT2001 Risk Mitigation, Work Health and Safety	3	1				1		
Approved Course (Select from the Approved Course list)	3	1				1		
CIV2503 Structural Design I	3	2				2		Pre-requisite: (ENG1100 and MEC2402) or (ENG1100 and CIV1501 for students enrolled in one of the following: BETC Infrastructure Management major or BENS Infrastructure Management Engineering

Major study: Infrastructure Management Engineering (Major Study Code: 18502)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
								major) or Students must be enrolled in: GCEN or GEPR
CMG2001 Job Organisation	3	2				2		
CIV3603 Construction Methods						2		
ENG3111 Technology Design Project	3	2				1,2		Pre-requisite: (ENG2102 or ENG1003 or ENG1101) and Undergraduate students must have completed 14 courses in their program.
Practice Courses Year 3								
CIV3906 Civil Materials Practice	3	1		3			M	Pre-requisite: MEC1201 and ENG1901 or Students must be enrolled in one of the following programs: ADCN or BCON or BCNH
ENG3909 Work Experience - Technologist						1,3		
Select approved courses from the following or other elective courses as approved by the Major Convenor								
Any approved Bachelor of Engineering (Honours) (Civil Engineering) course OR								
CIV4506 Concrete Structures		1				1		Pre-requisite: CIV2503 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS
ENV2201 Land Studies		1				1		
URP1001 Introduction to Urban and Regional Planning		1				1		
ENG4004 Engineering Project and Operations Management <sup>‡</sup>		3				2,3		

#### Footnotes

\$ Unavailable online S2 2023

£ In Semester 3, 2023 this course will be delivered as a Transition (9 week) semester, commencing on 13 November 2023 and concluding on 12 January 2024

† The semester 3 offering of this course is offered in odd numbered years only.

‡ The semester 3 offering of this course is offered in even numbered years only.

## Infrastructure Management Engineering major part-time recommended enrolment pattern (Toowoomba and Springfield campus)

Major study: Infrastructure Management Engineering (Major Study Code: 18502)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
Year 1								
ENG1002 Introduction to Engineering and Built Environment Applications		1,2				1,2		
ENM1600 Engineering Mathematics		1,2				1,2		Enrolment is not permitted in ENM1600 if MAT1102 or MAT1502 has been previously completed
CIV1501 Engineering Statics		2				2,3		Pre-requisite: ENM1600 or (ENM1500 and CIV1500) or

Major study: Infrastructure Management Engineering (Major Study Code: 18502)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
								Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR
ENG1100 Introduction to Engineering Design		1,2				1,2		
Year 2								
ENG1003 Problem Solving in Engineering and the Built Environment <sup>\$</sup>		1				1,2		
MEC1201 Engineering Materials		1,2				1,2,3		
Approved Course (Select from the Approved Course list)								
SVY1500 Spatial Science for Engineers		2				2		
Year 2 Practice Courses								
ENG1901 Engineering Practice 1		1,2		2,3			M	
Year 3								
MGT1001 Cultivating Talent		1				1		
MGT1101 Human Capabilities for Business <sup>£</sup>		1				1,2,3		Enrolment is not permitted in MGT1101 if MGT1000 has been previously completed.
ENG2002 Technology, Sustainability and Society		1,2				1,2,3		
LAW1501 Business Law and Ethics		1,2				1,2		Enrolment is not permitted in LAW1501 if LAW1500 has been previously completed.
Year 4								
ENV2103 Hydraulics I		1				1		Pre-requisite: CIV1500 or CIV1501 or Students must be enrolled in the following Program: GCEN or GEPR
CIV2605 Construction Engineering		1				1		
CIV2502 Structural and Building Technology		2		2				
CIV2403 Geology and Geomechanics		2				2		Pre-requisite: CIV1501 or CIV1500 or Students must be enrolled in one of the following Programs: MENS or GCEN or GEPR
Year 4 Practice Courses								
CIV2901 Geology and Geomechanics Practice		2		2,3			M	Pre-requisite or Co-requisite: ENG1901 and CIV2403
Year 5								
ENG3003 Engineering Management <sup>†</sup>		1				1,3		
ACC1201 Data Insights and Financial Performance <sup>£</sup>		1,2				1,2		Enrolment is not permitted in ACC1201 if ACC1101 has been previously completed.
CIV2503 Structural Design I		2				2		Pre-requisite: (ENG1100 and MEC2402) or (ENG1100 and CIV1501 for students enrolled in one of the following: BETC Infrastructure Management major or BENS Infrastructure Management Engineering

Major study: Infrastructure Management Engineering (Major Study Code: 18502)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
								major) or Students must be enrolled in: GCEN or GEPR
CMG2001 Job Organisation		2				2		
Year 5 Practice Courses								
CIV3906 Civil Materials Practice		1		3			M	Pre-requisite: MEC1201 and ENG1901 or Students must be enrolled in one of the following programs: ADCN or BCEN or BCNH
Year 6								
MGT2001 Risk Mitigation, Work Health and Safety		1				1		
Approved Course (Select from the Approved Course list)								
CIV3603 Construction Methods						2		
ENG3111 Technology Design Project		1,2				1,2		Pre-requisite: (ENG2102 or ENG1003 or ENG1101) and Undergraduate students must have completed 14 courses in their program.
Year 6 Practice Courses								
ENG3909 Work Experience - Technologist						1,3		
Select approved courses from the following or other elective courses as approved by the Major Convenor								
Any approved Bachelor of Engineering (Honours) (Civil Engineering) course OR								
CIV4506 Concrete Structures		1				1		Pre-requisite: CIV2503 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS
ENV2201 Land Studies		1				1		
URP1001 Introduction to Urban and Regional Planning		1				1		
ENG4004 Engineering Project and Operations Management <sup>‡</sup>		3				2,3		

#### Footnotes

\$ Unavailable online S2 2023

£ In Semester 3, 2023 this course will be delivered as a Transition (9 week) semester, commencing on 13 November 2023 and concluding on 12 January 2024

† The semester 3 offering of this course is offered in odd numbered years only.

‡ The semester 3 offering of this course is offered in even numbered years only.

## Mechanical Engineering major full-time recommended enrolment pattern (Toowoomba and Springfield campus)

Students enrolling in this major can choose to study a Minor in Control and Automation. Students who choose this minor must study the courses listed in the Minor instead of approved courses.

Students who wish to complete a Pathway to another degree in Mechanical Engineering should seek advice from the Faculty of Health, Engineering and Sciences before enrolling in their courses.

Major study: Mechanical Engineering (Major Study Code: 12048)									
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements	
	On-campus (ONC)		External (EXT)		Online (ONL)				
	Year	Sem	Year	Sem	Year	Sem			
Year 1									
Academic Courses									
ENG1002 Introduction to Engineering and Built Environment Applications	1	1				1,2			
ENG1003 Problem Solving in Engineering and the Built Environment <sup>\$</sup>	1	1				1,2			
ENM1600 Engineering Mathematics	1	1				1,2		Enrolment is not permitted in ENM1600 if MAT1102 or MAT1502 has been previously completed	
ENG1100 Introduction to Engineering Design	1	1				1,2			
Practice Courses									
ENG1901 Engineering Practice 1	1	1		2,3			M		
Academic Courses									
MEC1201 Engineering Materials	1	2				1,2,3			
ENG2002 Technology, Sustainability and Society	1	2				1,2,3			
CIV1501 Engineering Statics	1	2				2,3		Pre-requisite: ENM1600 or (ENM1500 and CIV1500) or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR	
MEC2304 Solid Modelling	1	2				2			
Year 2									
Academic Courses									
MEC2202 Manufacturing Processes	2	1				1		Pre-requisite: MEC1201 or Students must be enrolled in one of the following Programs: MEPR or GCEN	
Approved Course (Select from the Approved Course list) <sup>#</sup>	2	1				1			
MEC2402 Stress Analysis	2	1				1		Pre-requisite: CIV1501 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR	
MEC2405 Machine Dynamics <sup>#</sup>	2	1				1		Pre-requisite: CIV1501 or Students must be enrolled in the following Program: GCEN	
Practice Courses									
MEC2901 Mechanical Practice 1	2	1		3			M		
MEC2902 Mechanical Practice 2	2	1		1			M		
Academic Courses									
MEC2106 Introduction to Thermofluids	2	2				2		Pre-requisite: CIV1500 or CIV1501 or Students must be enrolled in one of the follow	

Major study: Mechanical Engineering (Major Study Code: 12048)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
								ing Programs: BENH or BE BC or BEHS or GCEN or MENS or GEPR
<a href="#">ELE1801 Electrical Technology</a> <sup>&lt;</sup>	2	2				2,3		Pre-requisite: <a href="#">ENM1500</a> or <a href="#">ENM1600</a> or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR
<a href="#">MEC2301 Design of Machine Elements</a>	2	2				2		Pre-requisite: ( <a href="#">MEC2402</a> and <a href="#">ENG1100</a> ) or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR
Approved Course (Select from the Approved Course list) <sup>#</sup>	2	2				2		
<b>Practice Courses</b>								
<a href="#">MEC3903 Mechanical Practice 3</a>	2	2		3			M	
<b>Year 3</b>								
<b>Academic Courses</b>								
<a href="#">MEC3107 Thermofluids</a>	3	1				1		Pre-requisite: ( <a href="#">MEC2106</a> and <a href="#">ENM1600</a> ) or Students must be enrolled in one of the following Programs: GCNS or GDNS Enrolment is not permitted in <a href="#">MEC3107</a> if <a href="#">MEC2101</a> or <a href="#">MEC3102</a> have been previously completed
<a href="#">ENG3003 Engineering Management</a> <sup>†</sup>	3	1				1,3		
<a href="#">MEC3203 Materials Technology</a>	3	1				1		Pre-requisite: <a href="#">MEC1201</a> or Students must be enrolled in one of the following Program s: GCEN or METC or GCNS or GDNS or MEPR or MENS
Approved Course (Select from the Approved Course list) <sup>#</sup>	3	1				1		
<b>Practice Courses</b>								
<a href="#">ENG3909 Work Experience - Technologist</a>						1,3		
<b>Academic Courses</b>								
Approved Course (Select from the Approved Course list) <sup>#</sup>	3	2				2		
Approved Course (Select from the Approved Course list) <sup>#</sup>	3	2				2		
<a href="#">ENG3111 Technology Design Project</a>	3	2				1,2		Pre-requisite: (ENG2102 or <a href="#">ENG1003</a> or ENG1101) and Undergraduate students must have completed 14 courses in their program.
<a href="#">MEC3204 Production Engineering</a>	3	2				2		
<b>Practice Courses</b>								
<a href="#">MEC3904 Mechanical Practice 4</a>	3	2		2			M	Pre-requisite: MEC3102 or <a href="#">MEC2106</a> or Students must be enrolled in one of the fol

Major study: Mechanical Engineering (Major Study Code: 12048)									
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements	
	On-campus (ONC)		External (EXT)		Online (ONL)				
	Year	Sem	Year	Sem	Year	Sem			
								lowing Programs: GDNS or MENS or MEPR	
Select a minor study or any BENH (Mechanical Engineering) Core or Major course or any of the following as Approved Courses:									
ENG4004 Engineering Project and Operations Management <sup>†</sup>		3				2,3			
AGR2302 Agricultural Machinery		1				1			
CIV2502 Structural and Building Technology		2		2					
ELE1502 Electronic Circuits		1				1			
ELE1301 Computer Engineering		1				1			
ELE3803 Electrical Plant		1				1		Pre-requisite: <a href="#">ELE1801</a> or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR	
CIV2503 Structural Design I		2				2		Pre-requisite: ( <a href="#">ENG1100</a> and <a href="#">MEC2402</a> ) or ( <a href="#">ENG1100</a> and <a href="#">CIV1501</a> for students enrolled in one of the following: BETC Infrastructure Management major or BENS Infrastructure Management Engineering major) or Students must be enrolled in: GCEN or GEPR	
ENV4204 Environmental Technology <sup>@</sup>		1				1		Pre-requisite: <a href="#">ENV2105</a> or Students must be enrolled in one of the following Programs: PDEV or GCEN or METC or MEPR or GCNS or GDNS or MENS	
ENG3300 Industry Experience Evaluation Portfolio						1,2		Pre-requisite: Students must be enrolled in the BENS engineering practice sub-plan pathway.	
Minor (Control and Automation)									
ELE1502 Electronic Circuits		1				1			
ELE1301 Computer Engineering		1				1			
ELE2303 Embedded Systems Design		1				1		Pre-requisite: <a href="#">ELE1301</a>	
ELE2101 Control and Instrumentation		2				2		Pre-requisite: <a href="#">ENM1500</a> or <a href="#">ENM1600</a> or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR	

#### Footnotes

- \$ Unavailable online S2 2023  
 # This is a Pathway course. Please refer to Engineering pathways under [Articulation](#).  
 < Unavailable online in S3 2023  
 † The semester 3 offering of this course is offered in odd numbered years only.  
 ‡ The semester 3 offering of this course is offered in even numbered years only.  
 @ Students who wish to enrol in ENV4204 Environmental Technology as an Approved course, should consult their Major Convenor.

## Mechanical Engineering major part-time recommended enrolment pattern (Toowoomba and Springfield campus)

Students enrolling in this major can choose to study a Minor in Control and Automation. Students who choose this minor must study the courses listed in the Minor instead of approved courses.

Students who wish to complete a Pathway to another degree in Mechanical Engineering should seek advice from the Faculty of Health, Engineering and Sciences before enrolling in their courses.

Major study: Mechanical Engineering (Major Study Code: 12048)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
Year 1								
Academic Courses								
ENG1002 Introduction to Engineering and Built Environment Applications		1,2				1,2		
ENG1003 Problem Solving in Engineering and the Built Environment <sup>\$</sup>		1				1,2		
MEC1201 Engineering Materials		1,2				1,2,3		
ENG2002 Technology, Sustainability and Society		1,2				1,2,3		
Year 2								
Academic Courses								
ENM1600 Engineering Mathematics		1,2				1,2		Enrolment is not permitted in ENM1600 if MAT1102 or MAT1502 has been previously completed
ENG1100 Introduction to Engineering Design		1,2				1,2		
CIV1501 Engineering Statics		2				2,3		Pre-requisite: ENM1600 or (ENM1500 and CIV1500) or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR
MEC2304 Solid Modelling		2				2		
Practice Courses								
ENG1901 Engineering Practice 1		1,2		2,3			M	
Year 3								
Academic Courses								
MEC2202 Manufacturing Processes		1				1		Pre-requisite: MEC1201 or Students must be enrolled in one of the following Programs: MEPR or GCEN
Approved Course (Select from the Approved Course list) <sup>#</sup>								
MEC2106 Introduction to Thermofluids		2				2		Pre-requisite: CIV1500 or CIV1501 or Students must be enrolled in one of the following Programs: BENH or BE BC or BEHS or GCEN or MENS or GEPR
ELE1801 Electrical Technology <sup>&lt;</sup>		2				2,3		Pre-requisite: ENM1500 or ENM1600 or Students must be enrolled in one of the fol



Major study: Mechanical Engineering (Major Study Code: 12048)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
								lowing Programs: MEPR or GCEN or GEPR
Practice Courses								
MEC2901 Mechanical Practice 1		1		3			M	
Year 4								
Academic Courses								
MEC2402 Stress Analysis		1				1		Pre-requisite: CIV1501 or S tudents must be enrolled in one of the following Program s: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR
MEC2405 Machine Dynamics <sup>#</sup>		1				1		Pre-requisite: CIV1501 or S tudents must be enrolled in the following Program: GCEN
MEC2301 Design of Machine Elements		2				2		Pre-requisite: (MEC2402 and ENG1100) or Students must be enrolled in one of the fol lowing Programs: MEPR or GCEN or GEPR
Approved Course (Select from the Approved Course list) <sup>#</sup>								
Practice Courses								
MEC2902 Mechanical Practice 2		1		1			M	
MEC3903 Mechanical Practice 3		2		3			M	
Year 5								
Academic Courses								
MEC3107 Thermofluids		1				1		Pre-requisite: (MEC2106 and ENM1600) or Students must be enrolled in one of the fol lowing Programs: GCNS or GDNS Enrolment is not per mitted in MEC3107 if MEC2101 or MEC3102 have been previously completed
ENG3003 Engineering Management <sup>†</sup>		1				1,3		
Approved Course (Select from the Approved Course list) <sup>#</sup>		2				2		
Approved Course (Select from the Approved Course list) <sup>#</sup>		2				2		
Year 6								
Academic Courses								
MEC3203 Materials Technology		1				1		Pre-requisite: MEC1201 or Students must be enrolled in one of the following Program s: GCEN or METC or GCNS or GDNS or MEPR or MENS
Approved Course (Select from the Approved Course list) <sup>#</sup>		1				1		

Major study: Mechanical Engineering (Major Study Code: 12048)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
Practice Courses								
ENG3909 Work Experience - Technologist						1,3		
Academic Courses								
ENG3111 Technology Design Project		1,2				1,2		Pre-requisite: (ENG2102 or ENG1003 or ENG1101) and Undergraduate students must have completed 14 courses in their program.
MEC3204 Production Engineering		2				2		
Practice Courses								
MEC3904 Mechanical Practice 4		2		2			M	Pre-requisite: MEC3102 or MEC2106 or Students must be enrolled in one of the following Programs: GDNS or MENS or MEPR
Select a minor study or any BENH (Mechanical Engineering) Core or Major course or any of the following as Approved Courses:								
ENG4004 Engineering Project and Operations Management <sup>‡</sup>		3				2,3		
AGR2302 Agricultural Machinery		1				1		
CIV2502 Structural and Building Technology		2		2				
ELE1502 Electronic Circuits		1				1		
ELE1301 Computer Engineering		1				1		
ELE3803 Electrical Plant		1				1		Pre-requisite: ELE1801 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR
CIV2503 Structural Design I		2				2		Pre-requisite: (ENG1100 and MEC2402) or (ENG1100 and CIV1501 for students enrolled in one of the following: BETC Infrastructure Management major or BENS Infrastructure Management Engineering major) or Students must be enrolled in: GCEN or GEPR
ENV4204 Environmental Technology <sup>@</sup>		1				1		Pre-requisite: ENV2105 or Students must be enrolled in one of the following Programs: PDEV or GCEN or METC or MEPR or GCNS or GDNS or MENS
ENG3300 Industry Experience Evaluation Portfolio						1,2		Pre-requisite: Students must be enrolled in the BENS engineering practice sub-plan pathway.
Minor (Control and Automation)								
ELE1502 Electronic Circuits		1				1		
ELE1301 Computer Engineering		1				1		

Major study: Mechanical Engineering (Major Study Code: 12048)								
Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
<a href="#">ELE2303 Embedded Systems Design</a>		1				1		Pre-requisite: <a href="#">ELE1301</a>
<a href="#">ELE2101 Control and Instrumentation</a>		2				2		Pre-requisite: <a href="#">ENM1500</a> or <a href="#">ENM1600</a> or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR

#### Footnotes

- \$ Unavailable online S2 2023  
 # This is a Pathway course. Please refer to Engineering pathways under [Articulation](#).  
 < Unavailable online in S3 2023  
 † The semester 3 offering of this course is offered in odd numbered years only.  
 ‡ The semester 3 offering of this course is offered in even numbered years only.  
 @ Students who wish to enrol in ENV4204 Environmental Technology as an Approved course, should consult their Major Convenor.