Bachelor of Engineering (Honours) Bachelor of Science (BEHS) - BEng(Hons) BSc

QTAC code (Australian and New Zealand applicants): External: 907365; Toowoomba campus: 907362

CRICOS code (International applicants): 079518F

Programs at USQ are regularly reviewed to ensure they remain professionally-relevant, in order to enhance the graduate outcomes of our students. This program is currently being re-accredited and is as a consequence likely to undergo some changes. Full details will be available when it is approved. If you have any questions, please contact us directly.

<table>
<thead>
<tr>
<th>Semester intake:</th>
<th>On-campus#</th>
<th>External</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semester 1 (February)</td>
<td>Semester 1 (February)</td>
<td>Semester 1 (February)</td>
</tr>
<tr>
<td>Semester 2 (July)</td>
<td>Semester 2 (July)</td>
<td></td>
</tr>
</tbody>
</table>

| Campus:                   | Springfield, Toowoomba      |                           |

<table>
<thead>
<tr>
<th>Fees:</th>
<th>Commonwealth supported place</th>
<th>Domestic full fee paying place</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Commonwealth supported place</td>
<td>Domestic full fee paying place</td>
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<tr>
<td></td>
<td>International full fee paying place</td>
<td>International full fee paying place</td>
</tr>
</tbody>
</table>

| Standard duration:        | 5 years full-time, 8 years part-time or external |

| Program articulation:     | From: Associate Degree of Engineering; Bachelor of Engineering Science; Bachelor of Engineering (Honours) |

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

Footnotes

# None of the Bachelor of Science majors are available at the Springfield campus. However, Springfield students may be able to take a Science major externally. Accordingly, the Springfield offering is not suitable for International on-campus students.

Contact us

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

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 (Honours) may apply for chartered status as a Professional Engineer and, when granted, may use the post-nominal MIEAust CPEng.

The Bachelor of Engineering (Honours) 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 Unites States of America, Canada, Ireland, Hong Kong, New Zealand and South Africa.
The Computing major of the Bachelor of Science is provisionally accredited at professional level by the Australian Computer Society and through the Seoul Accord is recognised in other countries.

Program aims
This program provides students with the opportunity to become qualified Engineers with a strong background in one branch of Science. The program offers students a high level of flexibility as they are able to select one of nine Engineering majors and combine it with one of seven Science majors.

Program objectives
Graduates of the Bachelor of Engineering (Honours) Bachelor of Science program will have met the separate objectives of the Bachelor of Engineering (Honours) and the Bachelor of Science programs.

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.

Program Information Set
View USQ’s admission criteria, student profiles and a summary of all offers made under Course Admission Information Set via the QTAC website.

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

- Have achieved a minimum Overall Position (OP) 10, tertiary entrance rank 79 or equivalent qualification.^  
- Subject Pre-requisites: English (4,SA) and Mathematics B (4,SA) or equivalent.  
- English Language Proficiency requirements for Category 2.

Applicants are advised to also note the following:

- Recommended Prior Study: Physics (4,SA) or equivalent.  
- Applicants should ensure they are able to complete this program within the maximum duration of eight years. To achieve this, students will need to complete a minimum of five units of study per year or be eligible for 16 units of credit.

All students are required to satisfy the applicable English language requirements.

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

^ These are determined by the University for specific programs each Semester. The 2017 OP and tertiary entrance ranks are based on agreed QTAC schedules which assess formal study at Year 12 or equivalent level, tertiary, preparatory, professional or vocational qualifications or work experience, as detailed in the QTAC Assessment of Qualifications Manual and QTAC Assessor Guidelines.
Bonus ranks may help you get into the program of your choice by increasing your OP/Rank. The bonus ranks don't apply to all applicants or all programs. Please read the information on USQ's Admissions bonus scheme carefully to find out what you may be eligible for.

Program fees

Commonwealth supported place
A Commonwealth supported place is where the Australian Government makes a contribution towards the cost of a student's 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.

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 program involves five years of full-time study.

Students may apply for admission to study part-time or by distance education, however applicants should ensure they are able to complete this program within the maximum duration of eight years. To achieve this, students will need to complete a minimum of five units of study per year or be eligible for 16 units of credit.

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.

For more details of the two programs that comprise this award, applicants are asked to refer to the Bachelor of Science and Bachelor of Engineering (Honours) sections of this Handbook.

The Bachelor of Engineering (Honours) Bachelor of Science is a 40-unit program consisting of Academic courses and Practice courses.

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

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

The components of the program are shown in the following table:

<table>
<thead>
<tr>
<th>Program Component</th>
<th>Academic Courses</th>
<th>Practice Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Courses</td>
<td>Units</td>
</tr>
<tr>
<td>Core Studies</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Engineering Major</td>
<td>14 to 18 depending on the Major</td>
<td>14 to 18 depending on the Major</td>
</tr>
<tr>
<td>Study</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approved courses</td>
<td>0-4 depending on the Engineering Major</td>
<td>0-4 depending on the Engineering Major</td>
</tr>
</tbody>
</table>

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### 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.

### Core courses

The courses that comprise the core studies program are the same as those for the Bachelor of Engineering (Honours) except for the addition of the courses STA2300 Data Analysis, (CMS1000 Communication and Scholarship OR CMS1100 Communicating in the Sciences) and (CSC1401 Foundation Programming OR SCI1001 Succeeding in Science). The core courses are shown in the following table:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Academic Courses</strong></td>
<td></td>
</tr>
<tr>
<td>ENM1600 Engineering Mathematics</td>
<td>1</td>
</tr>
<tr>
<td>ENM2600 Advanced Engineering Mathematics</td>
<td>1</td>
</tr>
<tr>
<td>ENG1002 Introduction to Engineering and Spatial Science Applications</td>
<td>1</td>
</tr>
<tr>
<td>ENG2002 Technology, Sustainability and Society</td>
<td>1</td>
</tr>
<tr>
<td>ENG3003 Engineering Management</td>
<td>1</td>
</tr>
<tr>
<td>ENG1100 Introduction to Engineering Design</td>
<td>1</td>
</tr>
<tr>
<td>ENG1004 Engineering and Spatial Science Problem Solving Principles</td>
<td>1</td>
</tr>
<tr>
<td>ENG3104 Engineering Simulations and Computations</td>
<td>1</td>
</tr>
<tr>
<td>ENG4110 Engineering Research Methodology</td>
<td>1</td>
</tr>
<tr>
<td>ENG4111 Research Project Part 1</td>
<td>1</td>
</tr>
<tr>
<td>ENG4112 Research Project Part 2</td>
<td>1</td>
</tr>
<tr>
<td>CMS1000 Communication and Scholarship OR CMS1100 Communicating in the Sciences</td>
<td>1</td>
</tr>
<tr>
<td>CSC1401 Foundation Programming OR SCI1001 Succeeding in Science</td>
<td>1</td>
</tr>
<tr>
<td>STA2300 Data Analysis</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>14</td>
</tr>
<tr>
<td><strong>Practice Courses</strong></td>
<td></td>
</tr>
<tr>
<td>ENG1901 Engineering Practice 1</td>
<td>0</td>
</tr>
<tr>
<td>ENG3902 Professional Practice 1</td>
<td>0</td>
</tr>
<tr>
<td>ENG4903 Professional Practice 2</td>
<td>0</td>
</tr>
<tr>
<td>ENG4909 Work Experience - Professional</td>
<td>0</td>
</tr>
</tbody>
</table>

Students should choose the appropriate courses from Communication Studies (CMS1000 Communication and Scholarship OR CMS1100 Communicating in the Sciences) and Enabling Studies 1 (CSC1401 Foundation Programming OR SCI1001 Succeeding in Science) depending on the Science major they undertake (refer to the Bachelor of Science Handbook entry).

### Major studies

#### Engineering majors

An Engineering major study provides students with knowledge and skills in a particular engineering discipline. Students must select one of the following eight majors as their Engineering major.
The courses in each of the Engineering majors are listed in the Bachelor of Engineering (Honours) section of this Handbook. Students enrolled in the Bachelor of Engineering (Honours) Bachelor of Science program study all of the Core courses listed in an Engineering major. Three approved courses are to be deleted from the list of courses in each major.

### Engineering major studies:

- Agricultural Engineering
- Civil Engineering
- Computer Systems Engineering
- Electrical and Electronic Engineering
- Environmental Engineering
- Instrumentation Control and Automation Engineering
- Mechanical Engineering *
- Power Engineering

**Footnotes**

* Students undertaking this Engineering major cannot complete the following Science major within 40 units: Computing.

Students should refer to the list of approved courses for their Engineering major.

### Science majors

The Science major will enable students to increase their knowledge and skills in a particular field of science. Students must select one of the following eight-unit majors as their Science major.

### Science major studies:

- Plant Agricultural Science
- Biology
  - Computing *
- Environment and Sustainability
- Food Science
- Human Physiology
- Mathematics *
- Physical Sciences
- Wine Science

**Footnotes**

* Students who select the Computing major need to replace a fourth Engineering approved course with MAT1101 Discrete Mathematics for Computing. Students enrolled in the following Engineering major cannot complete this Science major within 40 units: Mechanical Engineering

* Students who select the Mathematics major need to replace ENM1600 Engineering Mathematics with MAT1101 Discrete Mathematics for Computing as ENM1600 Engineering Mathematics is equivalent to MAT1102 Algebra and Calculus I. These students also need to replace ENM2600 Advanced Engineering Mathematics with an approved course from their Engineering major as ENM2600 Advanced Engineering Mathematics is equivalent to MAT2100 Algebra and Calculus II.

The courses comprising each of the Science majors are listed in the Bachelor of Science section of this Handbook.

Where a course listed in a student's Science major is also listed in the core studies component of the program or in their Engineering major, then the student must select another course from the Science major or, with the approval of the Program Coordinator, another course offered by the Faculty of Health, Engineering and Sciences. Students should consult the Bachelor of Science section of this Handbook for a list of Unsuitable approved courses for their chosen Science major.
Practical experience

To be eligible to graduate from the Bachelor of Engineering (Honours), students must obtain an aggregate of at least 60 days of suitable work experience during their program. This experience may be in an engineering office or laboratory where the student would be working principally with professional engineers and engineering associates. It may, however, be preferable for students to spend some time in field or factory activities to gain insight into industrial practice and to see what is involved in converting designs into finished products. Students are required to enrol in 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 work experience to satisfy this requirement. The record of work experience must be made available for perusal by the Faculty of Health, Engineering and Sciences upon request. The acceptability or otherwise of employment experience, and the period of that type of experience that may be credited towards the 60 days, will be determined by the Examiner of ENG4909 Work Experience - Professional.

Credit or exemptions for ENG4909 Work Experience - Professional will not normally be considered.

IT requirements

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

Residential schools

The attendance requirement of residential schools within this degree is indicated by the following letters: V = Voluntary; O = Optional; C = Compulsory; R = Recommended; HR = Highly Recommended; M = Mandatory. Further information is available here and in the Policy and Procedure Library

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

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

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

ENG3902 Professional Practice 1 is to be studied in the student's penultimate year. Upon completion of ENG3902 Professional Practice 1, students must study ENG4111 Research Project Part 1 and ENG4112 Research Project Part 2 and ENG4903 Professional Practice 2 in the same academic year.
Exit points

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

Credit

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

Course transfers

Students may enter the program with advanced standing. Students who are enrolled in either the Bachelor of Engineering (Honours) program or the Bachelor of Science program may transfer to the program. 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 level of honours awarded will be determined based on the USQ procedure. Please refer to the Class of Honours Standard Schedule.

Recommended enrolment patterns

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.

Due to the large number of combinations of Engineering and Sciences majors available separate recommended enrolment pattern tables are not printed in this Handbook.

Commencing on-campus students should enrol in the standard first year courses in the engineering major that they have selected. Towards the end of their first year they should consult the Faculty of Health, Engineering and Sciences for advice on the enrolment pattern to be followed in later years of their program.