Associate Degree of Engineering (ADNG) - AssocDegEng

QTAC code (Australian and New Zealand applicants): Toowoomba campus: 907052; Distance education: 907055; Springfield campus: 927052

CRICOS code (International applicants): 054271G

	On-campus	Distance education
Semester intake:	Semester 1 (February) Semester 2 (July)	Semester 1 (February) Semester 2 (July)
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:	2 years full-time, 4 years part-time or external	
Program articulation:	To: Bachelor of Engineering; Bachelor of Engineering Technology	

Notes:

Please note that the Civil Engineering major is the only major that is available on-campus at Springfield in the ; Associate Degree of Engineering.

Contact us

Future Australian and New Zealand students	Future International students	Current students
Ask a question Freecall (within Australia): 1800 269 500 Phone (from outside Australia): +61 7 4631 5315 Email: studyeng@usq.edu.au	Ask a question Phone: +61 7 4631 5543 Email: international@usq.edu.au	Ask a question Freecall (within Australia): 1800 007 252 Phone (from outside Australia): +61 7 4631 2285 Email usq.suppport@usq.edu.au

Agricultural Engineering major

This major prepares students for a career as an engineering officer. Students learn to apply practical analysis and technical principles to the areas of sustainable agricultural production, agricultural machinery hydraulics and hydrology.

USQ is the only institution in Australia that offers degrees specialising in Agricultural Engineering.

Career opportunities

Engineering or technical support officer in agricultural machinery, water resources engineering, irrigation, soil and water management, salinisation, drainage, mine rehabilitation, engineering problem solving and management.

Civil Engineering major

This major prepares students for a career as an engineering officer. Students learn to apply practical analysis and technical principles to the areas of design, testing, inspection, plant operation and manufacturing processes.

Career opportunities

The building and development of infrastructure, such as roads, railways, airfields, irrigation works, buildings, harbour facilities, dams, pipelines, sewers, tunnels, canals and disposal works.

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Computer Systems Engineering major

This major prepares students for a career as an engineering officer. Students learn to apply practical analysis and technical principles to the areas of design and development of computer systems, including both hardware and software.

Career opportunities

Engineering applications of expert systems, hardware interfacing, computer sales, computer engineering technologist, computer manufacturing and computer systems officer.

Electrical and Electronic Engineering major

This major prepares students for a career as an engineering officer. Students learn to apply practical analysis and technical principles to the areas of design, testing, inspection, plant operation and manufacturing processes.

Career opportunities

Analogue and digital electronics, computer engineering, microprocessors and applications, measurement, instrumentation and control, robotics, telecommunications, microwaves, fibre optics, biomedical engineering, power stations, distribution and machines, defence services, electricity networks, government departments.

Environmental Engineering major

This major provides students with skills in environmental impact assessment and management, soil and water resource management, rehabilitation of degraded lands, and water supply. Basic studies in the engineering sciences provide the foundation for the specialist environmental engineering courses which comprise the core of the program.

Career opportunities

Water and wastewater treatment, river hydrology, soil conservation, irrigation, salinisation, drainage, mine site rehabilitation, environmental studies, water resources engineering, soil science, engineering problem solving and management.

Mechanical Engineering major

This major prepares students for a career as an engineering officer. Students learn to apply practical analysis and technical principles to the areas of design, testing, inspection, plant operation and manufacturing processes.

Career opportunities

Manufacturing, refineries, mining, transportation, computing, energy and education industries, including project planning and management design, development, supervision and commissioning of new systems, computer-aided design and manufacture of consumer products, machines and equipment, specialist technical sales.

Power Engineering major

Students will study electrical power generation, distribution and transmission, electrical power equipment and systems. Specification, design and analysis of electrical power equipment and systems are also covered.

Career opportunities

Power stations, electricity and power companies, component manufacturers and electronics industry.

Process Engineering major

This major prepares students for a career as an engineering officer in the gas, minerals and manufacturing industries. Students learn to apply practical analysis and technical principles to the areas of fluid mechanics, thermodynamics, sensors, actuation, instrumentation, computer control systems, and graphical user interfaces.

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Specification, design, analysis and operation of processing equipment and systems are covered. Students in this major may specialise in instrumentation and control, machine systems or process plant technology.

Career opportunities

Process engineering officer in the gas, mineral, manufacturing, instrumentation and control, agricultural and food industries.

Professional accreditation

All majors (except Process Engineering) in this program have received provisional accreditation from Engineers Australia. Provisional accreditation for the Process Engineering major will be sought during 2012. Graduates of provisionally accredited majors in this program are eligible to apply for graduate membership of Engineers Australia as an Engineering Associate (Officer). After further professional development, a graduate member with an Associate Degree may apply for chartered status as an Engineering Officer and, when granted, may use the post-nominal OMIEAust CEngO.

Program aims

The Associate Degree of Engineering is a tertiary level program designed to educate engineering associates in the theory, methods and practices necessary to support professional engineers. To this end, the program is designed to provide a general understanding of a broad field of knowledge, with Electives available in most majors in the final stages of the program to allow a measure of specialisation.

Program objectives

Graduates of the program should be able to demonstrate:

- a knowledge of a branch of engineering practice, appropriate to those functioning at engineering associate level in that branch of the engineering work force
- the ability to analyse and propose solutions to technical problems in accordance with established practices and precedents
- the potential to assume technical responsibility for the completion of tasks and provide a support function for engineers
- an awareness of their limitations and a willingness to seek advice and accept direction from senior engineering associates, engineering technologists and professional engineers
- an ability to communicate effectively both orally and in writing
- a capacity to adapt to changing circumstances and to master new techniques
- appropriate administrative and manual skills
- an aptitude to undertake further learning and study.

Admission requirements

Applicants shall normally:

- have studied four semester units and achieved an exit assessment of 'Sound Achievement' or better in the Queensland Senior Secondary School subject: English. It is recommended that applicants should also have satisfactorily completed the subject: Mathematics B (Mathematics A is assumed)

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
- **International applicants:** must have met the University's English language requirements or have completed the University's ELICOS/EAP programs.

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How to apply

Domestic students

Application for undergraduate programs may be made through the Queensland Tertiary Admissions Centre (QTAC). The same procedure applies whether you plan to study on-campus or by distance education.

If you completed Year 12 at a Queensland secondary school you will be assessed for entry on the basis of your Overall Position (OP) or equivalent score. Year 12 students from other states or territories are considered for entry on the basis of their UAI, ENTER or TER and the subject prerequisites indicated. Other applicants will be based on their overall Rank.

International students

This program is offered to international students. An international student is a person who is not an Australian or New Zealand citizen and not an Australian permanent resident. Please refer to USQ International for information about entry requirements, visa arrangements and how to apply.

Program fees

Commonwealth supported place

A Commonwealth supported place is where the Australian Government makes a contribution towards the cost of your higher education and you as a student pay a student contribution amount, which varies depending on the courses undertaken. You 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. You are able to calculate the fees for a particular course via the Course Fee Finder.
Permanent Humanitarian Visa holders, Permanent Resident visa holders and New Zealand citizens who reside outside Australia pay full tuition fees.
Domestic full fee paying students may be eligible to defer their fees through a Government loan called 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. You are able to calculate the fees for a particular course via the Course Fee Finder.

Program structure

The Associate Degree of Engineering program consists of core, major study and in most majors Elective components. Students enrolled in the Associate Degree of Engineering program may undertake a specialisation in one of seven major discipline areas:

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

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The Associate Degree of Engineering program consists of 16 Academic courses that can be completed in two years of full-time study or four years of part-time study. The program is available in on-campus and external modes of study.

Full-time, on-campus students may, with the permission of the appropriate Program Coordinator, undertake courses by external study. This may be desirable if students wish to extend the range of courses open to them in the Elective areas.

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

Elective Courses

Elective courses are included in the list of Academic courses. Students should select these courses from the Electives list.

Required time limits

Full-time students have a maximum of four years to complete this program. Part-time students have a maximum of eight 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 Associate Degree of Engineering, students must obtain an aggregate of at least 30 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 ENG2909 Work Experience - Associate 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 Head of Discipline upon request. The acceptability or otherwise of employment experience, and the period of that type of experience that may be credited towards the 30 days, will be determined by the Examiner of ENG2909 Work Experience - Associate.

IT requirements

Students should refer to the section entitled Access to Information Technology Facilities in the General Faculty and Program Information section of this Handbook.

Residential schools

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).

Practice Courses

The major practical work requirements associated with each of the Faculty's programs are contained within a series of Practice courses. These courses are designed to enhance learning, communication and practical skills through laboratory sessions, workshops, seminars, field trips and group activities.

Practice courses may be undertaken in either on-campus or external mode. Students enrolling externally will be required to attend a **compulsory** residential school where compulsory attendance is indicated. However, students who enrol in Practice courses in on-campus mode may be required to undertake a series of weekly activities and/or attend a compulsory residential school. The only final grades available in these courses are Pass (P) or Fail (F).

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Practice courses are **zero** unit courses that 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. External students should ensure that they are able to attend the residential school prior to enrolling in a Practice course. The recommended enrolment pattern for Practice courses is shown in the Recommended Enrolment Pattern in each program entry 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.

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 work force. Students who have a trade certificate and have been employed in the engineering industry for some time may be able to claim exemption from the course.

Articulation

Students who have completed an associate diploma or an associate degree program in engineering at a Queensland university within the last five years are eligible 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.

Exit points

Students who, for whatever reason, are unable to complete the Associate Degree of Engineering, and who satisfy all of the requirements of the Diploma of Engineering Studies may be permitted to exit with that award.

Other information

The Head of Discipline, 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 synopses section of this Handbook to ascertain if a course is offered in another term.

Engineering Pathways

A special Pathway has been developed for students who intend to study the Bachelor of Engineering Technology or the Bachelor of Engineering once they have completed the Associate Degree of Engineering program. Pathway to the Bachelor of Engineering Technology or the Bachelor of Engineering maximises the advanced standing (exemptions) students will receive in these programs. A Pathway to theBachelor of Engineering Technology or the Bachelor of Engineering has been developed for each of the following Associate Degree of Engineering majors into the equivalent major:

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

Pathway to the Bachelor of Engineering Technology or the Bachelor of Engineering 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 Technology or the Bachelor of Engineering, but it is not timetabled for on-campus students.

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Students must have the approval of their Head of Discipline to undertake the Pathway to the Bachelor of Engineering Technology or the Bachelor of Engineering. 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 Technology or the Bachelor of Engineering. This should be done prior to the commencement of the second year of studies if possible.

The Head of Discipline will also consider a student's GPA before granting approval.

Once approval is granted, their Head of Discipline will advise them of the courses they should study when granting approval for them to follow the Pathway to the Bachelor of Engineering Technology or the Bachelor of Engineering.

Agricultural Engineering Major recommended enrolment pattern

Agricultural Engineering Pathway

It is recommended that students wishing to continue into the Bachelor of Engineering Technology (Agricultural Engineering) or Bachelor of Engineering (Agricultural Engineering) programs using a Pathway should have completed at least eight courses, including MAT1500 Engineering Mathematics 1, with a GPA greater than 5. Pathway students should enrol in ENG2002 Technology, Sustainability and Society and MEC2402 Stress Analysis as electives.

Major study: Agricultural Engineering (Major Study Code: 16245)									
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements	Comments
	On-campus (ONC)		External (EXT)		Online (WEB)				
	Year	Sem	Year	Sem	Year	Sem			
Academic Courses									
ENG1002 Introduction to Engineering and Spatial Science Applications	1	1	1	1,2					
ENG1500 Engineering Fundamentals*	1	1	1	1					
ENG1100 Introduction to Engineering Design	1	2	1	1,2					
ENG1101 Introduction to Engineering Problem Solving	1	1	2	1,2					
CIV1501 Engineering Statics	1	2	1	2,3				Pre-requisite: ENG1500 or MAT1500 or Students must be enrolled in the following Pro gram: MEPR	
MEC1201 Engineering Materials	1	1	2	1,2					
ENG2102 Engineering Problem Solving and Analysis	1	2	2	2				Pre-requisite: ENG1101	
SVY1500 Spatial Science for Engineers	1	2	2	2					
AGR2302 Agricultural Machinery	2	1	3	1					
ENV2103 Hydraulics I	2	1	3	1				Pre-requisite: CIV1501	
Elective (Select from the Electives list)	2	1	4	1					
Elective (Select from the Electives list)	2	1	4	1					
AGR2301 Agricultural Science	2	2	3	2					
CIV2403 Geology and Geomechanics	2	2	3	2				Pre-requisite: CIV1501	
ENV3105 Hydrology	2	2	4	2				Pre-requisite: ENG2102 or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or	

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Major study: Agricultural Engineering (Major Study Code: 16245)									
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements	Comments
	On-campus (ONC)		External (EXT)		Online (WEB)				
	Year	Sem	Year	Sem	Year	Sem			
								MEPR or GCNS or PGCN or GDNS or MENS	
Elective (Select from the Electives list)	2	2	4	2					
Practice Courses									
ENG1901 Engineering Practice 1	1	1	2	2,3			C		
CIV2901 Geology and Geomechanics Practice	2	2	2	2,3			C		
ENV2902 Hydraulics Practice	2	2	3	2,3			C	Pre-requisite: ENV2103 or EN V1101	
AGR2902 Field Practice	2		3	3			C		
ENG2911 AD Capstone Project	2	2	4	2					No attendance required
ENG2909 Work Experience - Associate	2		4	1,2					No attendance required
Elective Courses (Select from the following)									
Any Approved Bachelor of Engineering Technology(Agricultural) course									
AGR3304 Soil Science		1		1					
AGR3305 Precision and Smart Technologies in Agriculture		1		1					
ENG2002 Technology, Sustainability and Society		1,2		2,3					
MAT1500 Engineering Mathematics 1		1		1					
MAT1502 Engineering Mathematics 2		1,2		1,2				Pre-requisite: Only S tudents enrolled in Program BENG must have done MAT1500 or MAT1100	
MEC2402 Stress Analysis		1		1				Pre-requisite: CIV1501 or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS	
ENV2201 Land Studies		1		1					
AGR3303 Agricultural Materials and Post-Harvest Technologies		1		1					

Footnotes

* Students who achieve a high level in Year 12 Mathematics, or an equivalent mathematics program, may be eligible to replace the study of ENG1500 Engineering Fundamentals with MAT1500 Engineering Mathematics 1. Please refer to the notes in the General Information — Undergraduate Program Section of the Faculty's entry in this Handbook.

Civil Engineering Major recommended enrolment pattern (Toowoomba Campus)

Civil Engineering Pathway

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It is recommended that students wishing to continue into either the Bachelor of Engineering Technology (Civil Engineering) or Bachelor of Engineering (Civil Engineering) programs using a Pathway should have completed at least eight courses, including MAT1500 Engineering Mathematics 1, with a GPA greater than 5. Pathway students should enrol in CIV3703 Transport Engineering instead of CIV2702 Municipal Services and enrol in ENG2002 Technology, Sustainability and Society as an elective.

Major study: Civil Engineering (Major Study Code: 15433)									
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements	Comments
	On-campus (ONC)		External (EXT)		Online (WEB)				
	Year	Sem	Year	Sem	Year	Sem			
Academic Courses									
ENG1002 Introduction to Engineering and Spatial Science Applications	1	1	1	1,2					
ENG1500 Engineering Fundamentals*	1	1	1	1					
ENG1100 Introduction to Engineering Design	1	2	1	1,2					
CIV1501 Engineering Statics	1	2	1	2,3				Pre-requisite: ENG1500 or MAT1500 or Students must be enrolled in the following Pro gram: MEPR	
ENG1101 Introduction to Engineering Problem Solving	1	1	2	1,2					
MEC1201 Engineering Materials	1	1	2	1,2					
ENG2102 Engineering Problem Solving and Analysis	1	2	2	2				Pre-requisite: ENG1101	
SVY1500 Spatial Science for Engineers	1	2	2	2					
Elective (Select from the Electives list)	2	1	3	1					
ENV2103 Hydraulics I	2	1	3	1				Pre-requisite: CIV1501	
CIV2701 Road Design and Location	2	1	4	1				Pre-requisite: MAT1500 or ENG1500 or Students must be enrolled in one of the following Programs: GCST or GDGS	
CIV2605 Construction Engineering	2	1	4	1					
CIV2403 Geology and Geomechanics	2	2	3	2				Pre-requisite: CIV1501	
CIV2502 Structural and Building Technology	2	2	3	2					
CIV2702 Municipal Services	2	2	4	2				Pre-requisite: ENV2103 or EN V1101	
CMG2001 Job Organisation	2	2	4	2					
Practice Courses									
ENG1901 Engineering Practice 1^^	1	1	2	2,3			C		
CIV2901 Geology and Geomechanics Practice	2	2	2	2,3			C		
ENV2902 Hydraulics Practice	2	2	3	2,3			C	Pre-requisite: ENV2103 or EN V1101	
CIV3906 Civil Materials Practice	2	1	4	3			C		
ENG2911 AD Capstone Project	2	2	4	2					No attendance required

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Major study: Civil Engineering (Major Study Code: 15433)									
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements	Comments
	On-campus (ONC)		External (EXT)		Online (WEB)				
	Year	Sem	Year	Sem	Year	Sem			
ENG2909 Work Experience - Associate	2		4	1,2					No attendance required
Electives (Select from the following)									
ENG2002 Technology, Sustainability and Society		1,2		2,3					
CIV3603 Construction Methods				2					
CIV3703 Transport Engineering		2		2					
ENG4004 Engineering Project and Operations Management		2		2,3					
ENV2201 Land Studies		1		1					
ENV4204 Environmental Technology		1		1				Pre-requisite: MAT1100 or MAT1500 or Students must be enrolled in one of the following programs: GCEN or GDET or METC or MENS or GCNS or GDNS or MSST	
GIS1402 Geographic Information Systems		1		1					
MAT1500 Engineering Mathematics 1		1		1					
MAT1502 Engineering Mathematics 2		1,2		1,2				Pre-requisite: Only S tudents enrolled in Program BENG must have done MAT1500 or MAT1100	
REN1201 Environmental Studies		1		1					
SVY3201 Sustainable Urban Design and Development		2		2					
ENV3105 Hydrology		2		2				Pre-requisite: ENG2102 or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or PGCN or GDNS or MENS	

Footnotes

* Students who achieve a high level in Year 12 Mathematics, or an equivalent mathematics program, may be eligible to replace the study of ENG1500 Engineering Fundamentals with MAT1500 Engineering Mathematics 1. Please refer to the notes in the General Information — Undergraduate Program Section of the Faculty's entry in this Handbook.

^^ 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 work force. Students who have a trade certificate and have been employed in the engineering industry for some time may be able to claim exemption from the course.

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Civil Engineering Major recommended enrolment pattern (Springfield Campus)

Springfield on-campus students may be required to attend practical sessions at off-campus locations or on-campus in Toowoomba. Transportation is available from Springfield to the location of the practice course.

Major study: Civil Engineering (Major Study Code: 15433)									
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements	Comments
	On-campus (ONC)		External (EXT)		Online (WEB)				
	Year	Sem	Year	Sem	Year	Sem			
Academic Courses									
ENG1002 Introduction to Engineering and Spatial Science Applications	1	1							
ENG1500 Engineering Fundamentals*	1	1							
ENG1100 Introduction to Engineering Design	1	2							
CIV1501 Engineering Statics	1	2						Pre-requisite: ENG1500 or MAT1500 or Students must be enrolled in the following Pro gram: MEPR	
ENG1101 Introduction to Engineering Problem Solving	1	1							
MEC1201 Engineering Materials	1	1							
ENG2102 Engineering Problem Solving and Analysis	1	2						Pre-requisite: ENG1101	
SVY1500 Spatial Science for Engineers	1	2							
Elective (Select from the Electives list)	2	1							
ENV2103 Hydraulics I	2	1						Pre-requisite: CIV1501	
CIV2403 Geology and Geomechanics	2	2						Pre-requisite: CIV1501	
CIV2502 Structural and Building Technology	2	2							
CIV2701 Road Design and Location	2	1						Pre-requisite: MAT1500 or ENG1500 or Students must be enrolled in one of the following Programs: GCST or GDGS	
CIV2605 Construction Engineering	2	1							
CIV2702 Municipal Services	2	2						Pre-requisite: ENV2103 or EN V1101	
CMG2001 Job Organisation	2	2							
Practice Courses									
ENG1901 Engineering Practice 1^^	1	1					C		
CIV2901 Geology and Geomechanics Practice	2	2					C		
ENV2902 Hydraulics Practice	2	2		2,3			C	Pre-requisite: ENV2103 or EN V1101	
CIV3906 Civil Materials Practice	2	1					C		
ENG2911 AD Capstone Project	2	2	4	2					No attendance required

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Major study: Civil Engineering (Major Study Code: 15433)									
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements	Comments
	On-campus (ONC)		External (EXT)		Online (WEB)				
	Year	Sem	Year	Sem	Year	Sem			
ENG2909 Work Experience - Associate	2		4	1,2					No attendance required
Electives (Select from the following)									
ENG2002 Technology, Sustainability and Society		2		2,3					
CIV3603 Construction Methods				2					
CIV3703 Transport Engineering				2					
ENG4004 Engineering Project and Operations Management				2,3					
ENV2201 Land Studies				1					
ENV4204 Environmental Technology				1				Pre-requisite: MAT1100 or MAT1500 or Students must be enrolled in one of the following programs: GCEN or GDET or METC or MENS or GCNS or GDNS or MSST	
GIS1402 Geographic Information Systems		1		1					
MAT1500 Engineering Mathematics 1				1					
MAT1502 Engineering Mathematics 2				1,2				Pre-requisite: Only S tudents enrolled in Program BENG must have done MAT1500 or MAT1100	
REN1201 Environmental Studies				1					
SVY3201 Sustainable Urban Design and Development				2					
ENV3105 Hydrology		2		2				Pre-requisite: ENG2102 or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or PGCN or GDNS or MENS	

Footnotes

* Students who achieve a high level in Year 12 Mathematics, or an equivalent mathematics program, may be eligible to replace the study of ENG1500 Engineering Fundamentals with MAT1500 Engineering Mathematics 1. Please refer to the notes in the General Information — Undergraduate Program Section of the Faculty's entry in this Handbook.

^^ 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 work force. Students who have a trade certificate and have been employed in the engineering industry for some time may be able to claim exemption from the course.

Computer Systems Engineering Major recommended enrolment pattern

On entering the Associate Degree of Engineering (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

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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.

Students who are enrolled in the Computer Systems Engineering major and the Electrical and Electronic Engineering major and who have been granted an exemption in the course ELE1801 Electrical Technology are strongly advised to purchase the ELE1801 Electrical Technology study materials from the USQ Bookshop and work through these to refresh their knowledge.

Computer Systems Engineering Pathway

It is recommended that students wishing to continue into either the (Computer Systems Engineering) or (Computer Systems Engineering) programs using a Pathway should have completed at least eight courses, including MAT1500 Engineering Mathematics 1, in lieu of ENG1500 Engineering Fundamentals, with a GPA greater than 5. Pathway students should seek advice the program co-ordinator before selecting their electives.

Major study: Computer Systems Engineering (Major Study Code: 15434)									
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements	Comments
	On-campus (ONC)		External (EXT)		Online (WEB)				
	Year	Sem	Year	Sem	Year	Sem			
Academic Courses									
CSC1401 Foundation Programming	1	1	1	1,2					
ENG1101 Introduction to Engineering Problem Solving	1	1	2	1,2					
ENG1500 Engineering Fundamentals*	1	1	1	1					
ELE1301 Computer Engineering	1	1	2	1					
ENG2102 Engineering Problem Solving and Analysis	1	2	2	2				Pre-requisite: ENG1101	
ELE1502 Electronic Circuits	1	2	2	2					
ELE1801 Electrical Technology	1	2	1	2				Pre-requisite: ENG1500 or MAT1500 or Students must be enrolled in the following Pro gram: MEPR	
ENG1002 Introduction to Engineering and Spatial Science Applications	1	2	1	1,2					
CSC2402 Object-Oriented Programming in C++	2	1	4	1				Pre-requisite: CSC1401 or USQIT16 or Students must be enrolled in one of the following Programs: GDTI or GCSC or GDGS or GCEN or GDET or METC or MCOT or MCTE or MCOP or MPIT or MSBN or MSMS	
Elective (Select from the Electives list)	2	2	3	1,2					
MAT1101 Discrete Mathematics for Computing	2	1	4	1					
ELE2303 Embedded Systems Design	2	1	3	1					
ELE2501 Electronic Workshop and Production	2	2	3	2				Pre-requisite: ELE1801 and ELE1502	
ELE2101 Control and Instrumentation	2	2	3	2				Pre-requisite: ENG1500 or MAT1500 or Students must be enrolled in	

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Major study: Computer Systems Engineering (Major Study Code: 15434)									
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements	Comments
	On-campus (ONC)		External (EXT)		Online (WEB)				
	Year	Sem	Year	Sem	Year	Sem			
								the following Pro gram: MEPR	
Elective (Select from the Electives list)	2	2	4	2					
ENG1100 Introduction to Engineering Design	2	1	4	1,2					
Practice Courses									
ENG1901 Engineering Practice 1	1	1	2	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: ELE1801 and ELE1301 and ELE1502	
ENG2911 AD Capstone Project	2	2	4	2					No attendance required
ENG2909 Work Experience - Associate	2		4	1,2					No attendance required
Electives (Select from the following)									
CSC2401 Algorithms and Data Structures		2		1,2				Pre-requisite: (CSC1401 or CSC2402) or USQIT16 or Students must be enrolled in one of the following Programs: GDTI or GCSC or GDGS or GCEN or GDET or METC or MCOT or MCTE or MCOP or MPIT or MSBN or MSMS	
ELE3305 Computer Systems and Communications Protocols		1		1					
CSC2408 Software Development Tools		1,2		2,3					
ELE2601 Telecommunications Principles		1		1				Pre-requisite: (ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GCEN or GDET or METC	
ENG2002 Technology, Sustainability and Society		1,2		2,3					
ENG3003 Engineering Management		1		1					
CSC2404 Operating Systems		2		2				Pre-requisite: CSC1401 or USQIT16 or Students must be enrolled in one of the following Programs: GDTI or GCSC or GDGS or	

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Major study: Computer Systems Engineering (Major Study Code: 15434)									
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements	Comments
	On-campus (ONC)		External (EXT)		Online (WEB)				
	Year	Sem	Year	Sem	Year	Sem			
								GCEN or GDET or METC or MCOT or MCTE or MCOP or MPIT or MSBN or MSMS	
ELE2503 Electronic Systems		2		2				Pre-requisite: ELE1502	
ELE3307 Real Time Systems		2		2				Pre-requisite: ELE1301 or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MENS	

Footnotes

* Students who achieve a high level in Year 12 Mathematics, or an equivalent mathematics program, may be eligible to replace the study of ENG1500 Engineering Fundamentals with MAT1500 Engineering Mathematics 1. Please refer to the notes in the General Information — Undergraduate Program Section of the Faculty's entry in this Handbook.

\# If desired, attendance at the Practice course ELE1911 Electrical and Electronic Practice A may be delayed by one year.

Electrical and Electronic Engineering Major recommended enrolment pattern

On entering the Associate Degree of Engineering (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. For external students in the course ELE2702 Electrical Measurement and Analysis, access to a multimeter and hook-up wire is 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 Electrical Technology study materials from the USQ Bookshop and work through these prior to attempting ELE2702 or ELE3803 Electrical Plant.

Electrical and Electronic Engineering Pathway

It is recommended that students wishing to continue into either the (Electrical & Electronic Engineering) or (Electrical & Electronic Engineering) programs using a Pathway should have completed at least eight courses, including MAT1500 Engineering Mathematics 1, in lieu of ENG1500 Engineering Fundamentals, with a GPA >5. Pathway students should seek advice the program co-ordinator before selecting their electives.

Major study: Electrical and Electronic Engineering (Major Study Code: 15435)									
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements	Comments
	On-campus (ONC)		External (EXT)		Online (WEB)				
	Year	Sem	Year	Sem	Year	Sem			
Academic Courses									
MEC1201 Engineering Materials	1	1	1	1,2					
ENG1101 Introduction to Engineering Problem Solving	1	1	2	1,2					
ENG1500 Engineering Fundamentals*	1	1	1	1					
ELE1301 Computer Engineering	1	1	2	1					

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Major study: Electrical and Electronic Engineering (Major Study Code: 15435)									
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements	Comments
	On-campus (ONC)		External (EXT)		Online (WEB)				
	Year	Sem	Year	Sem	Year	Sem			
ENG1002 Introduction to Engineering and Spatial Science Applications	1	2	1	1,2					
ENG2102 Engineering Problem Solving and Analysis	1	2	2	2				Pre-requisite: ENG1101	
ELE1502 Electronic Circuits	1	2	2	2					
ELE1801 Electrical Technology	1	2	1	2				Pre-requisite: ENG1500 or MAT1500 or Students must be enrolled in the following Pro gram: MEPR	
ENG1100 Introduction to Engineering Design	2	1	3	1,2					
ELE2702 Electrical Measurement and Analysis	2	1	4	1				Pre-requisite: (ENG1500 or MAT1500) and ELE1801	
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 GDET or METC	
Elective (Select from the Electives list)	2	1	3	1					
ELE2501 Electronic Workshop and Production	2	2	3	2				Pre-requisite: ELE1801 and ELE1502	
Elective (Select from the Electives list)	2	2	4	2					
ELE2503 Electronic Systems	2	2	4	2				Pre-requisite: ELE1502	
ELE2101 Control and Instrumentation	2	2	3	2				Pre-requisite: ENG1500 or MAT1500 or Students must be enrolled in the following Pro gram: MEPR	
Practice Courses									
ENG1901 Engineering Practice 1	1	1	2	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: ELE1801 and ELE1301 and ELE1502	
ELE2913 Electrical and Electronic Practice C	2	2	4	2			C		
ENG2911 AD Capstone Project	2	2	4	2					No attendance required
ENG2909 Work Experience - Associate	2		4	1,2					No attendance required

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Major study: Electrical and Electronic Engineering (Major Study Code: 15435)									
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements	Comments
	On-campus (ONC)		External (EXT)		Online (WEB)				
	Year	Sem	Year	Sem	Year	Sem			
Electives (Select from the following)									
ELE3803 Electrical Plant		1		1				Pre-requisite: ELE1801 or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS	
ELE3506 Electronic Measurement		2		2				Pre-requisite: (ELE1502 and (ELE2101 or ELE2103) and (ELE2503 or ELE2504)) or Stu dents must be en rolled in one of the following Programs: GCEN or GDET or METC or MEPR or MENS	
ELE3805 Power Electronics Principles and Applications		2		2				Pre-requisite: (ELE1502 and ELE1801) or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS	
ELE2303 Embedded Systems Design		1		1					
ENG3003 Engineering Management		1		1					
ELE2704 Electricity Supply Systems		2		2					
ENG2002 Technology, Sustainability and Society		1,2		2,3					

Footnotes

* Students who achieve a high level in Year 12 Mathematics, or an equivalent mathematics program, may be eligible to replace the study of ENG1500 Engineering Fundamentals with MAT1500 Engineering Mathematics 1. Please refer to the notes in the General Information — Undergraduate Program Section of the Faculty's entry in this Handbook.

\# If desired, attendance at the Practice course ELE1911 Electrical and Electronic Practice A may be delayed by one year.

Environmental Engineering Major recommended enrolment pattern

Environmental Engineering Pathway

It is recommended that students wishing to continue into either the Bachelor of Engineering Technology (Environmental Engineering) or Bachelor of Engineering (Environmental Engineering) programs using a Pathway should have completed at least eight courses, including MAT1500 Engineering Mathematics 1, with

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a GPA greater than 5. Pathway students should enrol in ENG2002 Technology, Sustainability and Society as an elective.

Major study: Environmental Engineering (Major Study Code: 15436)									
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements	Comments
	On-campus (ONC)		External (EXT)		Online (WEB)				
	Year	Sem	Year	Sem	Year	Sem			
Academic Courses									
ENG1002 Introduction to Engineering and Spatial Science Applications	1	1	1	1,2					
ENG1500 Engineering Fundamentals*	1	1	1	1					
ENG1100 Introduction to Engineering Design	1	2	1	1,2					
ENG1101 Introduction to Engineering Problem Solving	1	1	2	1,2					
CIV1501 Engineering Statics	1	2	1	2,3				Pre-requisite: ENG1500 or MAT1500 or Students must be enrolled in the following Pro gram: MEPR	
MEC1201 Engineering Materials	1	1	2	1,2					
ENG2102 Engineering Problem Solving and Analysis	1	2	2	2				Pre-requisite: ENG1101	
SVY1500 Spatial Science for Engineers	1	2	2	2					
Elective (Select from the Electives list)	2	1	3	1					
REN1201 Environmental Studies	2	1	3	1					
ENV2103 Hydraulics I	2	1	4	1				Pre-requisite: CIV1501	
ENV2201 Land Studies	2	1	4	1					
CIV2403 Geology and Geomechanics	2	2	3	2				Pre-requisite: CIV1501	
AGR2301 Agricultural Science	2	2	3	2					
ENV3105 Hydrology	2	2	4	2				Pre-requisite: ENG2102 or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or PGCN or GDNS or MENS	
Elective (Select from the Electives list)	2	2	4	2					
Practice Courses									
ENG1901 Engineering Practice 1	1	1	2	2,3			C		
CIV2901 Geology and Geomechanics Practice	2	2	2	2,3			C		
ENV2902 Hydraulics Practice	2	2	4	2,3			C	Pre-requisite: ENV2103 or EN V1101	
AGR2902 Field Practice	2		3	3			C		
ENG2911 AD Capstone Project	2	2	4	2					No attendance required
ENG2909 Work Experience - Associate	2		4	1,2					No attendance required

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Major study: Environmental Engineering (Major Study Code: 15436)									
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements	Comments
	On-campus (ONC)		External (EXT)		Online (WEB)				
	Year	Sem	Year	Sem	Year	Sem			
Electives (Select from the following)									
Any Bachelor of Engineering Technology (Environment) course OR									
CIV2702 Municipal Services		2		2				Pre-requisite: ENV2103 or EN V1101	
ENG2002 Technology, Sustainability and Society		1,2		2,3					
MAT1500 Engineering Mathematics 1		1		1					
MAT1502 Engineering Mathematics 2		1,2		1,2				Pre-requisite: Only S tudents enrolled in Program BENG must have done MAT1500 or MAT1100	
SVY3201 Sustainable Urban Design and Development		2		2					
SVY3202 Photogrammetry and Remote Sensing		1		1					

Footnotes

* Students who achieve a high level in Year 12 Mathematics, or an equivalent mathematics program, may be eligible to replace the study of ENG1500 Engineering Fundamentals with MAT1500 Engineering Mathematics 1. Please refer to the notes in the General Information — Undergraduate Program Section of the Faculty's entry in this Handbook.

Mechanical Engineering Major recommended enrolment pattern

Mechanical Engineering Pathway

It is recommended that students wishing to continue into either the Bachelor of Engineering Technology (Mechanical Engineering) or Bachelor of Engineering (Mechanical Engineering) programs using a Pathway should have completed at least eight courses, with a GPA greater than 5. Pathway students should enrol in MEC2304 Solid Modelling and MEC3204 Production Engineering as electives.

Major study: Mechanical Engineering (Major Study Code: 15437)									
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements	Comments
	On-campus (ONC)		External (EXT)		Online (WEB)				
	Year	Sem	Year	Sem	Year	Sem			
Academic Courses									
ENG1002 Introduction to Engineering and Spatial Science Applications	1	1	1	1,2					
ENG1101 Introduction to Engineering Problem Solving	1	1	1	1,2					
MEC1201 Engineering Materials	1	2	1	1,2					
ENG1500 Engineering Fundamentals*	1	1	2	1					
ENG2102 Engineering Problem Solving and Analysis	1	2	1	2				Pre-requisite: ENG1101	
ENG1100 Introduction to Engineering Design	1	1	2	1,2					
CIV1501 Engineering Statics	1	2	2	2,3				Pre-requisite: ENG1500 or MAT1500 or Students must be enrolled in the following Pro gram: MEPR	

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Major study: Mechanical Engineering (Major Study Code: 15437)									
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements	Comments
	On-campus (ONC)		External (EXT)		Online (WEB)				
	Year	Sem	Year	Sem	Year	Sem			
Elective (Select from the Electives list)#	1	2	2	2					
MAT1500 Engineering Mathematics 1	2	1	3	1					
MEC2202 Manufacturing Processes	2	1	3	1				Pre-requisite: MEC1201 or Students must be enrolled in one of the following Programs: MEPR	
MEC2106 Introduction to Thermo-Fluids	2	2	3	2				Pre-requisite: MAT1500 and CIV1501	
ELE1801 Electrical Technology	2	2	3	2				Pre-requisite: ENG1500 or MAT1500 or Students must be enrolled in the following Pro gram: MEPR	
MEC2402 Stress Analysis	2	1	4	1				Pre-requisite: CIV1501 or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS	
MEC2405 Machine Dynamics	2	1	4	1				Pre-requisite: CIV1501	
MEC2301 Design of Machine Elements	2	2	4	2				Pre-requisite: MEC2402 or Students must be enrolled in the following Pro gram: MEPR	
Elective (Select from the Electives list)	2	2	4	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	2			C		
MEC3903 Mechanical Practice 3	2	2	4	2			C		
ENG2911 AD Capstone Project	2	2	4	2					No attendance required
ENG2909 Work Experience - Associate	2		4	1,2					No attendance required
Electives (Select from the following)									
Any Bachelor of Engineering Technology (Mechanical) course OR									
MEC2304 Solid Modelling		2		2					
MEC3204 Production Engineering		2		2					
MEC2101 Thermodynamics		1		1					
MAT1502 Engineering Mathematics 2		1,2		1,2				Pre-requisite: Only S tudents enrolled in Program BENG must	

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Major study: Mechanical Engineering (Major Study Code: 15437)									
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements	Comments
	On-campus (ONC)		External (EXT)		Online (WEB)				
	Year	Sem	Year	Sem	Year	Sem			
								have done MAT1500 or MAT1100	
CIV2503 Structural Design I		2		2				Pre-requisite: (ENG1100 and MEC2402) or (ENG1100 and CIV1501 for students enrolled in BETC In frastructure Manage ment)	
CIV2502 Structural and Building Technology		2		2					
AGR2302 Agricultural Machinery	2	2	3	2					

Footnotes

* Students who achieve a high level in Year 12 Mathematics, or an equivalent mathematics program, may be eligible to replace the study of ENG1500 Engineering Fundamentals with MAT1500 Engineering Mathematics 1 and consequently the study of MAT1500 Engineering Mathematics 1 with MEC2101 Thermodynamics to align with the Recommended Enrolment Pattern for the BETC Bachelor of Engineering Technology (Mechanical) program. Please refer to the notes in the General Information — Undergraduate Program Section of the Faculty's entry in this Handbook.

\# This is a Pathway to the Bachelor of Engineering Technology course. Please refer to Other Information - Pathway to the Bachelor of Engineering Technology program at the beginning of this program section.

Power Engineering Major recommended enrolment pattern

On entering the Associate Degree of Engineering (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 Electronic Workshop and Production will be required to purchase an electronic kit. For external students in the course ELE2702 Electrical Measurement and Analysis, access to a multimeter and hook-up wire is 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 Electrical Technology study materials from the USQ Bookshop and work through these prior to attempting ELE2702 Electrical Measurement and Analysis or ELE3803 Electrical Plant.

Power Engineering Major Pathway

It is recommended that students wishing to continue into either the Bachelor of Engineering Technology (Power Engineering) or Bachelor of Engineering (Power Engineering) programs using a Pathway should have completed at least eight courses, including MAT1500 Engineering Mathematics 1, in lieu of ENG1500 Engineering Fundamentals, with a GPA >5. Pathway students should seek advice the program co-ordinator before selecting their electives.

Major study: Power Engineering (Major Study Code: 15936)									
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements	Comments
	On-campus (ONC)		External (EXT)		Online (WEB)				
	Year	Sem	Year	Sem	Year	Sem			
Academic Courses									
MEC1201 Engineering Materials	1	1	1	1,2					
ENG1101 Introduction to Engineering Problem Solving	1	1	2	1,2					

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Major study: Power Engineering (Major Study Code: 15936)									
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements	Comments
	On-campus (ONC)		External (EXT)		Online (WEB)				
	Year	Sem	Year	Sem	Year	Sem			
ENG1500 Engineering Fundamentals*	1	1	1	1					
ELE1301 Computer Engineering	1	1	2	1					
ENG1002 Introduction to Engineering and Spatial Science Applications	1	2	1	1,2					
ENG2102 Engineering Problem Solving and Analysis	1	2	2	2				Pre-requisite: ENG1101	
ELE1502 Electronic Circuits	1	2	2	2					
ELE1801 Electrical Technology	1	2	1	2				Pre-requisite: ENG1500 or MAT1500 or Students must be enrolled in the following Pro gram: MEPR	
ENG1100 Introduction to Engineering Design	2	1	3	1,2					
ELE2702 Electrical Measurement and Analysis	2	1	3	1				Pre-requisite: (ENG1500 or MAT1500) and ELE1801	
Elective (Select from the Electives list)	2	1	4	1					
Elective (Select from the Electives list)	2	1	4	1					
ELE2501 Electronic Workshop and Production	2	2	3	2				Pre-requisite: ELE1801 and ELE1502	
Elective (Select from the Electives list)	2	2	4	2					
ELE2503 Electronic Systems	2	2	4	2				Pre-requisite: ELE1502	
ELE2101 Control and Instrumentation	2	2	3	2				Pre-requisite: ENG1500 or MAT1500 or Students must be enrolled in the following Pro gram: MEPR	
Practice Courses									
ENG1901 Engineering Practice 1	1	1	2	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: ELE1801 and ELE1301 and ELE1502	
ELE2913 Electrical and Electronic Practice C	2	2	4	2			C		
ENG2911 AD Capstone Project	2	2	4	2					No attendance required
ENG2909 Work Experience - Associate	2		4	1,2					No attendance required
Electives (Select from the following)									
CIV1501 Engineering Statics		2		2,3				Pre-requisite: ENG1500 or	

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Major study: Power Engineering (Major Study Code: 15936)									
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements	Comments
	On-campus (ONC)		External (EXT)		Online (WEB)				
	Year	Sem	Year	Sem	Year	Sem			
								MAT1500 or Students must be enrolled in the following Pro gram: MEPR	
CIV2605 Construction Engineering		1		1					
CIV2403 Geology and Geomechanics		2		2				Pre-requisite: CIV1501	
GIS1401 Geographic Data Presentation		1		1					
GIS1402 Geographic Information Systems		1		1					
SVY1110 Introduction to Global Positioning System		2		2					
ELE2303 Embedded Systems Design		1		1					
ELE2704 Electricity Supply Systems		2		2					
ELE3803 Electrical Plant		1		1				Pre-requisite: ELE1801 or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS	

Footnotes

* Students who achieve a high level in Year 12 Mathematics, or an equivalent mathematics program, may be eligible to replace the study of ENG1500 Engineering Fundamentals with MAT1500 Engineering Mathematics 1. Please refer to the notes in the General Information — Undergraduate Program Section of the Faculty's entry in this Handbook.

^^ If desired, attendance at the Practice course ELE1911 Electrical and Electronic Practice A may be delayed by one year.

Process Engineering Major recommended enrolment pattern

Major study: Major study: Process Engineering (Major Study Code: 16560)									
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements	Comments
	On-campus (ONC)		External (EXT)		Online (WEB)				
	Year	Sem	Year	Sem	Year	Sem			
Academic Courses									
ENG1002 Introduction to Engineering and Spatial Science Applications	1	1,2	1	1,2					
ENG1101 Introduction to Engineering Problem Solving	1	1	1	1,2					
MEC1201 Engineering Materials	1	1,2	1	1,2					
ENG1500 Engineering Fundamentals*	1	1	2	1					
ENG2102 Engineering Problem Solving and Analysis	1	1	1	2				Pre-requisite: ENG1101	
ENG1100 Introduction to Engineering Design	1	1,2	2	1,2					
MEC1501 Introduction to Process Engineering	1	2	2	2					
CIV1501 Engineering Statics	1	2	2	2,3				Pre-requisite: ENG1500 or MAT1500 or Students must be enrolled in the following Pro gram: MEPR	

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Major study: Major study: Process Engineering (Major Study Code: 16560)									
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements	Comments
	On-campus (ONC)		External (EXT)		Online (WEB)				
	Year	Sem	Year	Sem	Year	Sem			
ELE1301 Computer Engineering	2	1	3	1					
Elective (Select from the Electives list)	2	1	3	1					
MEC2101 Thermodynamics	2	1	4	1					
Elective (Select from the Electives list)	2	1	4	1					
MEC2501 Process Engineering Systems	2	2	3	2				Pre-requisite: MEC1501	
Elective (Select from the Electives list)	2	2	3	2					
Elective (Select from the Electives list)	2	2	4	2					
Elective (Select from the Electives list)	2	2	4	2					
Practice Courses									
ENG1901 Engineering Practice 1	1	1	2	2,3			C		
MEC2901 Mechanical Practice 1	1	1	3	3			C		
ELE1911 Electrical and Electronic Practice A#	2	1	3	3			C		
ENG2911 AD Capstone Project	2	2	4	2					No attendance required
ENG2909 Work Experience - Associate	2	2	2	1,2					No attendance required
Electives									
Choose any course from this table. Students completing a Minor program of study must complete all courses under the Minor heading									
CHE1110 Chemistry 1^		1		1			C		
CHE2120 Chemistry 2^		2		2			C	Pre-requisite: CHE1110	
MAT1500 Engineering Mathematics 1		2		2					
MEC2106 Introduction to Thermo-Fluids				2				Pre-requisite: MAT1500 and CIV1501	
MEC3204 Production Engineering		2		2					
Instrumentation and Control Minor									
ELE1801 Electrical Technology		2		2				Pre-requisite: ENG1500 or MAT1500 or Students must be enrolled in the following Pro gram: MEPR	
ELE1502 Electronic Circuits		2		2					
ELE2303 Embedded Systems Design		1		1					
ELE2101 Control and Instrumentation		2		2				Pre-requisite: ENG1500 or MAT1500 or Students must be enrolled in the following Pro gram: MEPR	
Machine Systems Minor									
MEC2202 Manufacturing Processes		1		1				Pre-requisite: MEC1201 or Students	

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Major study: Major study: Process Engineering (Major Study Code: 16560)									
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements	Comments
	On-campus (ONC)		External (EXT)		Online (WEB)				
	Year	Sem	Year	Sem	Year	Sem			
								must be enrolled in one of the following Programs: MEPR	
MEC2402 Stress Analysis		1		1				Pre-requisite: CIV1501 or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS	
MEC2301 Design of Machine Elements		2		2				Pre-requisite: MEC2402 or Students must be enrolled in the following Pro gram: MEPR	
MEC2405 Machine Dynamics		1		1				Pre-requisite: CIV1501	
MEC2902 Mechanical Practice 2~		1		2			C		
Process Plant Technology Minor>									
4 CP Unspecified Block Exemption on successful completion of specified courses within PMA50108 Diploma of Process Plant Technology									Specified cours es: MSAPMOP S400A Opti mise Pro cess/Plant Area PMAOPS521C Plan Plant Shut down MSAP MOHS510A Manage Risk P MASUP540B Analyse Equip ment Perfor mance PMAOP S411B Manage Plant Shutdown and Restart P MAOPS500A Optimise pro duction systems

Footnotes

* Students who achieve a high level in Year 12 Mathematics, or an equivalent mathematics program, may be eligible to replace the study of ENG1500 Engineering Fundamentals with MAT1500 Engineering Mathematics 1. Please refer to the notes in the General Information — Undergraduate Program Section of the Faculty's entry in this Handbook.

\# If desired, attendance at the Practice Course ELE1911 Electrical and Electronic Practice A may be delayed by one year.

^ CHE110 and CHE2120 involve a compulsory residential school component

~ Zero credit point practice course. External offering involves a compulsory residential school.

> Courses within the Process Plant Technology minor are not offered by USQ but are available via TAFE Queensland and other Vocational Education and Training providers. Students undertaking this minor must complete all of the specified courses.

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