

Bachelor of Engineering Technology (BETC) - BEngTech

QTAC code (Australian and New Zealand applicants): Springfield campus: 927902; External: 907905;
Toowoomba campus: 907902

CRICOS code (International applicants): 013504B

This program is offered only to continuing students. No new admissions will be accepted. Students who are interested in this study area should consider the [BENS Bachelor of Engineering Science](#) which will be offered from S1 2014.

	On-campus	External
Semester intake:	No new admissions	No new admissions
Campus:	Springfield, Toowoomba	-
Fees:	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
Standard duration:	3 years full-time, 6 years part-time or external	
Program articulation:	From: Associate Degree of Engineering To: Bachelor of Engineering (Honours)	

Notes:

Please note that the Civil Engineering major and the Infrastructure Management major (formerly known as Building and Construction Management) are the only two majors that are available on-campus at Springfield.

Contact us

Current students
Ask a question Freecall (within Australia): 1800 007 252 Phone (from outside Australia): +61 7 4631 2285 Email usq.support@usq.edu.au

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 Technology may apply for chartered status as an Engineering Technologist and, when granted, may use the post-nominal TMIEAust CEngT.

Program aims

To equip graduates with the academic, personal, professional, and technical knowledge, skills and understanding required to commence practice as a Graduate Engineering Technologist in Australia or overseas within appropriate social, cultural, industrial and environmental contexts.

Program objectives

The objectives of the Bachelor of Engineering Technology program are:

- to enable students to acquire and demonstrate that they possess the specified graduate attributes and capabilities;
- to enable students to acquire an appropriate level of technical competence in one of the following fields: Agricultural Engineering, Infrastructure Management; Civil Engineering; Computer Systems Engineering;

Electrical and Electronic Engineering; Environmental Engineering; Mechanical Engineering or Power Engineering;

- to enable students from diverse and non-traditional backgrounds and locations to enrol in the program and to provide them with opportunities to acquire the skills necessary to complete the program in the normal time;
- to enable students to be empowered as learners through the provision of a wide range of teaching and learning styles and modes, in their program;
- to ensure that all students, regardless of the mode of study, have equality of opportunity in acquiring the specified graduate attributes and capabilities;
- to ensure that graduates are eligible for the Engineering Technologist Graduate grade of membership with Engineers Australia, and for membership of other appropriate professional bodies.

Program Information Set

View USQ'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 studied four semester units and achieved an exit assessment of 'Sound Achievement' or better in the Queensland Senior Secondary School subject: English and Mathematics B; or
- be able to demonstrate that they have achieved an equivalent standard in these subjects at another institution

and

- **Australian applicants:** have achieved a Queensland Overall Position (OP) band, or an equivalent Rank based on qualifications and previous work experience, at or above the specified cut-off level

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.

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 Finder](#).

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 Finder](#).

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, via distance education/online. Students are able to calculate the fees for a particular course via the [Course Fee Finder](#).

Program structure

The Bachelor of Engineering Technology program consists of core, major study and Elective components. Students enrolled in the Bachelor of Engineering Technology program may undertake a professional specialisation in one of seven major discipline areas:

- Agricultural Engineering
- Civil Engineering
- Computer Systems Engineering
- Electrical and Electronic Engineering
- Environmental Engineering
- Infrastructure Management
- Mechanical Engineering
- Power Engineering.

The Bachelor of Engineering Technology program comprises 24 academic and several practice units and involves three years of full-time study or six years of part-time study. The program is available in the on-campus mode and in the external mode of study. In order to be eligible for the award, students must complete the program within a maximum of five years of full-time study, or 10 years of part-time study, from the date of their initial enrolment.

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

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

The program structure for each of the major studies in the Bachelor of Engineering Technology is shown in the following pages.

Required time limits

Full-time students have a maximum of five years to complete this program. Part-time students have a maximum of 10 years to complete this program.

A pro-rata adjustment of the maximum time period will apply for those students who transfer from one mode of study to another. A pro-rata reduction in the maximum time period will apply to students who are admitted to a program with advanced standing.

Practical experience

To be eligible to graduate from the Bachelor of Engineering Technology, students must obtain an aggregate of at least 45 days of suitable practical 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 practical 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.

IT requirements

Access to an up-to-date computer is necessary. On-campus students can access appropriately equipped laboratories, but should consider acquisition of their own computer. External students should be able to access a computer with the following [minimum standards](#) as advised by the University. All students should have access to email and the Internet via a computer running the latest versions of Internet web browsers such as Internet Explorer or Firefox. The University has a wireless network for on-campus students' computers. In order to take advantage of this facility and further enhance their on-campus learning environment, students should consider purchasing a notebook/laptop computer with wireless connectivity. A notebook/laptop may be required for some courses.

Residential schools

The attendance requirement of residential schools within this degree is indicated by the following letters: V = Voluntary; O = Optional; C = Compulsory; R = Recommended; HR = Highly Recommended; M = Mandatory. 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](#).

External students are required to attend a number of [residential schools](#) during their program. These are associated with Practice Courses and are normally conducted at the end of Semester 3 (February), or during the mid-semester recess in Semester 2 (September/October).

The majority of the practical and professional experience requirements for the program are contained within the major recommended enrolment pattern. These are zero unit courses, which are a **compulsory part** of the program, however they do not attract a student contribution charge for Australian Residents or a tuition fee for international students.

Students enrolled in the external offer of a Practice Course **must attend** the residential school for that course. In some cases students enrolled in the on-campus mode may also be required to attend the residential school. Students should only enrol in a Practice Course when they are able to attend the residential school for that course. Practice Courses **may not** be taken earlier than shown except with the permission of the School responsible for the program. In some cases students may enrol in two Practice Courses in one term so they can complete the two residential schools in a two-week period. The actual dates for each residential school are shown in the [Residential School schedule](#) in this Handbook.

Safety boots are compulsory in engineering laboratories for several of the Practice courses and are strongly recommended for all other Practice courses.

Articulation

Students who have completed an Associate Diploma or Associate Degree program in Engineering at a Queensland university within the last five years may be able to claim up to a maximum of 16 units of advanced standing in the Bachelor of Engineering Technology program if studying in the same discipline area. Students who have completed an Advanced Diploma program in engineering at a TAFE college within the last five years are eligible to claim up to a maximum of 12 units of advanced standing if studying in the same discipline area provided appropriate modules from the national curriculum have been completed. Students holding an Associate Diploma in Engineering who seek and gain significant advanced standing in the Bachelor of Engineering Technology program in the same field of study are not entitled to use both awards after graduation.

Students who have completed a Bachelor of Engineering Technology program, or equivalent, within the last five years may normally be able to claim up to a maximum of 16 units of advanced standing in the [Bachelor of Engineering](#). It is possible for students to be granted maximum credit (24 units) towards the [Bachelor of Engineering](#) but this **ONLY** applies to students who have applied for, and been granted, approval to undertake the 'Pathway to [Bachelor of Engineering](#)'. The amount of credit granted depends upon the field of study and

Electives completed in the Bachelor of Engineering Technology program and the field of study selected in the Bachelor of Engineering.

Exit points

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

Other information

Engineering Pathways

A special Pathway has been developed for students who intend to study the Bachelor of Engineering (Honours) once they have completed the Bachelor of Engineering Technology 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 Technology majors into the equivalent Bachelor of Engineering (Honours) major:

- Agricultural Engineering
- Civil Engineering
- Computer Systems Engineering
- Electrical and Electronic Engineering
- Environmental Engineering
- Mechanical Engineering
- Power Engineering

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.

Before applying for approval students must demonstrate they have the ability to undertake the Bachelor of Engineering (Honours) program by successfully completing the course [ENM2600 Advanced Engineering Mathematics](#) as one of their Electives. The Faculty will also consider a student's GPA before granting approval.

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

Agricultural Engineering Major recommended enrolment pattern

Students are able to enrol in any offered mode of a course (on-campus, external or online), regardless of the program mode of study they enrolled in.

To satisfy the requirements of the program students must complete all of the Academic and Practice Courses in the following table that shows the recommended enrolment patterns for on-campus and external students for our Toowoomba campus. Students following a non-standard enrolment pattern should consult the [course specification](#) to ascertain if a course is offered in another term.

The course [AGR2902 Field Practice](#) may involve overnight field trips for which each student will be responsible for their own accommodation costs. This course is not offered in the on-campus mode. On-campus students should enrol in the external mode.

Agricultural Engineering Pathway

It is recommended that students wishing to continue into the [Bachelor of Engineering \(Honours\)](#) (Agricultural Engineering) program using a Pathway should have completed at least eight courses with a GPA greater than 5. Pathway students should enrol in [ENM2600 Advanced Engineering Mathematics](#), and [ENG3104 Engineering Simulations and Computations](#) as electives.

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								
ENG1002 Introduction to Engineering and Built Environment Applications	1	1,2	1	1,2				
ENM1600 Engineering Mathematics	1	1	1	1,2				
ENG1100 Introduction to Engineering Design	1	2	1	1,2				
CIV1501 Engineering Statics	1	2	1	2,3			Pre-requisite: ENG1500 or MAT1500 or ENM1600 or (ENM1500 and CIV1500) or Students must be enrolled in one of the following Program s: MEPR or GCEN	
ENG1101	1	1	2	1,2				
MEC1201 Engineering Materials	1	1	2	1,2,3				
ENG2102	1	2	2	2,3				
SVY1500 Spatial Science for Engineers	1	2	2	2				
AGR2302 Agricultural Machinery	2	1	3					
ENV2103 Hydraulics I	2	1	3	1			Pre-requisite: CIV1500 or CIV1501 or Students must be enrolled in the following Program: GCEN	
MEC2402 Stress Analysis	2	1	4	1			Pre-requisite: CIV1501 or Students must be enrolled in one of the following Program s: GCEN or METC or MEPR or GCNS or GDNS or MENS	
Elective (Select from the Electives list)	2	1	4	1				
ENG2002 Technology, Sustainability and Society	2	2	3	1,2,3				
CIV2403 Geology and Geomechanics	2	2	3	2			Pre-requisite: CIV1501 or CIV1500 or Students must be enrolled in one of the following Programs: MENS or GCEN	
AGR2301 Agricultural Science	2	2	4	2				
ENV3105 Hydrology	2	2	4	2				
ENG3003 Engineering Management [†]	3	1	5	1,3				
AGR3304 Soil Science	3	1	5	1				
AGR3303 Agricultural Materials and Post-Harvest Technologies	3	1	6	1				
AGR3305 Precision and Smart Technologies in Agriculture	3	1	6	1				
ENV4106 Irrigation Science	3	2	5	2			Pre-requisite: AGR3304 or Students must be enrolled in one of the following Program s: GCEN or METC or MEPR or GCNS or GDNS or MENS	
Elective (Select from the Electives list)	3	2	5	2				
Elective (Select from the Electives list)	3	2	6	2				
ENG3111 Technology Design Project	3	2	6	2			Pre-requisite: (ENG2102 or ENG1003) and Undergradu	

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		
								ate students must have completed 14 courses in their program.
Practice Courses								
ENG1901 Engineering Practice 1 ^{^^}	1	1	2	2,3			C	
CIV2901 Geology and Geomechanics Practice	2	2	3	2,3			C	Pre-requisite or Co-requisite: ENG1901 and CIV2403
ENV2902 Hydraulics Practice	2	2	3	2,3			C	Pre-requisite: ENV2103 or ENV1101
AGR2902 Field Practice [^]	2		4	3			C	
AGR3903 Soil and Water Engineering Practice 2 [^]	3		3	2			C	
ENG3909 Work Experience - Technologist [^]	3		6	1,3				
Electives (Select from the following)								
Any approved BEng (AgrEng) course OR								
ELE1301 Computer Engineering		1		1				
ELE2103 Linear Systems and Control		2		2				
ENG3104 Engineering Simulations and Computations		2		2				Pre-requisite: (ENM2600 or MAT2100 or MAT2500) or S tudents must be enrolled in one of the following Program s: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
ENV2201 Land Studies		1		1				
ENV3104 Hydraulics II		1		1				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
ENM2600 Advanced Engineering Mathematics		1		1				Pre-requisite: ENM1600 or Students must be enrolled in one of the following Program s: GCEN or METC or MENS or GDNS or MEPR
MEC2202 Manufacturing Processes		1		1				Pre-requisite: MEC1201 or Students must be enrolled in one of the following Program s: MEPR or GCEN
MEC2301 Design of Machine Elements		2		2				Pre-requisite: MEC2402 or Students must be enrolled in one of the following Program s: MEPR or GCEN
MEC2401 Dynamics I		2		2				Pre-requisite: ((MAT1502 or MAT1102 or ENM1600) and CIV1501) or Students must be enrolled in one of the following Programs: GCEN or GCNS or METC or MEPR or MENS

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		
MEC3303 Mechanical and Mechatronic System Design		2		2				Pre-requisite: MEC2301 or Students must be enrolled in one of the following Programs: GCEN or METC or GCNS or GDNS or MEPR or MENS
MEC3203 Materials Technology		1		1				Pre-requisite: MEC1201 or Students must be enrolled in one of the following Programs: GCEN or METC or GCNS or GDNS or MEPR or MENS

Footnotes

- † The semester 3 offering of this course is offered in odd numbered years only.
- ^^ [ENG1901 Engineering Practice 1](#) is the first in a series of **Practice Courses** designed to enable students to acquire engineering and professional practice skills, including practical and teamwork skills, problem solving and engineering judgement. It is designed principally to cater for the needs of recent school leavers and those lacking any significant experience of the engineering workforce. **Students who have a trade certificate and who have been employed in the engineering industry for some time may be able to claim exemption from the course.**
- ^ On-campus students should enrol in the external mode.

Civil Engineering Major recommended enrolment pattern (Toowoomba and Springfield campus)

Students are able to enrol in any offered mode of a course (on-campus, external or online), regardless of the program mode of study they enrolled in.

To satisfy the requirements of the program students must complete all of the Academic and Practice Courses in the following table that shows the recommended enrolment patterns for on-campus and external students for both Toowoomba and Springfield campuses. Students following a non-standard enrolment pattern should consult the [course specification](#) to ascertain if a course is offered in another term.

Pathways

It is recommended that students wishing to continue into the [BENH Bachelor of Engineering \(Honours\)](#) (Civil Engineering) program using a Pathway should have completed at least eight courses with a GPA greater than 5. Pathway students should enrol in [CIV3703 Transport Engineering](#) instead of [CIV2702 Municipal Services](#) and enrol in [ENM2600 Advanced Engineering Mathematics](#), , [CIV3506 Concrete Structures](#) and [ENG3104 Engineering Simulations and Computations](#) as electives.

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								
ENG1002 Introduction to Engineering and Built Environment Applications	1	1	1	1				
ENM1600 Engineering Mathematics	1	1	1	1,2				
ENG1100 Introduction to Engineering Design	1	2	1	1,2				
CIV1501 Engineering Statics	1	2	1	2,3			Pre-requisite: ENG1500 or MAT1500 or ENM1600 or (ENM1500 and CIV1500) or Students must be enrolled in one of the following Programs: MEPR or GCEN	
ENG1101	1	1	2	1,2				
MEC1201 Engineering Materials	1	1	2	1,2,3				

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		
ENG2102	1	2	2	2,3				
SVY1500 Spatial Science for Engineers	1	2	2	2				
ENV2103 Hydraulics I	2	1	3	1				Pre-requisite: CIV1500 or CIV1501 or Students must be enrolled in the following Program: GCEN
Elective (Select from the Electives list) [#]	2	1	3	1				
CIV2605 Construction Engineering	2	1	4	1				
CIV2701 Road Design and Location	2	1	4	1				Pre-requisite: MAT1500 or ENG1500 or ENM1500 or ENM1600 or Students must be enrolled in one of the following Programs: GCST or GDST or GCEN
CIV2403 Geology and Geomechanics	2	2	3	2				Pre-requisite: CIV1501 or CIV1500 or Students must be enrolled in one of the following Programs: MENS or GCEN
ENG2002 Technology, Sustainability and Society	2	2	3	1,2,3				
CIV2502 Structural and Building Technology	2	2	4	2				
CIV2702 Municipal Services [#]	2	2	4	2				Pre-requisite: ENV2103 or ENV1101
ENG3003 Engineering Management [†]	3	1	5	1,3				
MEC2402 Stress Analysis	3	1	5	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
Elective (Select from the Electives list) [#]	3	1	6	1				
Elective (Select from the Electives list) [#]	3	1	6	1				
CIV2503 Structural Design I	3	2	5	2				Pre-requisite: (ENG1100 and MEC2402) or (ENG1100 and CIV1501) for students enrolled in one of the following Programs: BETC Infrastructure Management major or BENS Infrastructure Management major) or Students must be enrolled in the following Program: GCEN
CMG2001 Job Organisation	3	2	5	2				
ENV3105 Hydrology	3	2	6	2				
ENG3111 Technology Design Project	3	2	6	2				Pre-requisite: (ENG2102 or ENG1003) and Undergraduate students must have completed 14 courses in their program.
Practice Courses								
ENG1901 Engineering Practice 1 ^{^^}	1	1,2	2	2,3			C	
CIV2901 Geology and Geomechanics Practice	2	2	3	2,3			C	Pre-requisite or Co-requisite: ENG1901 and CIV2403

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		
ENV2902 Hydraulics Practice	2	2	3	2,3			C	Pre-requisite: ENV2103 or ENV1101
CIV3906 Civil Materials Practice	2	1	4	3			C	Pre-requisite: MEC1201 and ENG1901 or Students must be enrolled in one of the following programs: ADCN or BCON or BCNH
CIV3907 Civil Systems Practice ^			6	3			C	Pre-requisite: CIV2503 or Students must be enrolled in one of the following Programs: GDNS or MENS
ENG3909 Work Experience - Technologist ^	3		6	1,3				
Electives (Select from the following)								
Any approved BEng (Civil) course OR								
CIV3603 Construction Methods				2				
CIV3506 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
CIV3703 Transport Engineering		2		2				
ENG3104 Engineering Simulations and Computations		2		2				Pre-requisite: (ENM2600 or MAT2100 or MAT2500) or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
ENG4004 Engineering Project and Operations Management ‡		2,3		2,3				
ENV2201 Land Studies		1		1				
ENV4204 Environmental Technology		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		1		1,3				
ENM2600 Advanced Engineering Mathematics		1		1				Pre-requisite: ENM1600 or Students must be enrolled in one of the following Programs: GCEN or METC or MENS or GDNS or MEPR
REN1201 Environmental Studies		1		1				
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				
ENV4203 Public Health Engineering		2		2				Pre-requisite: ENV1101 or ENV2103 or Students must be enrolled in one of the fol

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		
							Following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS	

Footnotes

- # This is a Pathway to the Bachelor of Engineering course. Please refer to [Other Information - Engineering Pathways](#) at the beginning of this program section.
- † The semester 3 offering of this course is offered in odd numbered years only.
- ^^ [ENG1901 Engineering Practice 1](#) is the first in a series of **Practice Courses** designed to enable students to acquire engineering and professional practice skills, including practical and teamwork skills, problem solving and engineering judgement. It is designed principally to cater for the needs of recent school leavers and those lacking any significant experience of the engineering workforce. **Students who have a trade certificate and who have been employed in the engineering industry for some time may be able to claim exemption from the course.**
- ^ On-campus students should enrol in the external offering of this course.
- * Not available on-campus at Springfield in 2017.
- ‡ The semester 3 offering of this course is offered in even numbered years only.

Computer Systems Engineering Major recommended enrolment pattern

Students are able to enrol in any offered mode of a course (on-campus, external or online), regardless of the program mode of study they enrolled in.

To satisfy the requirements of the program students must complete all of the Academic and Practice Courses in the following table that shows the recommended enrolment patterns for on-campus and external students for our Toowoomba campus. Students following a non-standard enrolment pattern should consult the [course specification](#) to ascertain if a course is offered in another term.

With approval from the Faculty of Health, Engineering and Sciences, students may also enrol in courses from other engineering, sciences or business programs. A maximum of one unit may be selected.

On entering the Bachelor of Engineering Technology in Computer Systems 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](#) will be required to purchase an electronic kit costing approximately \$50.

Students who have been granted an exemption in the course [ELE1801 Electrical Technology](#) are strongly advised to purchase the [ELE1801](#) study materials from the USQ Bookshop and work through these to consolidate their knowledge.

Pathways

The Pathway to the Bachelor of Engineering (Honours) program is available for this major. Please refer to [Other Information - Engineering Pathways](#) at the beginning of this program section.

Major study: Computer Systems Engineering (Major Study Code: 13274)								
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								
CSC1401 Foundation Programming	1	1	1	1,2				
ENG1101	1	1	2	1,2				
ENM1600 Engineering Mathematics	1	1	1	1,2				
ELE1301 Computer Engineering	1	1	2	1				
ENG2102	1	2	2	2,3				
ELE1502 Electronic Circuits	1	2	2	2				

Major study: Computer Systems Engineering (Major Study Code: 13274)								
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		
ELE1801 Electrical Technology	1	2	1	2,3			Pre-requisite: ENG1500 or MAT1500 or ENM1500 or ENM1600 or Students must be enrolled in one of the following Programs: MEPR or GCEN	
ENG1002 Introduction to Engineering and Built Environment Applications	1	1,2	1	2				
CSC2401 Algorithms and Data Structures	2	2	3	1			Pre-requisite: CSC2402 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	
MAT1101 Discrete Mathematics for Computing	2	1	4	1				
ELE2303 Embedded Systems Design	2	1	3	1				
ENG1100 Introduction to Engineering Design	2	2	4	1,2				
ELE2501 Electronic Workshop and Production [#]	2	2	3	2			Pre-requisite: (ELE1502 and ELE1801) or Students must be enrolled in the following Program: GCEN	
ENG2002 Technology, Sustainability and Society	2	1	4	1,2,3				
Elective (Select from the Electives list) [#]	2	1	4	1				
ELE2101 Control and Instrumentation [#]	2	2	3	2			Pre-requisite: ENG1500 or MAT1500 or ENM1500 or ENM1600 or Students must be enrolled in one of the following Programs: MEPR or GCEN	
CSC2402 Object-Oriented Programming in C++	3	1	6	1			Pre-requisite: CSC1401 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	
ELE3305 Computer Systems and Communications Protocols	3	1	6	1				
ENG3003 Engineering Management [†]	3	1	5	1,3				
ELE2601 Telecommunications Principles	3	1	5	1			Pre-requisite: (ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GCEN or METC	
ENG3111 Technology Design Project	3	2	6	2			Pre-requisite: (ENG2102 or ENG1003) and Undergraduate students must have completed 14 courses in their program.	
Elective (Select from the Electives list)	3	2	6	2				
ELE2503 Electronic Systems [#]	3	2	5	2			Pre-requisite: ELE1502 or Students must be enrolled in the following Program: GCEN	
ELE3307 Real Time Systems	3	2	5	2			Pre-requisite: ELE1301 or Students must be enrolled in one of the following Program	

Major study: Computer Systems Engineering (Major Study Code: 13274)								
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 MENS or MEPR
Practice Courses								
ENG1901 Engineering Practice 1 ^{^^}	1	1,2	1	2,3			C	
ELE1911 Electrical and Electronic Practice A	1	2	2	3			C	
ELE2912 Electrical and Electronic Practice B	2	1	3	3			C	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	3	2	5	2			C	Pre-requisite: (ELE1301 and ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GDNS or MENS
ENG3909 Work Experience - Technologist [^]	3		6	1,3				
ELE3914 Electrical and Electronic Practice D	3	1	6	2			C	Pre-requisite: (ELE1801 and ELE1301 and ELE1502) or Students must be enrolled in one of the following Programs: MENS or MEPR
Electives (Select from the following)								
CSC3403 Comparative Programming Languages		1		1				Pre-requisite: CSC2402 or enrolled in CSC2402 at the same time as CSC3403 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
ELE2103 Linear Systems and Control		2		2				
ENG4004 Engineering Project and Operations Management [†]		2,3		2,3				
CSC2408 Software Development Tools		2		1,2				

Footnotes

- # This is a Pathway to the Bachelor of Engineering course. Please refer to [Other Information - Engineering Pathways](#) at the beginning of this program section.
- † The semester 3 offering of this course is offered in odd numbered years only.
- ^^ [ENG1901 Engineering Practice 1](#) is the first in a series of **Practice Courses** designed to enable students to acquire engineering and professional practice skills, including practical and teamwork skills, problem solving and engineering judgement. It is designed principally to cater for the needs of recent school leavers and those lacking any significant experience of the engineering workforce. **Students who have a trade certificate and who have been employed in the engineering industry for some time may be able to claim exemption from the course.**
- ^ On-campus students should enrol in the external offering of this course.
- ‡ The semester 3 offering of this course is offered in even numbered years only.

Electrical and Electronic Engineering Major recommended enrolment pattern

Students are able to enrol in any offered mode of a course (on-campus, external or online), regardless of the program mode of study they enrolled in.

To satisfy the requirements of the program students must complete all of the Academic and Practice Courses in the following table that shows the recommended enrolment patterns for on-campus and external students for both Toowoomba and Springfield campuses. Students following a non-standard enrolment pattern should consult the [course specification](#) to ascertain if a course is offered in another term.

Students wishing to further their knowledge of software may be allowed to choose one Elective from courses offered by the School of Agricultural, Computational and Environmental Sciences. Interested students should peruse the [course specification](#) to see what is available and then seek permission to undertake the course from the Faculty of Health, Engineering and Sciences. A maximum of one unit may be selected.

On entering the Bachelor of Engineering Technology 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](#) will be required to purchase an electronic kit costing approximately \$50. For [ELE2702](#), access to an analogue multimeter and hook-up wire may be required, together with the purchase of some electronic components.

Students who have been granted an exemption in the course [ELE1801 Electrical Technology](#) are strongly advised to purchase the [ELE1801](#) study materials from the [USQ Bookshop](#) and work through these prior to attempting [ELE2702](#) or [ELE3803](#).

Pathways

The Pathway to the Bachelor of Engineering (Honours) program is available for this major. Please refer to [Other Information - Engineering Pathways](#) at the beginning of this program section.

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								
MEC1201 Engineering Materials	1	1	1	1,2,3				
ENG1101	1	1	2	1,2				
ENM1600 Engineering Mathematics	1	1	1	1,2				
ELE1301 Computer Engineering	1	1	2	1				
ENG1002 Introduction to Engineering and Built Environment Applications	1	1,2	1	1,2				
ENG2102	1	2	2	2,3				
ELE1502 Electronic Circuits	1	2	2	2				
ELE1801 Electrical Technology	1	2	1	2,3				Pre-requisite: ENG1500 or MAT1500 or ENM1500 or ENM1600 or Students must be enrolled in one of the following Programs: MEPR or GCEN
ENG1100 Introduction to Engineering Design	2	1	3	1,2				
ELE2702 Electrical Measurement and Analysis [#]	2	1	4	1				Pre-requisite: (ENG1500 or MAT1500 or ENM1500 or ENM1600) and ELE1801 or Students must be enrolled in the following Program: GCEN
ELE2601 Telecommunications Principles	2	1	4	1				Pre-requisite: (ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GCEN or METC
ELE2303 Embedded Systems Design	2	1	3	1				
ELE2501 Electronic Workshop and Production [#]	2	2	3	2				Pre-requisite: (ELE1502 and ELE1801) or Students must be enrolled in the following Program: GCEN
Elective (Select from the Electives list) [#]	2	2	4	2				

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		
ELE2503 Electronic Systems [#]	2	2	4	2			Pre-requisite: ELE1502 or S students must be enrolled in the following Program: GCEN	
ELE2101 Control and Instrumentation [#]	2	2	3	2			Pre-requisite: ENG1500 or MAT1500 or ENM1500 or ENM1600 or Students must be enrolled in one of the following Programs: MEPR or GCEN	
ENG3003 Engineering Management [†]	3	1	6	1,3				
Elective (Select from the Electives list) [#]	3	1	6	1				
ELE3803 Electrical Plant	3	1	5	1			Pre-requisite: ELE1801 or S students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS	
Elective (Select from the Electives list) [#]	3	2	6	1				
ENG2002 Technology, Sustainability and Society	3	1	5	1,2,3				
ENG3111 Technology Design Project	3	2	6	2			Pre-requisite: (ENG2102 or ENG1003) and Undergraduate students must have completed 14 courses in their program.	
ELE3506 Electronic Measurement	3	2	5	2			Pre-requisite: (ELE1502 and (ELE2101 or ELE2103) and (ELE2503 or ELE2504)) or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or MENS	
ELE3805 Power Electronics Principles and Applications	3	2	5	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	
Practice Courses								
ENG1901 Engineering Practice 1 ^{^^}	1	1,2	1	2,3			C	
ELE1911 Electrical and Electronic Practice A	1	2	2	3			C	
ELE2912 Electrical and Electronic Practice B	2	1	3	3			C 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	2	4	2			C Pre-requisite: (ELE1301 and ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GDNS or MENS	
ELE3914 Electrical and Electronic Practice D	3	1	5	2			C Pre-requisite: (ELE1801 and ELE1301 and ELE1502) or Students must be enrolled in one of the following Programs: MENS or MEPR	

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		
ENG3909 Work Experience - Technologist [^]	3		6	1,3				
Electives (Select from the following)								
ELE2704 Electricity Supply Systems				2			Pre-requisite: ELE1801 or S students must be enrolled in one of the following Programs: MEPR or GCEN or METC	
ELE2103 Linear Systems and Control		2		2				
ELE2504 Electronic Design and Analysis		2		2			Pre-requisite: ELE1502 or S students must be enrolled in one of the following Programs: MEPR or GDNS or MENS or GCNS or GCEN	
ENG4004 Engineering Project and Operations Management [‡]		2,3		2,3				
ELE3305 Computer Systems and Communications Protocols		1		1				
ELE4109 Measurement Science and Instrument Engineering ^{>}				1				
ELE3804 Power Systems Protection		1		1			Pre-requisite: ELE1801 or S students must be enrolled in the following Program: GCEN	

Footnotes

- # This is a Pathway to the Bachelor of Engineering course. Please refer to [Other Information - Engineering Pathways](#) at the beginning of this program section.
- † The semester 3 offering of this course is offered in odd numbered years only.
- ^^ [ENG1901 Engineering Practice 1](#) is the first in a series of **Practice Courses** designed to enable students to acquire engineering and professional practice skills, including practical and teamwork skills, problem solving and engineering judgement. It is designed principally to cater for the needs of recent school leavers and those lacking any significant experience of the engineering workforce. **Students who have a trade certificate and who have been employed in the engineering industry for some time may be able to claim exemption from the course.**
- ^ On-campus students should enrol in the external mode.
- ‡ The semester 3 offering of this course is offered in even numbered years only.
- > Offered Odd Years Only.

Environmental Engineering Major recommended enrolment pattern

Students are able to enrol in any offered mode of a course (on-campus, external or online), regardless of the program mode of study they enrolled in.

To satisfy the requirements of the program students must complete all of the Academic and Practice Courses in the following table that shows the recommended enrolment patterns for on-campus and external students for our Toowoomba campus. Students following a non-standard enrolment pattern should consult the [course specification](#) to ascertain if a course is offered in another term.

Pathways

It is recommended that students wishing to continue into the [Bachelor of Engineering \(Honours\)](#)(Environmental Engineering) program using a Pathway should have completed at least eight courses with a GPA greater than

5. Pathway students should enrol in , [ENM2600 Advanced Engineering Mathematics](#) and [ENG3104 Engineering Simulations and Computations](#) as electives.

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								
ENG1002 Introduction to Engineering and Built Environment Applications	1	1,2	1	1,2				
ENM1600 Engineering Mathematics	1	1	1	1,2				
ENG1100 Introduction to Engineering Design	1	2	1	1,2				
ENG1101	1	1	2	1,2				
CIV1501 Engineering Statics	1	2	1	2,3			Pre-requisite: ENG1500 or MAT1500 or ENM1600 or (ENM1500 and CIV1500) or Students must be enrolled in one of the following Program s: MEPR or GCEN	
MEC1201 Engineering Materials	1	1	2	1,2,3				
ENG2102	1	2	2	2,3				
SVY1500 Spatial Science for Engineers	1	2	2	2				
REN1201 Environmental Studies	2	1	3	1				
ENV2103 Hydraulics I	2	1	3	1			Pre-requisite: CIV1500 or CIV1501 or Students must be enrolled in the following Program: GCEN	
ENV2201 Land Studies	2	1	4	1				
Elective (Select from the Electives list) [#]	2	1	4	1				
ENG2002 Technology, Sustainability and Society	2	2	3	1,2,3				
CIV2403 Geology and Geomechanics	2	2	3	2			Pre-requisite: CIV1501 or CIV1500 or Students must be enrolled in one of the following Programs: MENS or GCEN	
ENV3105 Hydrology	2	2	4	2				
AGR2301 Agricultural Science	2	2	4	2				
ENG3003 Engineering Management [†]	3	1	5	1,3				
ENV4204 Environmental Technology	3	1	5	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	6	1				
Elective (Select from the Electives list) [#]	3	1	6	1				
ENV4203 Public Health Engineering	3	2	5	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	
Elective (Select from the Electives list) [#]	3	2	5	2				
ENV4106 Irrigation Science	3	2	6	2			Pre-requisite: AGR3304 or Students must be enrolled in one of the following Program	

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		
								s: GCEN or METC or MEPR or GCNS or GDNS or MENS
ENG3111 Technology Design Project	3	2	6	2				Pre-requisite: (ENG2102 or ENG1003) and Undergraduate students must have completed 14 courses in their program.
Practice Courses								
ENG1901 Engineering Practice 1 ^{^^}	1	1	1	2,3			C	
CIV2901 Geology and Geomechanics Practice	2	2	3	2,3			C	Pre-requisite or Co-requisite: ENG1901 and CIV2403
ENV2902 Hydraulics Practice	2	2	3	2,3			C	Pre-requisite: ENV2103 or ENV1101
AGR2902 Field Practice	2		4	3			C	
ENV3904 Environmental Engineering Practice [^]	3		5	3			C	Pre-requisite: ENV4203 or Students must be enrolled in one of the following Program s: GDNS or MENS
AGR3903 Soil and Water Engineering Practice 2 [^]	3		6	2			C	
ENG3909 Work Experience - Technologist [^]	3		6	1,3				
Electives (Select from the following)								
Any approved BEng (Env) course OR								
AGR3305 Precision and Smart Technologies in Agriculture		1		1				
CHE1110 Chemistry 1		1		1				
CIV3703 Transport Engineering		2		2				
CLI2201 Climate Change and Variability		2		2				
ENG3104 Engineering Simulations and Computations		2		2				Pre-requisite: (ENM2600 or MAT2100 or MAT2500) or S tudents must be enrolled in one of the following Program s: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
ENG4004 Engineering Project and Operations Management [‡]		2,3		2,3				
GIS1402 Geographic Information Systems		1		1,3				
LAW2107 Environmental Law [*]		1				1		Co-requisite: LAW1101 or LAW1500 or ENG2002 or REN1201 or (Students enrolled in BEDU (Legal Studies) or BLAW or LLBP or BALW or BBLA or BCLA or BCLW & Co-requisite LAW1201 or LAW1111) or (Students enrolled in DJUR & Co-requisite LAW5501 or LAW5111)
ENM2600 Advanced Engineering Mathematics		1		1				Pre-requisite: ENM1600 or Students must be enrolled in one of the following Program

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		
							s: GCEN or METC or MENS or GDNS or MEPR	
URP3201 Sustainable Urban Design and Development		2		2				
SVY3202 Photogrammetry and Remote Sensing		1		1				

Footnotes

- # This is a Pathway to the Bachelor of Engineering course. Please refer to [Other Information - Engineering Pathways](#) at the beginning of this program section.
- † The semester 3 offering of this course is offered in odd numbered years only.
- ^^ [ENG1901 Engineering Practice 1](#) is the first in a series of **Practice Courses** designed to enable students to acquire engineering and professional practice skills, including practical and teamwork skills, problem solving and engineering judgement. It is designed principally to cater for the needs of recent school leavers and those lacking any significant experience of the engineering workforce. **Students who have a trade certificate and who have been employed in the engineering industry for some time may be able to claim exemption from the course.**
- ^ On-campus students should enrol in the external mode.
- ‡ The semester 3 offering of this course is offered in even numbered years only.
- * Springfield campus only

Infrastructure Management Major recommended enrolment pattern (Toowoomba and Springfield campus)

Students are able to enrol in any offered mode of a course (on-campus, external or online), regardless of the program mode of study they enrolled in.

(Formerly known as Building and Construction Management)

To satisfy the requirements of the program students must complete all of the Academic and Practice Courses in the following table that shows the recommended enrolment patterns for on-campus and external students for both Toowoomba and Springfield campuses. Students following a non-standard enrolment pattern should consult the [course specification](#) to ascertain if a course is offered in another term.

Major study: Infrastructure Management (Major Study Code: 12046)								
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								
ENG1002 Introduction to Engineering and Built Environment Applications	1	1,2	1	1,2				
ENM1600 Engineering Mathematics	1	1	1	1,2				
ENG1100 Introduction to Engineering Design	1	2	1	1,2				
ENG1101	1	1	2	1,2				
CIV1501 Engineering Statics	1	2	1	2,3			Pre-requisite: ENG1500 or MAT1500 or ENM1600 or (ENM1500 and CIV1500) or Students must be enrolled in one of the following Program s: MEPR or GCEN	
MEC1201 Engineering Materials	1	1	2	1,2,3				
ENG2102	1	2	2	2,3				
SVY1500 Spatial Science for Engineers	1	2	2	2				
MGT1001 Foundations of Human Resource Management	2	1	3	1				
MGT1000 Organisational Behaviour	2	1	3	1				
MGT3100 Quality and Performance Management~	2	1	4	1				
CIV2605 Construction Engineering	2	1	4	1				
ENG2002 Technology, Sustainability and Society	2	2	3	1,2,3				

Major study: Infrastructure Management (Major Study Code: 12046)								
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		
LAW1101	2	2	3	2,3				
CIV2502 Structural and Building Technology	2	2	4	2				
CIV2403 Geology and Geomechanics	2	2	4	2				Pre-requisite: CIV1501 or CIV1500 or Students must be enrolled in one of the following Programs: MENS or GCEN
ENG3003 Engineering Management [†]	3	1	5	1,3				
ACC1101 Accounting for Decision-Making	3	1	5	1,2				
MGT2001 Risk Mitigation, Work Health and Safety	3	1	6	1				
Elective (Select from the Electives list)	3	1	6	1				
CIV2503 Structural Design I	3	2	5	2				Pre-requisite: (ENG1100 and MEC2402) or (ENG1100 and CIV1501 for students enrolled in one of the following Programs: BETC Infrastructure Management major or BENS Infrastructure Management major) or Students must be enrolled in the following Program: GCEN
CMG2001 Job Organisation	3	2	5	2				
CIV3603 Construction Methods	3		6	2				
ENG3111 Technology Design Project	3	2	6	2				Pre-requisite: (ENG2102 or ENG1003) and Undergraduate students must have completed 14 courses in their program.
Practice Courses								
ENG1901 Engineering Practice 1 ^{^^}	1	1	2	2,3			C	
CIV2901 Geology and Geomechanics Practice	2	2	4	2,3			C	Pre-requisite or Co-requisite: ENG1901 and CIV2403
CIV3906 Civil Materials Practice	3	1	5	3			C	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 [^]	3		6	1,3				
Electives (Select from the following)								
Any approved BEng (Civil) course OR								
CIV3506 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				
URP4203		1		1				
ENG4004 Engineering Project and Operations Management [‡]		2,3		2,3				

Footnotes

~ Last offering 2019

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

^^ **ENG1901 Engineering Practice 1** is the first in a series of **Practice Courses** designed to enable students to acquire engineering and professional practice skills, including practical and teamwork skills, problem solving and engineering judgement. It is designed principally to cater for the needs of recent school leavers and those lacking any significant experience of the engineering workforce. **Students who have a trade certificate and who have been employed in the engineering industry for some time may be able to claim exemption from the course.**

^ On-campus students should enrol in the external mode.

* Not available on-campus at Springfield in 2017.

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

Mechanical Engineering Major recommended enrolment pattern

Students are able to enrol in any offered mode of a course (on-campus, external or online), regardless of the program mode of study they enrolled in.

To satisfy the requirements of the program students must complete all of the Academic and Practice Courses in the following table that shows the recommended enrolment patterns for on-campus and external students for our Toowoomba campus. Students following a non-standard enrolment pattern should consult the [course specification](#) to ascertain if a course is offered in another term.

Pathways

The Pathway to the Bachelor of Engineering (Honours) program is available for this major. Please refer to [Other Information - Engineering Pathways](#) at the beginning of this program section.

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		
Academic Courses								
ENG1002 Introduction to Engineering and Built Environment Applications	1	1,2	1	1,2				
ENG1101	1	1	1	1,2				
ENM1600 Engineering Mathematics	1	1	2	1,2				
ENG1100 Introduction to Engineering Design	1	1	2	1,2				
MEC1201 Engineering Materials	1	2	1	1,2,3				
ENG2102	1	2	1	2,3				
CIV1501 Engineering Statics	1	2	2	2,3				Pre-requisite: ENG1500 or MAT1500 or ENM1600 or (ENM1500 and CIV1500) or Students must be enrolled in one of the following Programs: MEPR or GCEN
MEC2304 Solid Modelling	1	2	2	2				
ENG2002 Technology, Sustainability and Society	2	1	3	1,2,3				
MEC2202 Manufacturing Processes	2	1	3	1				Pre-requisite: MEC1201 or Students must be enrolled in one of the following Programs: MEPR or GCEN
MEC2402 Stress Analysis	2	1	4	1				Pre-requisite: CIV1501 or S tudents must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS
MEC2405 Machine Dynamics [#]	2	1	4	1				Pre-requisite: CIV1501 or S tudents must be enrolled in the following Program: GCEN
MEC2106 Introduction to Thermofluids [#]	2	2	3	2				Pre-requisite: CIV1500 or CIV1501 or Students must be enrolled in one of the following Programs: BENH or BE

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		
								BC or BEHS or GCEN or MENS
ELE1801 Electrical Technology	2	2	3	2,3				Pre-requisite: ENG1500 or MAT1500 or ENM1500 or ENM1600 or Students must be enrolled in one of the following Programs: MEPR or GCEN
MEC2301 Design of Machine Elements	2	2	4	2				Pre-requisite: MEC2402 or Students must be enrolled in one of the following Programs: MEPR or GCEN
Elective (Select from the Electives list) [#]	2	2	4	2				
MEC2101 Thermodynamics	3	1	5	1				
ENG3003 Engineering Management [†]	3	1	5	1,3				
MEC3203 Materials Technology	3	1	6	1				Pre-requisite: MEC1201 or Students must be enrolled in one of the following Programs: GCEN or METC or GCNS or GDNS or MEPR or MENS
Elective (Select from the Electives list) [#]	3	1	6	1				
Elective (Select from the electives list) [#]	3	2	5	2				
MEC3303 Mechanical and Mechatronic System Design	3	2	5	2				Pre-requisite: MEC2301 or Students must be enrolled in one of the following Programs: GCEN or METC or GCNS or GDNS or MEPR or MENS
ENG3111 Technology Design Project	3	2	6	2				Pre-requisite: (ENG2102 or ENG1003) and Undergraduate students must have completed 14 courses in their program.
MEC3204 Production Engineering	3	2	6	2				
Practice Courses								
ENG1901 Engineering Practice 1 ^{^^}	1	1	2	2,3			C	
MEC2901 Mechanical Practice 1	1	1	3	3			C	
MEC2902 Mechanical Practice 2	2	1	4	1			C	
MEC3903 Mechanical Practice 3	2	2	4	2			C	
MEC3904 Mechanical Practice 4	3	2	6	2			C	Pre-requisite: MEC3102 or MEC2106 or Students must be enrolled in one of the following Programs: GDNS or MENS or MEPR
ENG3909 Work Experience - Technologist [^]	3		6	1,3				
Electives (Select from the following)								
MEC4104 Renewable Energy Technology		1		1				Pre-requisite: ((MEC2101 and MEC3102) or MEC2106) or Students must be enrolled in one of the following Programs: GCEN or GCNS or

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		
							GDNS or METC or MENS or MEPR	
ENG4004 Engineering Project and Operations Management[†]		2,3		2,3				
AGR2302 Agricultural Machinery				1				
CIV2502 Structural and Building Technology		2		2				
MAT1102 Algebra and Calculus I		1		1				
ELE1502 Electronic Circuits		2		2				
ELE1301 Computer Engineering		1		1				
ELE3803 Electrical Plant		1		1			Pre-requisite: ELE1801 or S students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS	
CIV2503 Structural Design I		2		2			Pre-requisite: (ENG1100 and MEC2402) or (ENG1100 and CIV1501) for students enrolled in one of the following Programs: BETC Infrastructure Management major or BENS Infrastructure Management major) or Students must be enrolled in the following Program: GCEN	
ENV4204 Environmental Technology		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	

Footnotes

- # This is a pathway to the [Bachelor of Engineering](#). Please refer to [Other Information - Engineering Pathways](#) at the beginning of this program section.
- † The semester 3 offering of this course is offered in odd numbered years only.
- ^^ [ENG1901 Engineering Practice 1](#) is the first in a series of **Practice Courses** designed to enable students to acquire engineering and professional practice skills, including practical and teamwork skills, problem solving and engineering judgement. It is designed principally to cater for the needs of recent school leavers and those lacking any significant experience of the engineering workforce. **Students who have a trade certificate and who have been employed in the engineering industry for some time may be able to claim exemption from the course.**
- ^ On-campus students should enrol in the external mode.
- ‡ The semester 3 offering of this course is offered in even numbered years only.

Power Engineering Major recommended enrolment pattern

Students are able to enrol in any offered mode of a course (on-campus, external or online), regardless of the program mode of study they enrolled in.

To satisfy the requirements of the program students must complete all of the Academic and Practice Courses in the following table that shows the recommended enrolment patterns for on-campus and external students for our Toowoomba campus. Students following a non-standard enrolment pattern should consult the [course specification](#) to ascertain if a course is offered in another term.

Students wishing to further their knowledge of software may be allowed to choose one Elective from courses offered by the School of Agricultural, Computational and Environmental Sciences. Interested students should consult the [course specification](#) to see what is available and then seek permission to undertake the course from the Faculty of Health, Engineering and Sciences. A maximum of one unit may be selected.

On entering the Bachelor of Engineering Technology in Power 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](#) will be required to purchase an electronic kit costing approximately \$50. For [ELE2702](#), access to an analogue multimeter and hook-up wire may be required, together with the purchase of some electronic components.

Students who have been granted an exemption in the course [ELE1801 Electrical Technology](#) are strongly advised to purchase the [ELE1801](#) study materials from the [USQ Bookshop](#) and work through these prior to attempting [ELE2702](#) or [ELE3803](#).

Pathway

The Pathway to the Bachelor of Engineering (Honours) program is available for this major. Please refer to [Other Information - Engineering Pathways](#) at the beginning of this program section.

Major study: Power Engineering (Major Study Code:15935)								
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								
MEC1201 Engineering Materials	1	1	1	1,2,3				
ENG1101	1	1	2	1,2				
ENM1600 Engineering Mathematics	1	1	2	1,2				
ELE1301 Computer Engineering	1	1	2	1				
ENG1002 Introduction to Engineering and Built Environment Applications	1	1,2	1	1,2				
ENG2102	1	2	2	2,3				
ELE1502 Electronic Circuits	1	2	2	2				
ELE1801 Electrical Technology	1	2	1	2,3				Pre-requisite: ENG1500 or MAT1500 or ENM1500 or ENM1600 or Students must be enrolled in one of the following Programs: MEPR or GCEN
ENG1100 Introduction to Engineering Design	2	1	3	1,2				
ELE2702 Electrical Measurement and Analysis [#]	2	1	4	1				Pre-requisite: (ENG1500 or MAT1500 or ENM1500 or ENM1600) and ELE1801 or Students must be enrolled in the following Program: GCEN
Elective (Select from the Electives list)	2	1	4	1				
ELE2303 Embedded Systems Design	2	1	3	1				
ELE2501 Electronic Workshop and Production [#]	2	2	3	2				Pre-requisite: (ELE1502 and ELE1801) or Students must be enrolled in the following Program: GCEN
ELE2704 Electricity Supply Systems [^]	2	2	4	2				Pre-requisite: ELE1801 or Students must be enrolled in one of the following Programs: MEPR or GCEN or METC
ELE2503 Electronic Systems [#]	2	2	4	2				Pre-requisite: ELE1502 or Students must be enrolled in the following Program: GCEN
ELE2101 Control and Instrumentation [#]	2	2	3	2				Pre-requisite: ENG1500 or MAT1500 or ENM1500 or ENM1600 or Students must

Major study: Power Engineering (Major Study Code:15935)									
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: MEPR or GCEN	
ENG3003 Engineering Management [†]	3	1	6	1,3					
ENG2002 Technology, Sustainability and Society	3	2	5	1,2,3					
Elective (Select from the Electives list)	3	1	6	1					
ELE3803 Electrical Plant	3	1	5	1				Pre-requisite: ELE1801 or S students must be enrolled in one of the following Program s: GCEN or METC or MEPR or GCNS or GDNS or MENS	
ELE3804 Power Systems Protection	3	1	6	1				Pre-requisite: ELE1801 or S students must be enrolled in the following Program: GCEN	
ENG3111 Technology Design Project	3	2	6	2				Pre-requisite: (ENG2102 or ENG1003) and Undergradu ate students must have completed 14 courses in their program.	
Elective (Select from the Electives list)	3	2	5	2					
ELE3805 Power Electronics Principles and Applications	3	2	5	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	
Practice Courses									
ENG1901 Engineering Practice 1 ^{^^}	1	1	1	2,3			C		
ELE1911 Electrical and Electronic Practice A	1	2	2	3			C		
ELE2912 Electrical and Electronic Practice B	2	1	3	3			C	Pre-requisite: (ELE1301 and ELE1502 and ELE1801) or Students must be enrolled in one of the following Program s: GDNS or MENS	
ELE2913 Electrical and Electronic Practice C	2	2	4	2			C	Pre-requisite: (ELE1301 and ELE1502 and ELE1801) or Students must be enrolled in one of the following Program s: GDNS or MENS	
ELE3914 Electrical and Electronic Practice D	3	1	5	2			C	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 [^]	3		6	1,3					
Electives (Select from the following)									
ELE2103 Linear Systems and Control		2		2					
ELE2504 Electronic Design and Analysis		2		2				Pre-requisite: ELE1502 or S tudents must be enrolled in one of the following Program s: MEPR or GDNS or MENS or GCNS or GCEN	

Major study: Power Engineering (Major Study Code:15935)								
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		
ENG4004 Engineering Project and Operations Management[†]		2,3		2,3				
ELE3305 Computer Systems and Communications Protocols		1		1				
ELE4109 Measurement Science and Instrument Engineering^{>}				1				
CIV1501 Engineering Statics		2		2,3			Pre-requisite: ENG1500 or MAT1500 or ENM1600 or (ENM1500 and CIV1500) or Students must be enrolled in one of the following Programs: MEPR or GCEN	
CIV2605 Construction Engineering		1		1				
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	
GIS1401 Geographic Data Presentation		2		2				
GIS1402 Geographic Information Systems		1		1,3				
SVY1110 Introduction to Global Positioning System		2		2				

Footnotes

- # This is a Pathway to the Bachelor of Engineering course. Please refer to [Other Information - Engineering Pathways](#) at the beginning of this program section.
- ^ On-campus students should enrol in the external offering of this course.
- † The semester 3 offering of this course is offered in odd numbered years only.
- ^^ [ENG1901 Engineering Practice 1](#) is the first in a series of **Practice Courses** designed to enable students to acquire engineering and professional practice skills, including practical and teamwork skills, problem solving and engineering judgement. It is designed principally to cater for the needs of recent school leavers and those lacking any significant experience of the engineering workforce. **Students who have a trade certificate and who have been employed in the engineering industry for some time may be able to claim exemption from the course.**
- ‡ The semester 3 offering of this course is offered in even numbered years only.
- > Offered Odd Years Only