Graduate Certificate of Engineering Technology (GCEN) - GradCertEngTech

CRICOS code (International applicants): 030323K

'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 Graduate Certificate of Engineering Practice which will be offered from Semester 2, 2020.

	On-campus	External
Semester intake:	No new admissions	No new admissions
Campus:	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:	1 semester full-time or 2 semesters part-time	

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: study@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.support@usq.edu.au

Professional accreditation

The Graduate Certificate of Engineering Technology is not accredited by any professional bodies, but is accredited by the University of Southern Queensland.

Program aims

To enable students to complete a postgraduate program that will lead to an advanced level of knowledge in a specialised area of engineering.

Program objectives

Students who successfully complete the Graduate Certificate of Engineering Technology should be able to apply a body of knowledge of a specialised area of engineering at an advanced level.

Australian Qualifications Framework

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

This program is at AQF Qualification Level 08. Graduates at this level will have advanced knowledge and skills for professional or highly skilled work and/or further learning.

The full set of levels criteria and qualification type descriptors can be found by visiting www.aqf.edu.au.

Admission requirements

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

- Completion of an Australian university three year Bachelor degree in engineering, science or technology or equivalent.
- English Language Proficiency requirements for Category 3.

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 Graduate Certificate of Engineering Technology comprises four single unit academic courses as follows:

Schedule A: Two courses (two units) to be selected from the following list:

- ENG8103 Management of Technological Risk
- ENG8104 Asset Management in an Engineering Environment
- ENG8205 Project Management Practice
- ENG8208 Advanced Engineering Project Management

Schedule B: A two course specialisation (two units) to be selected from the recommended enrolment pattern.

Required time limits

Students have a maximum of 2 years to complete this program.

Specialisation

The specialisation study provides students with knowledge and skills in a specific discipline. The specialisation study areas in the Graduate Certificate of Engineering Technology are:

- Agricultural Engineering
- Civil Engineering
- Computer Systems Engineering
- Electrical and Electronic Engineering
- Environmental Engineering
- Management in Engineering
- Mechanical Engineering
- Power Systems Engineering
- Structural Engineering
- Transdisciplinary Engineering

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. Students should be able to access a computer with the following minimum standards. 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. Specialist software is required for some courses.

Credit

Exemptions/credit will be assessed based on the USQ Credit and Exemption Procedure.

Enrolment

Candidates for admission to this program should note that some of the courses specify enrolment requirements. This may mean that successful applicants will be enrolling in courses for which they do not have sufficient pre-requisite knowledge. Applicants should refer to the course specification to determine the enrolment requirements for the courses they intend enrolling in. Graduate students will be expected to rectify any deficiencies in their pre-requisite knowledge by private study, guided if necessary by the examiners of the relevant courses. Alternatively, they should enrol in the pre-requisite course(s). These courses will not contribute to the requirements for program completion.

Agricultural Engineering specialisation 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.

Specialisation: Agricultural Engineering (Specialisation Study Code: 12600)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
Schedule A: Students must complete two of the courses listed in this schedule.							
ENG8104 Asset Management in an Engineering Environment		1				1	
ENG8208 Advanced Engineering Project Management		1				1	
ENG8103 Management of Technological Risk		2				2	
ENG8205 Project Management Practice		2				2	

Specialisation: Agricultural Engineering (Specialisation Study Code: 12600)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
Schedule B: Technical courses Students must complete two of the courses listed in this schedule.							
AGR2302 Agricultural Machinery		1				1	
AGR3304 Soil Science		1				1	
MEC2402 Stress Analysis		1				1	Pre-requisite: CIV1501 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR
AGR2301 Agricultural Science		2				2	
ENV3105 Hydrology		2				2	
MEC2301 Design of Machine Elements		2				2	Pre-requisite: MEC2402 or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR

Civil Engineering specialisation 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.

Specialisation: Civil Engineering (Specialisation Study Code: 15394)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
Schedule A: Students must complete two of the courses listed in this schedule.							
ENG8104 Asset Management in an Engineering Environment		1				1	
ENG8208 Advanced Engineering Project Management		1				1	
ENG8103 Management of Technological Risk		2				2	
ENG8205 Project Management Practice		2				2	
Schedule B: Technical courses Students must complete two of the courses listed in this schedule.							
CIV2605 Construction Engineering		1				1	
CIV2701 Road Design and Location		1				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 or GEPR
ENV2103 Hydraulics I		1				1	Pre-requisite: CIV1500 or CIV1501 or Students must be enrolled in the following Program: GCEN or GEPR
CIV2502 Structural and Building Technology		2		2			
CIV2702 Municipal Services*		2				2	Pre-requisite: ENV2103 or ENV1101
CIV3603 Construction Methods						2	

Footnotes

* Only available in on-campus mode at Toowoomba in 2020.

Computer Systems Engineering specialisation 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.

Specialisation: Computer Systems Engineering (Specialisation Study Code: 17242)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
Schedule A: Students must complete two of the courses listed in this schedule.							
ENG8104 Asset Management in an Engineering Environment		1				1	
ENG8208 Advanced Engineering Project Management		1				1	
ENG8103 Management of Technological Risk		2				2	
ENG8205 Project Management Practice		2				2	
Schedule B: Technical courses Students must complete two of the courses listed in this schedule.							
ELE1301 Computer Engineering		1				1	
ELE2303 Embedded Systems Design		1				1	
ELE2601 Telecommunications Principles		1				1	Pre-requisite: (ELE1502 and ELE1801) or Students must be enrolled in one of the fol lowing Programs: GCEN or METC or GEPR
ELE2103 Linear Systems and Control		2				2	
ELE3307 Real Time Systems		2				2	Pre-requisite: ELE1301 or Students must be enrolled in one of the following Programs: GCEN or GCNS or METC or MENS or MEPR
ELE4606 Communication Systems		2				2	Pre-requisite: (ELE2504 and ELE2601) or Students must be enrolled in one of the fol lowing Programs: GCEN or METC or MEPR or MENS or GCNS or GDNS

Electrical and Electronic Engineering specialisation 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.

Specialisation: Electrical and Electronic Engineering (Specialisation Study Code: 17241)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
Schedule A: Students must complete two of the courses listed in this schedule.							
ENG8104 Asset Management in an Engineering Environment		1				1	
ENG8208 Advanced Engineering Project Management		1				1	
ENG8103 Management of Technological Risk		2				2	
ENG8205 Project Management Practice		2				2	
Schedule B: Technical courses Students must complete two of the courses listed in this schedule.							
ELE2601 Telecommunications Principles		1				1	Pre-requisite: (ELE1502 and ELE1801) or Students must be enrolled in one of the fol lowing Programs: GCEN or METC or GEPR
ELE2702 Electrical Measurement and Analysis		1				1	Pre-requisite: (ENG1500 or MAT1500 or ENM1500 or ENM1600) and ELE1801 or Students must be enrolled in the following Program: GCEN

Specialisation: Electrical and Electronic Engineering (Specialisation Study Code: 17241)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
ELE3803 Electrical Plant		1				1	Pre-requisite: ELE1801 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR
ELE1801 Electrical Technology		2				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 or GEPR
ELE2101 Control and Instrumentation		2				2	Pre-requisite: ENG1500 or MAT1500 or ENM1500 or ENM1600 or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR
ELE2501 Electronic Workshop and Production		2				2	Pre-requisite: (ELE1502 and ELE1801) or Students must be enrolled in the following Program: GCEN
ELE2503 Electronic Systems		2				2	Pre-requisite: ELE1502 or Students must be enrolled in the following Program: GCEN or GEPR

Environmental Engineering specialisation 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.

Specialisation: Environmental Engineering (Specialisation Study Code: 12601)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
Schedule A: Students must complete two of the courses listed in this schedule.							
ENG8104 Asset Management in an Engineering Environment		1				1	
ENG8208 Advanced Engineering Project Management		1				1	
ENG8103 Management of Technological Risk		2				2	
ENG8205 Project Management Practice		2				2	
Schedule B: Technical courses Students must complete two of the courses listed in this schedule.							
CLI3301 Climate and Environment Risk Assessment						1	
ENV2103 Hydraulics I		1				1	Pre-requisite: CIV1500 or CIV1501 or Students must be enrolled in the following Program: GCEN or GEPR
ENV2105 Applied Chemistry and Microbiology		1				1	
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
ENV3103 Environmental Pollution		2				2	Pre-requisite: ENV2105 and ENV2103 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR
ENV3105 Hydrology		2				2	
ENV4106 Irrigation Science		2				2	Pre-requisite: AGR3304 or Students must be enrolled in one of the following Programs:

Specialisation: Environmental Engineering (Specialisation Study Code: 12601)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
							GCEN or GCSC or GDSI or METC or MEPR or GCNS or GDNS or MENS or MSCN.

Management in Engineering specialisation 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.

Specialisation: Management in Engineering (Specialisation Study Code: 17243)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
Schedule A: Students must complete two of the courses listed in this schedule.							
ENG8104 Asset Management in an Engineering Environment		1				1	
ENG8208 Advanced Engineering Project Management		1				1	
ENG8103 Management of Technological Risk		2				2	
ENG8205 Project Management Practice		2				2	
Schedule B: Technical courses Students must complete two of the courses listed in this schedule.							
CIS8000 Global Information Systems Strategy		1,2				1,2	
ENG8101 Technological Impact and its Management		1				1	
ENG4004 Engineering Project and Operations Management*		2,3				2,3	
ENG8207 Technological Innovation and Development						2	

Footnotes

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

Mechanical Engineering specialisation 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.

Specialisation: Mechanical Engineering (Specialisation Study Code: 15395)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
Schedule A: Students must complete two of the courses listed in this schedule.							
ENG8104 Asset Management in an Engineering Environment		1				1	
ENG8208 Advanced Engineering Project Management		1				1	
ENG8103 Management of Technological Risk		2				2	
ENG8205 Project Management Practice		2				2	
Schedule B: Technical courses Students must complete two of the courses listed in this schedule.							
MEC2202 Manufacturing Processes		1				1	Pre-requisite: MEC1201 or Students must be enrolled in one of the following Programs: MEPR or GCEN
MEC2405 Machine Dynamics		1				1	Pre-requisite: CIV1501 or Students must be enrolled in the following Program: GCEN

Specialisation: Mechanical Engineering (Specialisation Study Code: 15395)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
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 fol lowing Programs: MEPR or GCEN or GEPR
MEC2106 Introduction to Thermofluids		2				2	Pre-requisite: CIV1500 or CIV1501 or Stu dents must be enrolled in one of the follow ing Programs: BENH or BEBC or BEHS or GCEN or MENS or GEPR
MEC2301 Design of Machine Elements		2				2	Pre-requisite: MEC2402 or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR
MEC2304 Solid Modelling		2				2	
MEC2401 Dynamics I		1				1	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 or GEPR

Power Systems Engineering specialisation 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.

Specialisation: Power Systems Engineering (Specialisation Study Code: 15638)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
Schedule A: Students must complete two of the courses listed in this schedule.							
ENG8104 Asset Management in an Engineering Environment		1				1	
ENG8208 Advanced Engineering Project Management		1				1	
ENG8103 Management of Technological Risk		2				2	
ENG8205 Project Management Practice		2				2	
Schedule B: Technical courses Students must complete two of the courses listed in this schedule.							
ELE2303 Embedded Systems Design		1				1	
ELE3804 Power Systems Protection						1	Pre-requisite: ELE1801 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS
ENV2201 Land Studies		1				1	
ELE2101 Control and Instrumentation		2				2	Pre-requisite: ENG1500 or MAT1500 or ENM1500 or ENM1600 or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR
ELE2504 Electronic Design and Analysis		2				2	Pre-requisite: ELE1502 or Students must be enrolled in one of the following Programs: MEPR or GDNS or MENS or GCNS or G CEN or GEPR
ELE3107 Signal Processing		2				2	
ELE3506 Electronic Measurement		2				2	Pre-requisite: (ELE1502 and (ELE2101 or ELE2103) and (ELE2503 or ELE2504)) or Students must be enrolled in one of the fol

Specialisation: Power Systems Engineering (Specialisation Study Code: 15638)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
							lowing Programs: GCEN or METC or MEPR or MENS

Structural Engineering specialisation 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.

Specialisation: Structural Engineering (Specialisation Study Code: 13421)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
Schedule A: Students must complete two of the courses listed in this schedule.							
ENG8104 Asset Management in an Engineering Environment		1				1	
ENG8208 Advanced Engineering Project Management		1				1	
ENG8103 Management of Technological Risk		2				2	
ENG8205 Project Management Practice		2				2	
Schedule B: Technical courses Students must complete two of the courses listed in this schedule.							
CIV3505 Structural Analysis		1				1	Pre-requisite: MEC2402 and (MAT1502 or ENM1600 or MAT1102) or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR
MEC2402 Stress Analysis		1				1	Pre-requisite: CIV1501 or Students must be enrolled in one of the following Programs: GCEN or METC or MEPR or GCNS or GDNS or MENS or GEPR
CIV2403 Geology and Geomechanics		2				2	Pre-requisite: CIV1501 or CIV1500 or Students must be enrolled in one of the following Programs: MENS or GCEN or GEPR
CIV2502 Structural and Building Technology		2		2			
CIV2503 Structural Design I		2				2	Pre-requisite: (ENG1100 and MEC2402) or (ENG1100 and CIV1501 for students enrolled in one of the following: BETC Infrastructure Management major or BENS Infrastructure Management Engineering major) or Students must be enrolled in: GCEN or GEPR

Transdisciplinary Engineering specialisation 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.

Specialisation: Transdisciplinary Engineering (Specialisation Study Code: 15640)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
Schedule A: Students must complete two of the courses listed in this schedule.							
ENG8104 Asset Management in an Engineering Environment		1				1	
ENG8208 Advanced Engineering Project Management		1				1	
ENG8103 Management of Technological Risk		2				2	
ENG8205 Project Management Practice		2				2	
Schedule B: Technical courses Students must complete two of the courses listed in this schedule.							
Approved Courses+		1,2		1,2			
Approved Courses+		1,2		1,2			

Footnotes

\+ Approved Courses will normally be Engineering, Science or Technology courses not lower than Level 2. Consult the Program Coordinator via usq.support@usq.edu.au to seek approval.