

## Bachelor of Engineering and Bachelor of Information Technology (BEBT) - BEng BIT

QTAC code (Australian and New Zealand applicants): Toowoomba campus: 907352

CRICOS code (International applicants): 030304B

	On-campus	Distance education
<b>Semester intake:</b>	Semester 1 (February) Semester 2 (July)	Semester 1 (February) Semester 2 (July)
<b>Campus:</b>	Toowoomba	-
<b>Fees:</b>	Commonwealth supported place Domestic full fee paying place International full fee paying place	Commonwealth supported place Domestic full fee paying place International full fee paying place
<b>Standard duration:</b>	5 years full-time, 8 years part-time or external	
<b>Program articulation:</b>	From: <a href="#">Associate Degree of Engineering</a> ; <a href="#">Bachelor of Engineering Technology</a> ; <a href="#">Bachelor of Engineering</a>	

### Notes:

See note on part-time study below within Admission requirements.

### Contact us

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

### Program focus

This combined degree program will provide students with the knowledge and skills required to design, develop and implement both the hardware and software components of computer systems. The program combines computer systems engineering with applied computer science. The award may be conferred with Honours to high-achieving students.

### Career opportunities

Computer programmer, software/hardware engineer, computer scientist, systems designer, computer systems officer.

### Professional accreditation

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

The Bachelor of Engineering program is accredited by Engineers Australia and, through an agreement reached between the professional engineering bodies of other countries (the Washington Accord), is also recognised in the United Kingdom, the United States of America, Canada, Ireland, Hong Kong, New Zealand and South Africa.

The Bachelor of Information Technology program is accredited at professional level by the Australian Computer Society and through the Seoul Accord, is recognised in other countries.

## Program aims

This combination of an Engineering program with a program in Information Technology provides students with the opportunity to become qualified Engineers with a very strong background in Computer Systems and Applied Computer Science.

Graduates of this combined program will have a high level of knowledge of both hardware and software components of computer systems and the interrelationships between the two. They will have well-developed skills in both hardware and software design and development.

For more details of the two programs that comprise this award, applicants are asked to refer to the [Faculty of Engineering and Surveying](#) and the [Faculty of Sciences](#) sections of this Handbook.

## Program objectives

Graduates of the [Bachelor of Engineering](#) and [Bachelor of Information Technology](#) (Faculty of Sciences) program will have met the separate objectives of the Bachelor of Engineering and the Bachelor of Information Technology programs.

## Admission requirements

### Applicants shall normally:

- have studied four semester units and achieved an exit assessment of 'Sound Achievement' or better in each of the following Queensland Senior Secondary School subjects: English and Mathematics B. It is recommended that applicants should also have satisfactorily completed the subject: Physics, 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:** have met the University's English language requirements or have completed the University's ELICOS/EAP program. Further information is available at [www.usq.edu.au/international/programs/englangprogs](http://www.usq.edu.au/international/programs/englangprogs).

To be admitted to the program, students who intend studying part-time (i.e. less than six units per year) must be eligible to receive at least 16 units of exemptions. This is necessary to ensure that these students are able to complete the program within the maximum duration of eight years.

## 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 program involves five years of full-time study and to be eligible for the combined award, full-time students must complete the requirements of the program within seven years of their initial enrolment in the program.

Students may apply for admission to study part-time or by distance education once they have completed 16 units of the Bachelor of Engineering program or if they are eligible for advanced standing of 16 or more units. This ensures that they are able to complete the program in the maximum duration of eight years.

Where students intend to complete the program using a combination of full-time and part-time study the maximum time for completion will be calculated on a pro-rata basis.

The Bachelor of Engineering and Bachelor of Information Technology is a 40 unit program consisting of Academic courses and Practice courses.

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

**Practice** courses are zero unit courses offered by the Faculty of Engineering and Surveying. Each involves approximately 50 hours of student work. The only grades available for a Practice Course are Pass (P) and Fail (F). A Practice Course is designed to enable students to acquire specific competencies associated with their Engineering major study. These competencies range from specific practical and communication skills through to generic competencies relating to ethical and social responsibility, awareness of the environment, teamwork, etc. For an external student a Practice Course generally involves attendance on-campus for a one-week [residential school](#).

### Residential Schools

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 Program Coordinator 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.

### 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 seven 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.

### 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.

### Exit points

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

### Course transfers

Students who are enrolled in either the [Bachelor of Engineering](#) program or the [Bachelor of Information Technology \(Faculty of Sciences\)](#) program may transfer to the program with advanced standing. If they have completed up to one year of one of those programs they would normally be able to complete the program in the minimum time, after four more years of full-time study. Other students may require longer than the minimum time.

### Honours

The Bachelor of Engineering and Bachelor of Information Technology may be awarded with Honours in the engineering component of the award. The class of honours to be awarded to a student is dependant upon:

- the Grade Point Average calculated from the grades achieved in the courses studied in, or transferred to, the program;
- the grade achieved by the student in the courses [ENG4111 Research Project Part 1](#) and [ENG4112 Research Project Part 2](#) (unless the student is exempted from these courses).

The minimum levels of achievement normally required for each class of honours are shown in the following table. To be assured of achieving a particular class of honours students must have achieved the specified grade in the research project courses and the minimum GPA requirements for all of the courses studied, for the last 16 courses studied, or for the last eight courses studied.

Class of Honours	GPA Calculated from the Grades Achieved in:			Minimum Grade Achieved in Research Project Courses
	All Courses Studied in the Program	The Last 16 Courses Studied*#	The Last Eight Courses Studied*#	
First Class Honours	<b>6.0</b>	<b>6.2</b>	<b>6.5</b>	<b>A</b>
Second Class Honours - Division A	<b>5.5</b>	<b>5.7</b>	<b>5.9</b>	<b>B</b>

Second Class Honours - Division B	<b>5.0</b>	<b>5.1</b>	<b>5.3</b>	<b>C</b>
Minimum number of courses required	<b>20</b>	<b>16</b>	<b>8</b>	

#### Footnotes

- \* The results from courses [ENG4111](#) and [ENG4112](#) must be included (unless the student is exempted from these courses).  
# The best results in a semester are to be used when not all of the results from a semester are required.

### Other information

To be eligible to graduate from the Bachelor of Engineering, students must obtain an aggregate of at least 60 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 [ENG4909 Work Experience - Professional](#) 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 60 days, will be determined by the Examiner of [ENG4909 Work Experience - Professional](#).

### Computer Systems Engineering, Applied Computer Science recommended enrolment pattern

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 synopses](#) section of this Handbook to ascertain if a course is offered in another term.

#### Computer Systems, Applied Computer Science recommended enrolment pattern

Major study: Computer Systems Engineering; Applied Computer Science (Major Study Code: 11985)								
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (WEB)			
	Year	Sem	Year	Sem	Year	Sem		
<b>Academic Courses</b>								
<a href="#">CSC1401 Foundation Programming</a> <	1	1			1,2,3			O
<a href="#">ENG1101 Introduction to Engineering Problem Solving</a>	1	1			1,2			
<a href="#">MAT1500 Engineering Mathematics 1</a>	1	1			1			O
<a href="#">ELE1301 Computer Engineering</a>	1	1			1			
<a href="#">ENG1100 Introduction to Engineering Design</a> <	2	2			1,2			
<a href="#">ENG2102 Engineering Problem Solving and Analysis</a>	1	2			2			Pre-requisite: <a href="#">ENG1101</a>
<a href="#">ELE1502 Electronic Circuits</a>	1	2			2			
<a href="#">ELE1801 Electrical Technology</a> *	1	2			2			Pre-requisite: <a href="#">ENG1500</a> or <a href="#">MAT1500</a> or Students must be enrolled in the following Program: MEPR
<a href="#">ENG1002 Introduction to Engineering and Spatial Science Applications</a> >	1	2			1,2			
<a href="#">MAT1502 Engineering Mathematics 2</a>	2	1			1,2			Pre-requisite: Only Students enrolled in Program BENG must have done <a href="#">MAT1500</a> or <a href="#">MAT1100</a>

Major study: Computer Systems Engineering; Applied Computer Science (Major Study Code: 11985)								
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (WEB)			
	Year	Sem	Year	Sem	Year	Sem		
<a href="#">MAT1101 Discrete Mathematics for Computing</a>	2	1		1				
<a href="#">ELE2303 Embedded Systems Design</a>	2	1		1				
<a href="#">CSC2402 Object-Oriented Programming in C++</a>	2	1		1			Pre-requisite: <a href="#">CSC1401</a> or <a href="#">USQIT16</a> or Students must be enrolled in one of the following Programs: <a href="#">GDTI</a> or <a href="#">GCSC</a> or <a href="#">GDGS</a> or <a href="#">GCEN</a> or <a href="#">GDET</a> or <a href="#">METC</a> or <a href="#">MCOT</a> or <a href="#">MCTE</a> or <a href="#">MCOP</a> or <a href="#">MPIT</a> or <a href="#">MSBN</a> or <a href="#">MSMS</a>	
<a href="#">ENG3103 Engineering Problem Solving Computations</a>	2	2		2			Pre-requisite: ( <a href="#">ENG2102</a> and <a href="#">MAT1502</a> ) or Students must be enrolled in one of the following Programs: <a href="#">GCEN</a> or <a href="#">GDET</a> or <a href="#">METC</a> or <a href="#">MEPR</a> or <a href="#">GCNS</a> or <a href="#">GDNS</a> or <a href="#">MENS</a>	
<a href="#">MAT2500 Engineering Mathematics 3</a>	2	2		2			Pre-requisite: <a href="#">MAT1102</a> or <a href="#">MAT1502</a> or Students must be enrolled in one of the following Programs: <a href="#">GCEN</a> or <a href="#">GDET</a> or <a href="#">METC</a> or <a href="#">MENS</a>	
<a href="#">ELE2103 Linear Systems and Control</a>	2	2		2				
<a href="#">ELE3105 Computer Controlled Systems</a>	3	1		1			Pre-requisite: <a href="#">ELE2103</a> or Students must be enrolled in one of the following Programs: <a href="#">GCNS</a> or <a href="#">GCEN</a> or <a href="#">GDNS</a> or <a href="#">MEPR</a> or <a href="#">MENS</a> or <a href="#">METC</a>	
<a href="#">ELE3305 Computer Systems and Communications Protocols</a>	3	1		1				
<a href="#">ENG2002 Technology, Sustainability and Society</a>	3	1		2,3				
<a href="#">ELE2601 Telecommunications Principles</a>	3	1		1			Pre-requisite: ( <a href="#">ELE1502</a> and <a href="#">ELE1801</a> ) or Students must be enrolled in one of the following Programs: <a href="#">GCEN</a> or <a href="#">GDET</a> or <a href="#">METC</a>	
<a href="#">ENG4104 Engineering Problem Solving Simulations</a>	3	2		2			Pre-requisite: <a href="#">ENG3103</a> or Students must be enrolled in one of the following Programs: <a href="#">GCEN</a> or <a href="#">GDET</a> or <a href="#">METC</a> or <a href="#">MEPR</a> or <a href="#">GCNS</a> or <a href="#">GDNS</a> or <a href="#">MENS</a>	
<a href="#">ELE3107 Signal Processing</a>	3	2		2				
<a href="#">ELE2504 Electronic Design and Analysis</a>	3	2		2			Pre-requisite: <a href="#">ELE1502</a> or Students must be enrolled in the following Program: <a href="#">MEPR</a>	
<a href="#">ELE3307 Real Time Systems</a>	3	2		2			Pre-requisite: <a href="#">ELE1301</a> or Students must be enrolled in one of the following Programs: <a href="#">GCEN</a> or <a href="#">GDET</a> or <a href="#">METC</a> or <a href="#">MENS</a>	
<a href="#">CIS3002 Business Analysis</a>	4	1		1			Pre-requisite: <a href="#">CIS2000</a> or <a href="#">CSC2407</a>	
<a href="#">CSC2401 Algorithms and Data Structures</a>	4	2		2			Pre-requisite: ( <a href="#">CSC1401</a> or <a href="#">CSC2402</a> ) or <a href="#">USQIT16</a> or Students must be enrolled in one of the following Program	

Major study: Computer Systems Engineering; Applied Computer Science (Major Study Code: 11985)								
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (WEB)			
	Year	Sem	Year	Sem	Year	Sem		
							s: GDTI or GCSC or GDGS or GCEN or GDET or METC or MCOT or MCTE or MCOP or MPIT or MSBN or MSMS	
<a href="#">CSC2406 Web Technology</a>	4	2		2			Pre-requisite: <a href="#">CSC1401</a> or <a href="#">USQIT16</a> 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)	4	1		1				
<a href="#">CSC3412 System and Security Administration</a>	4	1		1			O	
<a href="#">CSC2407 Introduction to Software Engineering</a>	4	2		2			Pre-requisite: <a href="#">CSC1401</a> or <a href="#">USQIT16</a> 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	
<a href="#">CSC2404 Operating Systems</a>	4	2		2			Pre-requisite: <a href="#">CSC1401</a> or <a href="#">USQIT16</a> 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	
<a href="#">CSC2408 Software Development Tools</a>	4	1		1,2				
<a href="#">ENG4111 Research Project Part 1</a>	5	1		1			Pre-requisite: <a href="#">ENG3902</a> or Students must be enrolled in the following Program: GDST	
<a href="#">CSC3403 Comparative Programming Languages</a>	5	1		1			Pre-requisite: <a href="#">CSC2402</a> or <a href="#">USQIT16</a> 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	
<a href="#">ENG3003 Engineering Management</a>	5	1		1				
<a href="#">CSC3400 Database Systems</a>	5	1		1				
<a href="#">ENG4112 Research Project Part 2^</a>	5	2		2			Pre-requisite: <a href="#">ENG4111</a>	
<a href="#">ENG4004 Engineering Project and Operations Management</a>	5	2		2,3				
Elective (Select from the Electives list)	5	2		2				
<a href="#">CSC3419 XML and the Web</a>	5	2		2				
<b>Practice Courses</b>								
<a href="#">ENG1901 Engineering Practice 1&lt;</a>	1	1		2,3				
<a href="#">ELE1911 Electrical and Electronic Practice A</a>	1	2		3				
<a href="#">ELE2912 Electrical and Electronic Practice B</a>	2	1		3			Pre-requisite: <a href="#">ELE1801</a> and <a href="#">ELE1301</a> and <a href="#">ELE1502</a>	

Major study: Computer Systems Engineering; Applied Computer Science (Major Study Code: 11985)								
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (WEB)			
	Year	Sem	Year	Sem	Year	Sem		
<a href="#">ELE3913 Computer Systems Engineering Practice</a>	3	2		2				
<a href="#">ELE3915 Electrical and Electronic Practice E</a>	3	2		2				
<a href="#">ENG3902 Professional Practice 1</a>	4	2		2				
<a href="#">ENG4903 Professional Practice 2</a>	5	1		2			Pre-requisite: <a href="#">ENG3902</a>	
<a href="#">ENG4909 Work Experience - Professional</a>	5			1,2				
<b>Electives - Select two courses from the following:</b>								
<a href="#">CSC3412 System and Security Administration</a>		1		2				
<a href="#">ELE3401 Software Engineering Design Principles</a>		1		1				
<a href="#">ELE4402 Software Engineering Project Management</a>				2				
<b>Select two courses from the following:</b>								
<a href="#">ELE3506 Electronic Measurement</a>		2		2			Pre-requisite: ( <a href="#">ELE1502</a> and ( <a href="#">ELE2101</a> or <a href="#">ELE2103</a> ) and ( <a href="#">ELE2503</a> or <a href="#">ELE2504</a> )) or Students must be enrolled in one of the following Program s: GCEN or GDET or METC or MEPR or MENS	
<a href="#">ELE4607 Advanced Digital Communications†</a>		1					Pre-requisite: <a href="#">ELE1301</a> or S tudents must be enrolled in one of the following Program s: GCEN or GDET or METC or MENS	
<a href="#">ENG8001 Engineering and Surveying Research Methodology</a>		1,2				1,2		
<a href="#">MEC4406 Robotics and Machine Vision</a>		2		2			Pre-requisite: <a href="#">MEC2401</a> or <a href="#">ELE2103</a>	

#### Footnotes

- < The on-campus offering of this course has been timetabled for Semester 1. Students may consider enrolling in semester 2 however they may experience timetable clashes.
- \* Students who have been granted an exemption from [ELE1801](#), are advised to purchase the study materials from the [USQ Bookshop](#) and work through this prior to attempting courses for which [ELE1801](#) is an enrolment requirement.
- >
- ^ It is recommended that students in the Bachelor of Engineering and Bachelor of Information Technology should also be enrolled in [ENG4903](#) while undertaking this course.
- † Offered Even Years Only.

#### Notes:

Students should also refer to the 'Other Requirements for Students Studying Electrical and Electronic or Computer Systems Courses' at the beginning of the Faculty of Engineering and Surveying section of this Handbook.

Other courses may be admissible as Electives. Interested students should contact their Program Coordinator or Head of Discipline.