

## Bachelor of Science (BSCI) - BSc

QTAC code (Australian and New Zealand applicants): Information Technology (Toowoomba campus and External: 906779); Astronomical & Space Sciences (External: 906665); Computing (Toowoomba campus and External: 906769); Wine Science (Toowoomba campus: 906115); Environment & Sustainability (External: 906265; Toowoomba campus: 906261); Human Physiology (Toowoomba campus and External: 906829); Mathematics (Toowoomba campus and External: 906819); Psychology Extended (Ipswich campus: 936361; External: 906365); Plant Agricultural Science (External: 906995; Toowoomba campus: 906991); Food Science (External: 906985; Toowoomba campus: 906981); Physical Sciences (External: 906125); Biology (Toowoomba campus and External: 906839); Counselling (Ipswich campus: 936552; External: 926555; Toowoomba campus: 906552); Psychology and Human Physiology (Toowoomba campus: 906321); Mathematics & Statistics (External: 906355; Toowoomba campus: 906351); Psychology (Ipswich campus: 936331; External: 906335; Toowoomba campus: 906331)

CRICOS code (International applicants): 042230E

Programs at USQ regularly undergo a comprehensive re-accreditation process to assure their relevance and quality. This program is currently being re-accredited and, as a consequence, is likely to undergo some changes. Full details will be made available when it is approved. If you have any questions, please [contact us](#).

	On-campus <sup>#^†*~</sup>	External <sup>&lt;</sup>
<b>Semester intake:</b>	Semester 1 (February) Semester 2 (July) Semester 3 (November)	Semester 1 (February) Semester 2 (July) Semester 3 (November)
<b>Campus:</b>	Ipswich, 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>Residential school:</b>		Ipswich/Toowoomba
<b>Standard duration:</b>	3 years full-time, 6 years part-time, 9 years maximum	

### Footnotes

- # The Psychology Extended major (16 units) is only available on-campus at USQ Ipswich for a Semester 1 entry. Students can complete this extended major at other campuses through a mixture of on-campus and external courses.
- ^ The Physical Sciences and Astronomical and Space Sciences majors are only offered by external mode. Students will need to attend residential schools.
- † Not all majors are available to commence in Semester 3 at USQ Toowoomba.
- \* The Wine Science, Physical Sciences and Astronomical and Space Sciences majors are not available to international students studying on-campus.
- ~ The Counselling major is not available to international students studying on-campus. Domestic students can complete this major on-campus through a mixture of on-campus and external courses.
- < The Astronomical and Space Sciences major is available to international students residing in Australia, however, there are highly recommended attendance requirements at multiple residential schools held at USQ Toowoomba throughout the duration of the program. The external offering is unsuitable for international students studying overseas.

## 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:study@usq.edu.au">study@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>

## Professional accreditation

The Information Technology major of this program is accredited at professional level by the [Australian Computer Society](#) and, through the Seoul Accord, is recognised in other countries.

The Bachelor of Science (Psychology) major is fully accredited by the [Australian Psychology Accreditation Council](#) as a three-year sequence of study. The Bachelor of Science (Psychology Extended) major will automatically meet full accreditation with the Australian Psychology Accreditation Council as a three-year sequence of study.

The 8 unit Counselling major in the Bachelor of Science (BSCI) is not accredited externally. Residential schools within the [BSCI Bachelor of Science \(Counselling\)](#) major may assist students accrue hours of face to face instruction/tuition often required by professional counselling associations as part of membership criteria.

## Program objectives

On completion of this program students should be able to:

- Exhibit a broad and coherent knowledge base, with a level of depth in one or more science disciplines, suitable to undertake professional work and/or further study.
- Apply a range of cognitive and technical skills which reflect the underlying principles of one or more science disciplines.
- Display well developed cognitive, technical and communication skills to select and apply relevant methods and technologies and present information to a range of audiences.
- Critically analyse, consolidate and evaluate information to construct and implement solutions to unpredictable and complex problems.
- Work autonomously and collaboratively to construct and implement problem solving paradigms to address relevant issues.
- Apply well directed judgement and responsibility, in diverse contexts, which are consistent with the social, moral and legal responsibilities of professional scientists.

## 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 07. Graduates at this level will have broad and coherent knowledge and skills for professional work and/or further learning.

The full set of levels criteria and qualification type descriptors can be found by visiting [www.aqf.edu.au](http://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) **15**, tertiary entrance rank **68** or equivalent qualification.<sup>^</sup>
- Subject Pre-requisite: English (4,SA) or equivalent (noting there may be additional pre-requisites depending on major).
- English Language Proficiency requirements for Category 2.

Applicants are advised to also address the following:

- Recommended Prior Study: dependent on major
- Assumed Knowledge expectations: Mathematics A (4,SA) or equivalent (additional requirements dependent on major).

Additional Pre-requisites and Recommended Prior Study for individual majors

### **Astronomical and Space Sciences (12 unit major)**

Subject Pre-requisites: English (4, SA); Mathematics B (4, SA) or equivalent.

Applicants are advised to also address the following:

- Recommended prior study: at least one of Biology, Chemistry, Physics or Science or equivalent.

### **Biology (8 unit major)**

Subject Pre-requisites: English (4, SA) or equivalent; Mathematics A (4, SA) or equivalent.

Applicants are advised to also address the following:

- Recommended prior study: Mathematics B and one of Biology, Chemistry, Physics or Science or equivalent. If students do not have the recommended Mathematics B Level for entry then they will be recommended to undertake [MAT1000 Mathematics Fundamentals](#) as an elective.
- Assumed knowledge expectations: Mathematics A or equivalent (until 2019).

### **Computing (8 unit major)**

Subject Pre-requisites: English (4, SA) or equivalent; Mathematics A (4, SA) or equivalent.

Applicants are advised to also address the following:

- Recommended prior study: Mathematics B\* (4,SA) or equivalent.
- Assumed knowledge expectations: Mathematics A\* (until 2019) or equivalent.

\* Open Access College has courses available via [Tertiary Preparation Program](#) which will allow students to up-skill in Mathematics prior to entry.

### **Counselling (8 unit major)**

Subject Pre-requisites: English (4, SA) or equivalent.

Applicants are advised to also address the following:

- Assumed knowledge expectations: Mathematics A (4, SA) or equivalent.

### **Environment and Sustainability (8 unit major)**

Subject Pre-requisites: English (4, SA); Mathematics A (4, SA) or equivalent.

Applicants are advised to also address the following:

- Recommended prior study: Mathematics B and one of Biology, Chemistry, Physics or Science or equivalents. If students do not have the recommended Mathematics B Level for entry then they will be required to undertake [MAT1000 Mathematics Fundamentals](#) as an elective.
- Assumed knowledge expectations: Mathematics A (4, SA) or equivalent (until 2019).

### **Food Science (8 unit major)**

Subject Pre-requisites: English (4, SA), Mathematics A (4, SA) or equivalent.

Applicants are advised to also address the following:

- Recommended prior study: Mathematics B and one of Biology, Chemistry, Physics or Science or equivalents. If students do not have the recommended Mathematics B Level for entry then they will be required to undertake [MAT1000 Mathematics Fundamentals](#) as an elective.

### **Human Physiology (8 unit major)**

Subject Pre-requisites: English (4, SA) or equivalent; Mathematics A (4, SA) or equivalent.

Applicants are advised to also address the following:

- Recommended prior study: Mathematics B and one of Biology, Chemistry, Physics or Science or equivalent. If students do not have the recommended Mathematics B Level for entry then they will be required to undertake [MAT1000 Mathematics Fundamentals](#) as an elective.
- Assumed knowledge expectations: Mathematics A (4, SA) or equivalent (until 2019)

### **Information Technology (12 unit major)**

Subject Pre-requisites: English (4, SA) or equivalent; Mathematics A (4, SA) or equivalent.

Applicants are advised to also address the following:

- Recommended Prior Study: Mathematics B\* or equivalent.
- Assumed knowledge expectations: Mathematics A\* (4, SA) or equivalent (until 2019).

\* Open Access College has courses available via [Tertiary Preparation Program](#) which will allow students to up-skill in Mathematics prior to entry.

### **Mathematics (8 unit major)**

Subject Pre-requisites: English (4, SA), Mathematics B (4, SA) or equivalent.

### **Mathematics and Statistics (12 unit major)**

Subject Pre-requisites: English (4, SA), Mathematics B (4, SA) or equivalent.

### **Physical Sciences (8 unit major)**

Subject Pre-requisites: English (4, SA); Mathematics B (4, SA) or equivalent.

Applicants are advised to also address the following:

- Recommended prior study: Mathematics B (until 2019) and one of Biology, Chemistry, Physics or Science21 or equivalents. If students do not have the recommended Mathematics B Level for entry then they will be required to undertake [MAT1000 Mathematics Fundamentals](#) as an elective.
- Assumed knowledge expectations: Mathematics A (4, SA) or equivalent (from 2019).

### **Plant Agricultural Science (8 unit major)**

Subject Pre-requisites: English (4, SA), Mathematics A (4, SA) or equivalent.

Applicants are advised to also address the following:

- Recommended Prior Study: Mathematics B and one of Biology, Chemistry, Physics or Science or equivalents. If students do not have the recommended Mathematics B Level for entry then they will be required to undertake [MAT1000 Mathematics Fundamentals](#) as an elective.

### **Psychology (12 unit major)**

Subject Pre-requisites: English (4, SA) or equivalent

Applicants are advised to also address the following:

- Assumed knowledge expectations: Mathematics A (4,SA) or equivalent

### **Psychology Extended (16 unit major)**

Subject Pre-requisite: English (4, SA) or equivalent

Applicants are advised to also address the following:

- Assumed knowledge expectations: Mathematics A (4,SA) or equivalent

## Wine Science (8 unit major)

Subject Pre-requisite: English (4, SA), Mathematics A (SA) or equivalent.

Applicants are advised to also address the following:

- Recommended prior study: Mathematics B and one of Biology, Chemistry, Physics or Science or equivalent. If students do not have the recommended Mathematics B Level for entry then they will be recommended to undertake [MAT1000 Mathematics Fundamentals](#) as an elective.

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.

<sup>^</sup> These are determined by the University for specific programs each Semester. The 2019 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.

Special admissions may help you get into the program of your choice by increasing your Selection Rank. The additional points don't apply to all applicants or all programs. Please read the information about USQ's [Special Admissions](#) 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 students' higher education and students pay a [student contribution amount](#), which varies depending on the courses undertaken. Students are able to calculate the fees for a particular course via the [Course Fee Finder](#).

Commonwealth Supported students may be eligible to defer their fees through a Government loan called [HECS-HELP](#).

### Domestic full fee paying place

Domestic full fee paying places are funded entirely through the full fees paid by the student. Full fees vary depending on the courses that are taken. Students are able to calculate the fees for a particular course via the [Course Fee Finder](#).

Domestic full fee paying students may be eligible to defer their fees through a Government loan called [FEE-HELP](#) provided they meet the residency and citizenship requirements.

Australian citizens, Permanent Humanitarian Visa holders, Permanent Resident visa holders and New Zealand citizens who will be resident outside Australia for the duration of their program pay full tuition fees and are not eligible for [FEE-Help](#).

### International full fee paying place

International students pay full fees. Full fees vary depending on the courses that are taken and whether they are studied on-campus, via distance education/online. Students are able to calculate the fees for a particular course via the [Course Fee Finder](#).

## Program structure

The Bachelor of Science (BSCI) consists of 24 units comprising 4 core units of Foundation Studies courses with either a first 16, 12 or 8-unit major, a second 8-unit major or 4-unit minor and/or approved elective courses as specified for each major as follows:

- one 16-unit BSCI major, 4-unit Foundation Studies and one 4-unit minor
- one 16-unit BSCI major, 4-unit Foundation Studies and 4 units of elective courses

- one 12-unit BSCI major, 4-unit Foundation Studies and one 8-unit major<sup>\*^</sup>
- one 12-unit BSCI major, 4-unit Foundation Studies, one 4-unit minor and 4 units of elective courses
- one 12-unit BSCI major, 4-unit Foundation Studies and 8 units of elective courses
- one 8-unit BSCI major, 4-unit Foundation Studies, one 8-unit major<sup>\*</sup> and 4 units of elective courses<sup>\*</sup>
- one 8-unit BSCI major, 4-unit Foundation Studies and 12 units of elective courses approved by the Program Coordinator.

\* The second 8-unit major can be chosen from any approved 8-unit major in the University. Students should ensure that they complete the appropriate courses in their second major in order to graduate with a double major in the Bachelor of Science. The selection of a suitable block of Foundation Studies courses will be based on the majors chosen and will require Program Coordinator approval.

^ The Information Technology and Computing Majors, and the Mathematics and the Mathematics and Statistics majors cannot be combined towards a double major in the program.

**At least four courses in the program will be at level 3 and no more than 10 courses in the program will be at level 1.** Where two majors are chosen which have some compulsory courses in common, the overlap will be made up by taking extra major approved courses defined in those majors.

## Required time limits

Students have a maximum of 9 years to complete this program.

## Core courses

### Foundation Studies

The Foundation knowledge courses for each major are listed in the table below. Students wishing to vary foundation studies must contact the program coordinator for approval.

	Mathematics and Statistics, Mathematics	Computing, Information Technology <sup>^</sup>	Plant Agricultural Science, Environment & Sustainability, Food Science, Human Physiology, Biology, Wine Science <sup>^</sup>	Counselling, Psychology and Psychology Extended	Physical Sciences <sup>^</sup>	Astronomical and Space Sciences <sup>^</sup>
Communication Studies	<a href="#">CMS1100</a> <sup>*</sup>	<a href="#">CMS1000</a>	<a href="#">CMS1100</a> <sup>*</sup>	<a href="#">CMS1000</a>	<a href="#">CMS1100</a> <sup>*</sup>	<a href="#">CMS1100</a> <sup>*</sup>
Enabling Studies 1	<a href="#">SCI1001</a>	<a href="#">CSC1401</a>	<a href="#">SCI1001</a>	<a href="#">SCI1001</a>	<a href="#">CSC2410</a>	<a href="#">CSC2410</a>
Statistics	<a href="#">STA2300</a>	<a href="#">STA2300</a>	<a href="#">STA2300</a>	<a href="#">STA2300</a>	<a href="#">STA2300</a>	<a href="#">STA2300</a>
Enabling Studies 2	<a href="#">CSC2410</a>	<a href="#">MAT1101</a> <sup>^</sup>	<a href="#">MAT1100</a> <sup>^#</sup>	<a href="#">PSY1030</a>	<a href="#">MAT1100</a> <sup>^#</sup>	<a href="#">MAT1101</a> <sup>^</sup>

### Footnotes

<sup>^</sup> If students do not have the recommended Mathematics B level for entry then they will be required to undertake [TPP7182 Mathematics Tertiary Preparation 2](#) or [MAT1000 Mathematics Fundamentals](#) as an elective before they attempt [MAT1100 Foundation Mathematics](#) or [MAT1101 Discrete Mathematics for Computing](#).

<sup>\*</sup> Students can study [CMS1000 Communication and Scholarship](#) externally instead of [CMS1100 Communicating in the Sciences](#).

<sup>#</sup> This course is equivalent to MAT1500 .

## Major studies

The following majors are available in the Bachelor of Science:

**16-unit major** (*contain at least four Level 3 courses*)

- Psychology Extended

### **12-unit majors** (*contain at least three Level 3 courses*)

- Mathematics & Statistics
- Information Technology
- Psychology
- Astronomical and Space Sciences

### **8-unit majors** (*contain at least two Level 3 courses*)

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

## **Psychology Extended (16-unit major)**

### **Psychology Extended major objectives**

The Bachelor of Science (Psychology Extended) program aims to produce graduates who have advanced knowledge and skills in psychology. Participation in the capstone experience will provide students with the acquired ability to research independently, apply theory and develop academic expertise in their chosen focus of area in psychology. The Program will extend student's appreciation of the contributions made by psychologists to society.

Many people who study psychology will not go on to become psychologists, but will find their training in psychology to be highly relevant and useful in their lives and work. Those who do become psychologists may work in a variety of settings including hospitals, schools, government bodies, large corporations, or in private practice. The Psychology Extended major will provide students with a broader knowledge of psychology-related knowledge and skills, which more than satisfy the minimum requirements for affiliate membership of relevant professional bodies, most notably the Australian Psychological Society.

Graduates who have completed the Extended major in Psychology will be able to:

- apply knowledge of the breadth and depth of the major fields in contemporary Psychology to describe and explain human behaviour in multiple contexts:
- systematically apply this knowledge in specific contexts such as mental health (clinical psychology), the workplace (organisational psychology), legal settings (law and psychology), education or sport psychology.
- conduct research and report the findings to lay persons and the scientific community at large
- prepare and develop a portfolio, which documents learning of identified outcomes and reflections of metacognitive processes
- develop a broad range of skills, which are suited to occupations requiring the study or application of behavioural science in both the public and private sector

### **Psychology Extended Major Courses**

This is a 16-unit extended major. Along with the Foundation Studies courses prescribed above, students must take the following 16 units of courses:

<b>Courses</b>	<b>Semester(s) Offered</b>	<b>Mode</b>
<a href="#">PSY1010 Foundation Psychology A</a>	1, 3	ONC, ONL
<a href="#">PSY1020 Foundation Psychology B</a>	1 (ONL only), 2	ONC, ONL
<a href="#">PSY2010 Social Processes of Behaviour</a>	1	ONC, ONL

<a href="#">PSY2020 Motivation and Emotion</a>	1	ONC, ONL
<a href="#">PSY2030 Developmental Psychology</a>	2	ONC, ONL
<a href="#">PSY2040 Human Information Processing</a>	2	ONC, ONL
<a href="#">PSY2100 Research Methods in Psychology A</a>	1	ONC, ONL
<a href="#">PSY3010 Assessment of Behaviour</a>	1	ONC, ONL
<a href="#">PSY3030 Abnormal Psychology</a>	1	ONC, ONL
<a href="#">PSY3050 Counselling Psychology</a>	2	ONC, ONL
<a href="#">PSY3060 Learning and Behaviour Change</a>	1	ONC, ONL
<a href="#">PSY3111 Research Methods in Psychology B</a>	2	ONC, ONL
<a href="#">PSY4080 Psychology Complementary Studies A</a>	1	ONC
<a href="#">PSY4090 Psychology Complementary Studies B</a>	2	ONC
Two third-year level courses from the below list of psychology approved courses		

To complete the award, students taking a 16-unit extended major must additionally undertake one of the following choices:

- 4 units of general elective courses; these can be selected from the list of psychology approved courses, or from any discipline, and may be at any year level, or
- one 4-unit minor.

### Minor studies

Minor studies are a set of courses as defined in the [Minor Studies](#) section of the Handbook.

### Electives

General electives can be selected from the table of psychology approved courses below or from any courses at Levels 1, 2 and 3 offered by USQ subject to satisfaction of pre-requisite requirements, timetabling constraints, quotas, and program requirements. Please note that Diploma of Science Foundation core courses are not permitted as electives and students must not take more than ten level 1 courses in the program overall.

### Unsuitable electives

For various reasons, the following courses will not be approved as electives for students majoring in Psychology in the Bachelor of Science program:

[DIP1000](#), [DIP1001](#), [DIP1002](#), [DIP1003](#) and [DIP1004](#).

### Psychology Extended approved elective courses

Courses	Semester(s) Offered	Mode
<a href="#">PSY3101 Career Assessment and Development<sup>#</sup></a>	3	ONL
<a href="#">PSY3110 Clinical Health Psychology</a>	2	ONL
<a href="#">PSY3250 Sport and Exercise Psychology</a>	2	ONL
<a href="#">PSY3730 Industrial and Organisational Psychology</a>	1	ONL
<a href="#">PSY3500 Personality Theory<sup>#</sup></a>	3	ONL

#### Footnotes

<sup>#</sup> This course will not be offered in 2019.

**Note:** The psychology approved courses offered can change from year to year. For information about which psychology approved courses are being offered in any particular year, students are directed to the course specification site for that particular year. Students are responsible for ensuring that they do not enrol in, or continue to be enrolled in, courses for which they have not satisfied the enrolment requirements (e.g., the necessary pre-requisites).



The recommended enrolment patterns for students with no exemptions, and the enrolment requirements for courses in the extended major, is given in the table that follows. If students are granted exemptions from specific compulsory courses or from approved elective courses, they may need to modify the recommended enrolment pattern.

## Mathematics and Statistics (12-unit major)

### Mathematics and Statistics Major Objectives

Graduates who have completed the major in Mathematics and Statistics will be able to:

- understand fundamentals of mathematical analysis at the undergraduate level
- show a sound knowledge of important theories and techniques of applied mathematics, statistics and computing
- apply their knowledge to solve practical problems that they are likely to encounter in science, industry, business or government instrumentalities
- continue to develop their abilities through research, discussion and private study
- use computer packages to solve problems in statistics, mathematics and modelling
- satisfy the minimum requirements for graduate membership of relevant professional bodies.

### Mathematics and Statistics Major Courses

This is a 12-unit major. Along with the Foundation Studies courses prescribed above, students must take the following 8 units of core major courses and choose four courses from the approved major courses.

Courses	Semester(s) Offered	Mode
<b>Mathematics and Statistics core major courses</b>		
<a href="#">MAT1102 Algebra and Calculus I</a>	1	ONC, ONL
<a href="#">STA2301 Distribution Theory</a>	1	ONC, ONL
<a href="#">MAT2100 Algebra and Calculus II</a>	2	ONC, ONL
<a href="#">STA2302 Statistical Inference</a>	2	ONC, ONL
<a href="#">MAT2200 Operations Research 1</a>	2	ONC, ONL
<a href="#">MAT2409 High Performance Numerical Computing</a>	1	ONC, ONL
<a href="#">STA3300 Experimental Design<sup>#</sup></a>	1	ONC, ONL
<a href="#">STA3301 Statistical Models</a>	2	ONC, ONL
<b>Approved courses: Choose four of the following five courses:</b>		
<a href="#">MAT3201 Operations Research 2<sup>*</sup></a>	1	ONC, ONL
<a href="#">MAT3103 Mathematical Modelling and Dynamical Systems<sup>**</sup></a>	2	ONC, ONL
<a href="#">MAT3104 Mathematical Modelling in Financial Economics<sup>*</sup></a>	2	ONC, ONL
<a href="#">MAT3105 Harmony of Partial Differential Equations<sup>**</sup></a>	1	ONC, ONL
<a href="#">STA3200 Multivariate Statistical Methods</a>	1	ONL

#### Footnotes

# Not available in on-campus mode in 2019

\* The on-campus offering of this course is offered in odd years only .

\*\* The on-campus offering of this course is offered in even years only.

To complete the award, students taking a 12-unit major must undertake one of the following:

- one 8 unit second major, excluding the Mathematics major
- 8 units of general electives.

### Second Major

Second majors can be chosen from any of the eight-unit majors defined below for the Bachelor of Science (except Mathematics) or, with the approval of the Faculty of Health, Engineering and Sciences, from other eight-unit majors from other undergraduate programs in the University.

### Minor studies

Minor studies are a set of courses as defined in the [Minor Studies](#) section of the Handbook.

### Electives

General electives are courses chosen from any other Level 1, 2 or 3 courses in the University. It is strongly recommended that students complete as an elective the course not completed in the 'choose four from five courses' as listed above. Students must not take more than ten level 1 courses in the program overall.

### Unsuitable electives

Students will require the approval of the Faculty of Health, Engineering and Sciences if they wish to include [MAT1000 Mathematics Fundamentals](#), [MAT1100 Foundation Mathematics](#), [ENM1500 Introductory Engineering Mathematics](#), [MAC1901](#) and [CSC1402](#) as electives towards the Bachelor of Science program majoring in Mathematics and Statistics.

## Information Technology (12-unit major)

### Information Technology Major Objectives

Graduates who have completed the major in Information Technology will be able to:

- work as a professional in the Information Technology industry
- show a sound understanding of several key areas of computing
- have a broad knowledge in computing
- have basic skills in software development and computer systems
- show sound presentation and communication skills required in the computing industry
- satisfy academic admission requirements for membership of relevant professional bodies.

### Information Technology Major Courses

This is a 12-unit major. Along with the Foundation Studies courses prescribed above, students must take the following 12 units of courses:

Courses	Semester(s) Offered	Mode
<a href="#">ELE1301 Computer Engineering</a>	1	ONC, ONL
<a href="#">CSC2401 Algorithms and Data Structures</a>	2	ONC, ONL
<a href="#">CIS1000 Information Systems Concepts</a>	1, 2, 3	ONC, ONL
<a href="#">CSC2402 Object-Oriented Programming in C++</a>	1	ONC, ONL
<a href="#">CSC2408 Software Development Tools</a>	1, 2	ONC, ONL
<a href="#">CSC3600 ICT Professional Project</a>	1,2	ONC, ONL
<b>Six of the following, with at least three being Level 3 courses :</b>		
<a href="#">CSC3420 Mobile Internet Technology</a>	1	ONC, ONL
<a href="#">CSC2404 Operating Systems</a>	2	ONC, ONL
<a href="#">CSC3412 System and Security Administration</a>	1	ONC, ONL
<a href="#">CSC2406 Web Technology 1</a>	2	ONC, ONL
<a href="#">CSC2407 Introduction to Software Engineering</a>	2	ONC, ONL
<a href="#">CSC3400 Database Systems</a>	1	ONC, ONL
<a href="#">CSC3403 Comparative Programming Languages</a>	1	ONC, ONL
<a href="#">CSC3407 Network Fundamentals and Routing</a>	1	ONC, ONL
<a href="#">CSC3426 Web Technology 2*</a>	2	ONC, ONL

<a href="#">CSC3413 Network Design and Analysis</a>	2	ONC, ONL
<a href="#">CSC3427 Switching, Wireless and WAN Technologies</a>	2	ONC, ONL

#### Footnotes

\* Students will need to complete [CSC2406](#) prior to enrolling in [CSC3426](#).

To complete the award, students taking a 12-unit major must undertake one of the following:

- one 8 unit second major, excluding the Computing major
- 4 units of general elective courses and one 4 unit minor study; or
- 8 units of general electives.

### Second Major

Second majors can be chosen from any of the eight-unit majors defined below for the Bachelor of Science (except Computing) or, with the approval of the Faculty of Health, Engineering and Sciences, from other eight-unit majors from other undergraduate programs in the University.

### Minor Studies

Minor studies are a set of courses as defined in the [Minor Studies](#) section of the Handbook.

### Electives

General electives are courses chosen from other Level 1, 2 or 3 courses in the University. Students must not take more than ten level 1 courses in the program overall.

### Unsuitable Electives

For various reasons, the following courses will not be approved as electives for students majoring in Information Technology in the Bachelor of Science program:

CSC1402, [CIS2000](#), and [CIS2002](#).

## Astronomical and Space Sciences (12-unit major)

### Astronomical and Space Sciences Major Courses

This is a 12-unit major. Along with the Foundation Studies courses prescribed above, students must take the following 12 units of courses:

Courses	Semester(s) Offered	Mode
<a href="#">PHY1101 Astronomy 1</a>	1	ONL
<a href="#">PHY1104 Physics 1</a>	1	ONL
<a href="#">PHY1107 Astronomy 2</a>	2	ONL
<a href="#">PHY1911 Physics 2</a>	2	ONL
<a href="#">PHY2204 Astronomical Techniques</a>	1	ONL
<a href="#">PHY2207 Optics</a>	2	ONL
<a href="#">PHY2208 Planetary and Exoplanetary Science</a>	2	ONL
<a href="#">PHY3303 Modern Physics</a>	1	EXT*
<a href="#">PHY3304 Photonics</a>	2	EXT*
<a href="#">PHY3305 Quantum Mechanics</a>	1	ONL
<a href="#">PHY3306 Solar and Stellar Astronomy</a>	1	ONL
<a href="#">PHY3307 Galactic and Extragalactic Astronomy</a>	2	ONL

#### Footnotes

\* This offering has a highly recommended residential school (linked to an assessment item and non-attendance will mean a student misses an element for assessment preparation or an element of assessment).

#### Notes:

For students seeking to be a member of the Australian Institute of Physics (AIP) or considering post-graduate study in physics or astronomy, the following courses are strongly recommended:

- [MAT1102 Algebra and Calculus I](#)
- [MAT2100 Algebra and Calculus II](#)
- [MAT2409 High Performance Numerical Computing](#)
- [SCI3301 Science Project](#)

For students considering post-graduate study in physics or astronomy, the following courses are strongly recommended:

- [MAT3103 Mathematical Modelling and Dynamical Systems](#)
- [MAT3105 Harmony of Partial Differential Equations](#)

## Second Major

Second majors can be chosen from any of the other eight-unit majors defined for the Bachelor of Science (except Physical Sciences) or, with the approval of the Faculty of Health, Engineering and Sciences, from other eight-unit majors from other undergraduate programs in the University.

## Minor Studies

Minor studies are a set of courses as defined in the [Minor Studies](#) section of the Handbook.

## Electives

General electives are courses chosen from other Level 1, 2 or 3 courses in the University. Students must not take more than ten level 1 courses in the program overall. For this major, if students wish to seek accreditation with the Australian Institute of Physics, they should take the recommended courses above as their electives.

## Psychology (12-unit major)

### Psychology Major Objectives

Graduates who have completed the major in Psychology will be able to:

- demonstrate a sound understanding of the scope and focus of the major fields in contemporary Psychology
- gain employment in the public and private sectors as behavioural science graduates or as graduates with a broad range of skills
- satisfy the minimum requirements for affiliate membership of relevant professional bodies, most notably the Australian Psychological Society
- conduct research and report the findings to lay persons and the scientific community at large.

### Psychology Major Courses

This is a 12-unit major. Along with the Foundation Studies courses prescribed above, students must take the following 12 units of courses:

Courses	Semester(s) Offered	Mode
<a href="#">PSY1010 Foundation Psychology A</a>	1, 3	ONC, ONL
<a href="#">PSY1020 Foundation Psychology B</a>	1, 2	ONC, ONL
<a href="#">PSY2010 Social Processes of Behaviour</a>	1	ONC, ONL
<a href="#">PSY2020 Motivation and Emotion</a>	1	ONC, ONL
<a href="#">PSY2030 Developmental Psychology</a>	2	ONC, ONL
<a href="#">PSY2040 Human Information Processing</a>	2	ONC, ONL
<a href="#">PSY2100 Research Methods in Psychology A</a>	1	ONC, ONL
<a href="#">PSY3010 Assessment of Behaviour</a>	1	ONC, ONL
<a href="#">PSY3030 Abnormal Psychology</a>	1	ONC, ONL
<a href="#">PSY3050 Counselling Psychology</a>	2	ONC, ONL

<a href="#">PSY3060 Learning and Behaviour Change</a>	1	ONC, ONL
<a href="#">PSY3111 Research Methods in Psychology B</a>	2	ONC, ONL

To complete the award, students taking a 12-unit major must undertake one of the following:

- one further 8 unit second major
- 4 units of general elective courses and one 4 unit minor study, or
- 8 units of general electives.

### Second Major

Second majors can be chosen from any of the other eight-unit majors defined for the [Bachelor of Science](#), (Biology or Human Physiology) or, with the approval of the Faculty of Health, Engineering and Sciences, from other eight-unit majors from other undergraduate programs in the University.

The double major Psychology and Human Physiology, will provide an appreciation of the connections between psychological and physiological aspects of human health and is highly recommended by the Faculty of Health, Engineering and Sciences.

The double major Psychology and Counselling, will provide an opportunity to develop skills in counselling in addition to completing the accredited sequence of psychology courses, which may enhance future career and employability prospects and is highly recommended by the Faculty of Health, Engineering and Sciences.

Other majors in the University which have been taken as a second major with psychology include

- Human Resource Management within the [Bachelor of Business and Commerce](#)
- Management and Leadership within the [Bachelor of Business and Commerce](#)
- Business Administration within the [Bachelor of Business and Commerce](#)
- Anthropology within the [Bachelor of Arts](#)
- History within the [Bachelor of Arts](#)
- English Literature within the [Bachelor of Arts](#)

Students intending to take a second major should begin enrolment in these courses in the first year of full-time enrolment, or the second year of part-time enrolment.

### Minor Studies

Minor studies are a set of courses as defined in the [Minor Studies](#) section of the Handbook.

### Electives

General electives can be selected from the table of psychology approved courses below or from any courses at Levels 1, 2 and 3 offered by USQ subject to satisfaction of pre-requisite requirements, timetabling constraints, quotas and program requirements. Please note that Diploma of Science Foundation core courses are not permitted as electives. Students must not take more than ten level 1 courses in the program overall.

### Unsuitable Electives

For various reasons, the following courses will not be approved as electives for students majoring in Psychology in the Bachelor of Science program:

[DIP1000](#), [DIP1001](#), [DIP1002](#), [DIP1003](#) and [DIP1004](#).

### Psychology Approved Courses

Courses	Semester(s) Offered	Mode
<a href="#">PSY3101 Career Assessment and Development<sup>#</sup></a>	3	ONL
<a href="#">PSY3110 Clinical Health Psychology</a>	2	ONL
<a href="#">PSY3250 Sport and Exercise Psychology</a>	2	ONL
<a href="#">PSY3730 Industrial and Organisational Psychology</a>	1	ONL
<a href="#">PSY3500 Personality Theory<sup>#</sup></a>	3	ONL

#### Footnotes

# This course will not be offered in 2019.

**Note:** The psychology approved courses offered changes from year to year. For information about what psychology approved courses are being offered in any particular year students are directed to the course specification site for that particular year. Students are responsible for ensuring that they do not enrol in, or continue to be enrolled in, courses for which they have not satisfied the enrolment requirements (e.g., the necessary pre-requisites).

The recommended enrolment patterns for students with no exemptions, and the enrolment requirements for courses in the major, is given in the table that follows. If students are granted exemptions from specific compulsory courses or from approved courses, they may need to modify the recommended enrolment pattern.

## Eight-unit majors

### Eight-unit major objectives

The eight-unit majors are designed to:

- allow students to receive a broad-based education
- allow students to study at least one discipline area to Third Level
- prepare students for teaching in appropriate areas to Grade 12 level in Secondary Schools, subject to further study
- cater for students who aspire to professional studies that require a general first degree for admission
- form a basis for study at postgraduate diploma level, honours level or higher.

## Biology (8-unit major)

### Biology Major Courses

Courses <sup>#</sup>	Semester(s) Offered	Mode
<a href="#">BIO1101 Biology 1</a>	1	ONC, EXT <sup>*</sup>
<a href="#">BIO2103 Biology 2</a>	2	ONC, EXT <sup>*</sup>
<b>Six (6) of the following courses, with at least two being Level 3 courses (provided prerequisites have been met):</b>		
<a href="#">BIO1104 Medical Microbiology and Immunology 1</a>	2	ONC, EXT <sup>*</sup>
<a href="#">REN2200 Ecology for Sustainability</a>	1	ONC, ONL
<a href="#">CHE1110 Chemistry 1</a>	1	ONC, EXT <sup>*</sup>
<a href="#">BIO2219 Genetics</a>	2	ONC, ONL
<a href="#">CHE2120 Chemistry 2</a>	2	ONC, EXT <sup>*</sup>
<a href="#">BIO2107 Cell and Molecular Biology 1</a>	1	ONC, ONL
<a href="#">REN1201 Environmental Studies</a>	1	ONC, ONL
<a href="#">BIO2202 Plant Physiology</a>	2	ONC, EXT <sup>*</sup>
<a href="#">BIO3318 Plant Microbe Interactions</a>	2	ONC, EXT
<a href="#">BIO3207 Cell and Molecular Biology 2</a>	2	ONC, ONL
<a href="#">REN3301 Biodiversity and Conservation</a>	2	ONC, ONL

#### Footnotes

# At least four (4) courses in the program will be at Level 3 and no more than 10 courses in the program will be at Level 1.

\* This offering has a highly recommended residential school (linked to an assessment item and non-attendance will mean a student misses an element for assessment preparation or an element of assessment).

To complete the award, students taking an eight-unit major must undertake either:

- one further 8 unit second major and 4 units of general elective courses or
- a further 12 units of approved courses negotiated with the Faculty of Health, Engineering and Sciences.

## Second Major

Second majors can be chosen from any of the other eight-unit majors defined for the Bachelor of Science or, with the approval of the Program Coordinator, from other eight-unit majors from other undergraduate programs in the University.

## Minor Studies

Minor studies are a set of courses as defined in the [Minor Studies](#) section of the Handbook.

## Electives

General electives are courses chosen from other Level 1, 2 or 3 courses in the University. Students must not take more than ten level 1 courses in the program overall.

## Computing (8-unit major)

### Computing Major Courses

Courses	Semester(s) Offered	Mode
<a href="#">ELE1301 Computer Engineering</a>	1	ONC, ONL
<a href="#">CSC2401 Algorithms and Data Structures</a>	2	ONC, ONL
<a href="#">CSC2402 Object-Oriented Programming in C++</a>	1	ONC, ONL
<a href="#">CSC2408 Software Development Tools</a>	1, 2	ONC, ONL
<a href="#">CIS1000 Information Systems Concepts</a>	1, 2, 3	ONC, ONL
<b>Three of the following courses:</b>		
<a href="#">CSC2406 Web Technology 1</a>	2	ONC, ONL
<a href="#">CSC3400 Database Systems</a>	1	ONC, ONL
<a href="#">CSC3403 Comparative Programming Languages</a>	1	ONC, ONL
<a href="#">CSC3407 Network Fundamentals and Routing</a>	1	ONC, ONL
<a href="#">CSC3412 System and Security Administration</a>	1	ONC, ONL
<a href="#">CSC3413 Network Design and Analysis</a>	2	ONC, ONL
<a href="#">CSC3426 Web Technology 2*</a>	2	ONC, ONL
<a href="#">CSC3420 Mobile Internet Technology</a>	1	ONC, ONL
<a href="#">CSC3427 Switching, Wireless and WAN Technologies</a>	2	ONC, ONL

### Footnotes

\* Students will need to complete [CSC2406](#) as an elective prior to enrolling in this course.

To complete the award, students taking an eight-unit major must undertake either:

- one further 8 unit second major and 4 units of general elective courses or
- a further 12 units of approved courses negotiated with the Faculty of Health, Engineering and Sciences.

## Second Major

Second majors can be chosen from any of the other eight-unit majors defined for the Bachelor of Science or, with the approval of the Faculty of Health, Engineering and Sciences, from other eight-unit majors from other undergraduate programs in the University.

## Minor Studies

Minor studies are a set of courses as defined in the [Minor Studies](#) section of the Handbook.

## Electives

General electives are courses chosen from other Level 1, 2 or 3 courses in the University. Students must not take more than ten level 1 courses in the program overall.

## Unsuitable Electives

For various reasons, the following courses will not be approved as electives for students majoring in Computing in the Bachelor of Science program:

CSC1402, CIS2000, and CIS2002.

### Counselling (8-unit major)

Graduates who have completed the major in Counselling will have an overview of counselling theories and practice and basic counselling skills. This major is not accredited externally with the PACFA however attendance at residential schools will contribute towards a proportion of the required number of hours to join a PACFA affiliate.

#### Counselling Major Courses

Compulsory Courses	Semester(s) Offered	Mode
<a href="#">CDS1001 Human Relations and Communications</a> <sup>+</sup>	1	EXT
<a href="#">CDS1002 Counselling Skills</a> <sup>*</sup>	2	EXT
<a href="#">CDS3002 Counselling Theory and Practice</a> <sup>+</sup>	1	EXT
<a href="#">CDS3004 Counselling Theory and Practice 2</a> <sup>+</sup>	1	EXT
<b>Choose any four of the following courses</b>		
<a href="#">CDS3001 Assessment and Report Writing in Counselling</a> <sup>+</sup>	2	EXT
<a href="#">CDS3005 Counselling Theory and Practice 3</a> <sup>+</sup>	2	EXT
<a href="#">PSY3101 Career Assessment and Development</a>	3	ONL
<a href="#">PSY2050 Facilitation and Negotiation</a>	2	ONC, EXT
<a href="#">EDU5325 Child Abuse and Neglect: Intervention, Protection and Prevention</a> <sup>^</sup>	1	ONL
<a href="#">EDU5335 Emotional and Behavioural Problems of Children and Adolescents</a> <sup>^</sup>	2	ONL
<a href="#">SCI3302 Industry Placement</a> <sup>~</sup>	1, 2 & 3	ONC,EXT

#### Footnotes

- + Attendance at residential schools is recommended as residential school attendance will be recorded to enable the student to demonstrate that they meet a proportion of the required number of hours of face-to-face instruction/tuition for eligibility to join a PACFA affiliate upon graduation. Students not attending the residential school will not accrue any hours toward eligibility to join a PACFA affiliate upon graduation.
- \* Attendance at residential schools is highly recommended as residential school attendance will be recorded to enable the student to demonstrate that they meet a proportion of the required number of hours of face-to-face instruction/tuition for eligibility to join a PACFA affiliate upon graduation. Students not attending the residential school will not accrue any hours toward eligibility to join a PACFA affiliate upon graduation.
- ^ Students are required to enrol in EDU5325 and EDU5335 as early as possible in the required year of study as places are limited.
- ~ Numbers of enrolments are limited. Students must have an approved placement before being able to enrol. Students should request to enrol by [contacting USQ](#).

To complete the award, students taking an eight-unit major must undertake either:

- one further 8 unit second major and 4 units of general elective courses or



- a further 12 units of approved courses negotiated with the Program Coordinator.

## Second Major

Second majors can be chosen from any of the other eight-unit majors defined for the Bachelor of Science or, with the approval of the Program Coordinator, from other eight-unit majors from other undergraduate programs in the University.

## Minor Studies

Minor studies are a set of courses as defined in the [Minor Studies](#) section of the Handbook.

## Electives

General electives are courses chosen from other Level 1, 2 or 3 courses in the University. Students must not take more than ten level 1 courses in the program overall.

## Residential Schools

[CDS1002 Counselling Skills](#) attendance at the [Residential School](#) for this course is highly recommended.

[CDS1001 Human Relations and Communications](#), [CDS3001 Assessment and Report Writing in Counselling](#), [CDS3002 Counselling Theory and Practice](#), [CDS3004 Counselling Theory and Practice 2](#) and [CDS3005 Counselling Theory and Practice 3](#). Attendance at the [Residential School](#) for these courses is recommended.

Attendance will be recorded to enable the student to demonstrate that they meet a proportion of the required number of hours of face-to-face instruction/tuition for eligibility to join a PACFA affiliate upon graduation.

## Environment and Sustainability (8-unit major)

### Environment and Sustainability Major Objectives

Graduates who have completed the major in Environment and Sustainability will be able to:

- demonstrate more than a basic competence in climatology, physics, statistics and mathematics, environmental science, ecology and conservation, natural resource management and sustainability
- demonstrate a detailed knowledge of major environmental issues, human impacts and key climate mechanisms and apply this knowledge towards more sustainable environmental and resource management
- have a sound comprehension of the social, political and environmental implications of human impacts and global environmental changes
- apply the principles of sustainability in a wide diversity of professional opportunities

### Environment and Sustainability Major Courses

Courses	Semester(s) Offered	Mode
<a href="#">REN1201 Environmental Studies</a> *	1	ONC, ONL
<a href="#">REN2200 Ecology for Sustainability</a>	1	ONC, ONL
<a href="#">REN3301 Biodiversity and Conservation</a>	2	ONC, ONL
<a href="#">REN3302 Sustainable Resource Use</a> *	2	ONC, ONL
<a href="#">CLI1110 Weather and Climate</a>	1	ONC, ONL
<a href="#">CLI2201 Climate Change and Variability</a>	2	ONL
<a href="#">CLI3301 Climate and Environment Risk Assessment</a>	1	ONL
<a href="#">CLI3302 Adaptation to Climate Change</a>	2	ONL

### Footnotes

\* Available on-campus at Springfield and Toowoomba campuses.

## Second Major

Second majors can be chosen from any of the other eight-unit majors defined for the Bachelor of Science or, with the approval of the Faculty of Health, Engineering and Sciences, from other eight-unit majors from other undergraduate programs in the University.

There are a number of other courses, minors and majors with a focus on sustainability that students may wish to study.

## Minor Studies

Minor studies are a set of courses as defined in the [Minor Studies](#) section of the Handbook.

## Electives

General electives are courses chosen from other Level 1, 2 or 3 courses in the University. It is recommended that students choose [SCI3301 Science Project](#) as an elective. Students must not take more than ten level 1 courses in the program overall.

## Food Science (8-unit major)

### Food Science Courses

Courses	Semester(s) Offered	Mode
<a href="#">BIO1810 Introduction to Food Science</a>	1	ONC, ONL
<a href="#">CHE2810 Food Chemistry</a>	1	ONC, ONL
<a href="#">BIO2810 Nutrition and Health</a>	2	ONC, ONL
<a href="#">CHE2820 Principles of Food Analysis</a>	2	ONC, ONL
<a href="#">BIO3810 Food Processing</a>	1	ONC, ONL
<a href="#">BIO3811 Food Product Development</a>	2	ONC, ONL
<a href="#">BIO3820 Food Microbiology</a>	1	ONC, ONL
<a href="#">BIO3821 Food Quality Assurance</a>	2	ONC, ONL

## Human Physiology (8-unit major)

### Human Physiology Major Courses

Choose 8 courses from the following, with at least two being Level 3 courses (provided prerequisites have been met).

Courses	Semester(s) Offered	Mode
<a href="#">BIO1104 Medical Microbiology and Immunology 1</a>	2	ONC, EXT <sup>*</sup>
<a href="#">BIO1203 Human Anatomy and Physiology 1</a>	1,3	ONC, EXT <sup>*</sup>
<a href="#">BIO1204 Introduction to Biomedical Sciences</a>	1	ONC, EXT <sup>*</sup>
<a href="#">BIO1206 Human Anatomy and Physiology 2</a>	2	ONC, EXT <sup>*</sup>
<a href="#">BIO2118 Systems Physiology and Pharmacology</a>	1	ONC, EXT <sup>*</sup>
<a href="#">BIO2119 Biochemistry of Nutrition</a>	2	ONC, ONL
<a href="#">BIO2218 Concepts in Endocrinology</a>	2	ONC, EXT <sup>*</sup>
<a href="#">BIO3102 Human Pathophysiology</a>	1	ONL
<a href="#">BIO3103 Applications in Human Tissue Engineering</a>	1	EXT <sup>#</sup>
<a href="#">BIO3201 Extreme Physiology and Pharmacology</a>	2	ONC, ONL

### Footnotes

- \* This offering has a highly recommended residential school (linked to an assessment item and non-attendance will mean a student misses an element for assessment preparation or an element of assessment)
- # Students wishing to take this course should seek advice from the discipline coordinator. This offering requires attendance at a mandatory residential school (a mandatory residential school is compulsory and has an associated pass/fail assessment linked to the residential school attendance).

## Second Major

Second majors can be chosen from any of the other eight-unit majors defined for the Bachelor of Science or, with the approval of the Faculty of Health, Engineering and Sciences, from other eight-unit majors from other undergraduate programs in the University.

## Minor Studies

Minor studies are a set of courses as defined in the [Minor Studies](#) section of the Handbook. Students must not take more than ten level 1 courses in the program overall.

## Electives

General electives are courses chosen from other Level 1, 2 or 3 courses in the University.

## Mathematics (8-unit major)

### Mathematics Major Courses

Courses	Semester(s) Offered	Mode
<a href="#">MAT1102 Algebra and Calculus I</a>	1	ONC, ONL
<a href="#">MAT2409 High Performance Numerical Computing</a>	1	ONC, ONL
<a href="#">MAT2200 Operations Research 1</a>	2	ONC, ONL
<a href="#">MAT2100 Algebra and Calculus II</a>	2	ONC, ONL
<a href="#">MAT3103 Mathematical Modelling and Dynamical Systems*</a>	2	ONC, ONL
<a href="#">MAT3104 Mathematical Modelling in Financial Economics**</a>	2	ONC, ONL
<a href="#">MAT3105 Harmony of Partial Differential Equations*</a>	1	ONC, ONL
<a href="#">MAT3201 Operations Research 2**</a>	1	ONC, ONL

### Footnotes

- \* The on-campus offering of this course is offered in even years only.
- \*\* The on-campus offering of this course is offered in odd years only.

To complete the award, students taking an eight-unit major must undertake either:

- one further 8 unit second major and 4 units of general elective courses or
- a further 12 units of approved courses negotiated with the Faculty of Health, Engineering and Sciences.

## Second major

Second majors can be chosen from any of the other eight-unit majors defined for the Bachelor of Science or, with the approval of the Faculty of Health, Engineering and Sciences, from other eight-unit majors from other undergraduate programs in the University.

## Minor studies

Minor studies are a set of courses as defined in the [Minor Studies](#) section of the Handbook.

## Electives

General electives are courses chosen from other Level 1, 2 or 3 courses in the University. Students must not take more than ten level 1 courses in the program overall.

## Unsuitable electives

Students will require approval from the Faculty of Health, Engineering and Sciences if they wish to include [MAT1000 Mathematics Fundamentals](#), [MAT1100 Foundation Mathematics](#), [ENM1500 Introductory Engineering Mathematics](#), [MAC1901](#) and [CSC1402](#) as electives towards the Bachelor of Science program majoring in Mathematics.

## Physical Sciences (8-unit major)

### Physical Sciences Major Courses

Courses	Semester(s) Offered	Mode
<a href="#">PHY1104 Physics 1</a>	1	ONL
<a href="#">PHY1911 Physics 2</a>	2	ONL
<a href="#">PHY1101 Astronomy 1</a>	1	ONL
<a href="#">PHY1107 Astronomy 2</a>	2	ONL
<a href="#">PHY2204 Astronomical Techniques</a>	1	ONL
<a href="#">PHY2206 Medical Physics</a>	2	ONL
<a href="#">PHY3303 Modern Physics</a>	1	EXT*
<a href="#">PHY3304 Photonics</a> <sup>^</sup>	2	EXT*

#### Footnotes

\* This offering has a highly recommended residential school (linked to an assessment item and non-attendance will mean a student misses an element for assessment preparation or an element of assessment).

<sup>^</sup> Students who have completed PHYS313 through UNE are unable to enrol in PHY3304.

#### Notes:

Inclusion of the courses [MAT1102 Algebra and Calculus I](#), [MAT2100 Algebra and Calculus II](#), [MAT2409 High Performance Numerical Computing](#) and [SCI3301 Science Project](#) is recommended if intending to apply for Australian Institute of Physics (AIP) membership upon graduation.

### Second Major

Second majors can be chosen from any of the other eight-unit majors defined for the Bachelor of Science (except Astronomical and Space Sciences) or, with the approval of the Faculty of Health, Engineering and Sciences, from other eight-unit majors from other undergraduate programs in the University.

### Minor Studies

Minor studies are a set of courses as defined in the [Minor Studies](#) section of the Handbook.

### Electives

General electives are courses chosen from other Level 1, 2 or 3 courses in the University. Students must not take more than ten level 1 courses in the program overall.

## Plant Agricultural Science (8-unit major)

### Plant Agricultural Science Major Courses

Courses	Semester(s) Offered	Mode
<a href="#">BIO1101 Biology 1</a>	1	ONC, EXT*
<a href="#">AGR2301 Agricultural Science</a>	2	ONC, ONL
<a href="#">BIO2202 Plant Physiology</a>	2	ONC, EXT*
<a href="#">BIO2219 Genetics</a>	2	ONC, ONL
<a href="#">AGR2303 Agronomy</a>	1	ONC, ONL
<a href="#">AGR3304 Soil Science</a>	1	ONC, ONL

<a href="#">AGR3303 Agricultural Materials and Post-Harvest Technologies</a>	1	ONC, ONL
<a href="#">BIO3318 Plant Microbe Interactions</a>	2	ONC, EXT*

#### Footnotes

\* This offering has a highly recommended residential school (linked to an assessment item and non-attendance will mean a student misses an element for assessment preparation or an element of assessment).

## Wine Science (8-unit major)

### Wine Science Major Courses

Courses	Semester(s) Offered	Mode
<a href="#">WIN1101 Grape and Wine Production</a>	1	ONL
<a href="#">WIN2200 Viticultural and Winemaking Practice</a>	1	EXT**
<a href="#">WIN2215 Wine Biochemistry and Microbiology</a>	2	ONL
<a href="#">WIN2210 Viticultural Principles and Production</a>	1	ONL
<a href="#">WIN2220 Wine Production</a>	2	ONL
<a href="#">WIN3310 Wine Sensory Analysis</a>	1	EXT**
<a href="#">WIN3304 Viticultural and Winemaking Practice 2</a>	3	ONC**
<a href="#">SCI3302 Industry Placement</a>	1, 2, 3	ONC, EXT

#### Footnotes

\*\* This offering requires attendance at a mandatory residential school.

### Second Major

Second majors can be chosen from any of the other eight-unit majors defined for the Bachelor of Science or, with the approval of the Faculty of Health, Engineering and Sciences, from other eight-unit majors from other undergraduate programs in the University.

### Minor Studies

Minor studies are a set of courses as defined in the [Minor Studies](#) section of the Handbook.

### Electives

General electives are courses chosen from other Level 1, 2 or 3 courses in the University. Students must not take more than ten level 1 courses in the program overall.

### IT requirements

Students should visit the USQ [minimum computing standards](#) to check that their computers are capable of running the appropriate software and versions of Internet web browsers and to check the minimum and recommended standards for software.

### Residential schools

The attendance requirement of residential schools within this degree is indicated by the following letters: V = Voluntary; O = Optional; C = Compulsory; R = Recommended; HR = Highly Recommended; M = Mandatory. Find out more about [residential schools](#), visit the [Residential School Schedule](#) to view specific dates for your degree, or visit the [Policy and Procedure Library](#).

Highly recommended residential school (linked to an assessment item and non-attendance will mean a student misses an element for assessment preparation or an element of assessment).

Mandatory residential school (compulsory and has an associated pass/fail linked to the residential school attendance).

Certain courses within some of the majors involve residential schools:

## Biology

*Core major courses:*

- [BIO1101 Biology 1](#)
- [BIO2103 Biology 2](#)

*Core major approved courses:*

- [BIO2202 Plant Physiology](#)
- [BIO1104 Medical Microbiology and Immunology 1](#)
- [CHE1110 Chemistry 1](#)
- [CHE2120 Chemistry 2](#)
- [BIO3318 Plant Microbe Interactions](#)

## Counselling

- [CDS1002 Counselling Skills](#)
- [CDS1001 Human Relations and Communications](#)
- [CDS3001 Assessment and Report Writing in Counselling](#)
- [CDS3002 Counselling Theory and Practice](#)
- [CDS3004 Counselling Theory and Practice 2](#)
- [CDS3005 Counselling Theory and Practice 3](#)

## Human Physiology

- [BIO1104 Medical Microbiology and Immunology 1](#)
- [BIO1203 Human Anatomy and Physiology 1](#)
- [BIO1204 Introduction to Biomedical Sciences](#)
- [BIO1206 Human Anatomy and Physiology 2](#)
- [BIO2118 Systems Physiology and Pharmacology](#)
- [BIO2218 Concepts in Endocrinology](#)
- [BIO3103 Applications in Human Tissue Engineering](#)

## Physical Sciences and Astronomical and Space Sciences

- [PHY3303 Modern Physics](#)
- [PHY3304 Photonics](#)

## Plant Agricultural Science

- [BIO1101 Biology 1](#)
- [BIO2202 Plant Physiology](#)
- [BIO3318 Plant Microbe Interactions](#)

## Wine Science

- [WIN2200 Viticultural and Winemaking Practice](#)
- [WIN3304 Viticultural and Winemaking Practice 2](#)
- [WIN3310 Wine Sensory Analysis](#)

## Related programs

### Requirements for entry to Master of Learning and Teaching

Students intending to become secondary school teachers are advised that they may need to complete a postgraduate teacher entry qualification (such as the two-year [MOLT Master of Learning and Teaching](#)) after completion of their undergraduate program. For further information, students should refer to the Education section of this Handbook or address enquiries to the Faculty of Business, Education, Law and Arts.

### Exit points

Students who, for whatever reason, are unable to complete the Bachelor of Science and who satisfy all of the requirements may exit with a [DPSC Diploma of Science](#) (Environment and Sustainability) or a [DPSC Diploma of Science](#) (Physical Sciences).

### Credit

Exemptions/credit will be assessed based on the [USQ Credit and Exemption Procedure](#).

For PSY course exemptions – Psychology courses taken at another university or institution will only be considered for psychology exemptions if the courses were part of an APAC (Australian Psychology Accreditation Council) accredited sequence. APAC regulations clearly state that only courses taken within an APAC sequence can be used for exemptions from any PSY courses.

Transferring students - students who transfer into the BSCI from another USQ program, such as the [BHMS Bachelor of Human Services](#) (Counselling), will have all relevant courses transferred as per USQ policy. Completed courses will be transferred and treated as non-psychology general electives as per to APAC regulations. For example, [EDC1100 Childhood Development \(Birth - 12 years\)](#) will be treated as a non-psychology general elective as it is not equivalent to [PSY2030 Developmental Psychology](#) and does not form part of an APAC accredited sequence.

### Recommended enrolment pattern - Psychology Extended

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.

Students studying part-time should complete the major in a logical sequence as to reflect as close as possible the enrolment pattern below.

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	
<b>Year 1</b>							
<a href="#">SCI1001 Succeeding in Science</a>	1	1			2	1	
<a href="#">CMS1000 Communication and Scholarship</a>	1	1			1	1,2,3	Enrolment is not permitted in <a href="#">CMS1000</a> if <a href="#">MGT1200</a> has been previously completed.
<a href="#">PSY1010 Foundation Psychology A</a>	1	1			1	1,3	
General Elective	1	1			2	1	
<a href="#">PSY1030 Cross-Cultural and Indigenous Psychology</a>	1	2			1	2,3	
<a href="#">PSY1020 Foundation Psychology B</a>	1	2			1	1, 2	
<a href="#">STA2300 Data Analysis</a> *	1	2			3	1,2,3	Enrolment is not permitted in <a href="#">STA2300</a> if <a href="#">STA8170</a> or <a href="#">STA3100</a> has been previously completed.
General Elective	1	2			2	2	
<b>Year 2</b>							
<a href="#">PSY2010 Social Processes of Behaviour</a>	2	1			3	1	Pre-requisite: <a href="#">PSY1010</a>
<a href="#">PSY2020 Motivation and Emotion</a>	2	1			3	1	Pre-requisite: <a href="#">PSY1010</a>

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	
<a href="#">PSY2100 Research Methods in Psychology A</a>	2	1			4	1	Pre-requisite: <a href="#">PSY1010</a> and <a href="#">STA2300</a> . For students enrolled in Program BSSC with a major in BES: <a href="#">PSY1010</a> and <a href="#">STA3100</a>
General Elective	2	1			4	1	
<a href="#">PSY2030 Developmental Psychology</a>	2	2			3	2	Pre-requisite: <a href="#">PSY1010</a>
<a href="#">PSY2040 Human Information Processing</a>	2	2			4	2	Pre-requisite: <a href="#">PSY1020</a> and ( <a href="#">PSY2100</a> or <a href="#">STA2300</a> )
<a href="#">PSY3111 Research Methods in Psychology B</a>	2	2			4	2	Pre-requisite: <a href="#">PSY2100</a>
General Elective	2	2			3	2	
<b>Year 3</b>							
<a href="#">PSY3010 Assessment of Behaviour</a> <sup>#</sup>	3	1			5	1	Pre-requisite: <a href="#">PSY2100</a>
<a href="#">PSY3030 Abnormal Psychology</a>	3	1			5	1	Pre-requisite: <a href="#">PSY2020</a>
<a href="#">PSY4080 Psychology Complementary Studies A</a>	3	1					
<a href="#">PSY3060 Learning and Behaviour Change</a>	3	1			5	1	Pre-requisite: <a href="#">PSY1020</a>
<a href="#">PSY3050 Counselling Psychology</a>	3	2			5	2	Pre-requisite: <a href="#">PSY2020</a>
<a href="#">PSY4090 Psychology Complementary Studies B</a>	3	2					
Psychology Elective (from list)	3	2			5	2	
Psychology Elective (from list)	3	2			5	2	

#### Footnotes

\* [STA2300](#) should be taken in Year 1, Semester 2 (full-time students) and Year 3, Semester 3 (part-time and external students). Students should note the statistical program used in [STA2300](#), [PSY2100](#), and [PSY3111](#) is SPSS. Students need to be able to access or purchase SPSS. At the present time the SPSS base graduate package that is set for the three courses comes with a 12 months licence. It is therefore critical that students who purchase SPSS complete [STA2300](#), [PSY2100](#), and [PSY3111](#) within a 12 month period. This is possible by taking [STA2300](#) in S3.

# The Toowoomba on-campus offer will not be available in 2019.

## Recommended enrolment pattern - Information Technology

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.

Students studying part-time should complete the major in a logical sequence as to reflect as close as possible the enrolment pattern below.

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	
<b>Year 1</b>							
<a href="#">CSC1401 Foundation Programming</a>	1	1, 2			2	1, 2	
<a href="#">ELE1301 Computer Engineering</a>	1	1			1	1	
<a href="#">CIS1000 Information Systems Concepts</a>	1	1			2	1	
<a href="#">MAT1101 Discrete Mathematics for Computing</a>	1	1			1	1	
Two specified electives from the major list <sup>*</sup>	1	1, 2			2	2	
<a href="#">CMS1000 Communication and Scholarship</a>	1	2			1	2	Enrolment is not permitted in <a href="#">CMS1000</a> if <a href="#">MGT1200</a> has been previously completed.
<a href="#">STA2300 Data Analysis</a>	1	2			1	2	Enrolment is not permitted in <a href="#">STA2300</a> if <a href="#">STA8170</a> or <a href="#">STA3100</a> has been previously completed.
<b>Year 2</b>							
<a href="#">CSC2402 Object-Oriented Programming in C++</a>	2	1			3	1	Pre-requisite: <a href="#">CSC1401</a> or Students must be enrolled in one of the following Programs:



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	
							GDT1 or GCSC or GCEN or METC or MCOT or MCTE or MCOP or MPIT or MCTN
Three specified electives from the major list *	2	1			3	1	
<a href="#">CSC2401 Algorithms and Data Structures</a>	2	2			2	2	Pre-requisite: <a href="#">CSC2402</a> or Students must be enrolled in one of the following Programs: GDT1 or GCSC or GCEN or METC or MCOT or MCTE or MCOP or MPIT
<a href="#">CSC2408 Software Development Tools</a>	2	2			4	1, 2	
One specified elective from the major list *	2	2			4	2	
One general elective or course from the second major	2	2			4	2	
<b>Year 3</b>							
<a href="#">CSC3600 ICT Professional Project</a>	3	1			5	1,2	Pre-requisite: Students must have satisfactorily completed <a href="#">CIS3002</a> Business Analysis and at least 16 courses including seven BITC core courses other than this course.
Seven general electives or courses from the second major	3	1, 2			5,6	1,2	

#### Footnotes

\* In total, at least three courses chosen from the list of electives for the major must be at Level 3.

## Recommended Enrolment Pattern - 12 unit major - Astronomical and Space Sciences

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.

Students studying part-time should complete the major in a logical sequence as to reflect as close as possible the enrolment pattern below.

Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
<b>Year 1</b>								
<a href="#">PHY1104 Physics 1</a>					1	1		
<a href="#">PHY1101 Astronomy 1</a>					1	1		
<a href="#">MAT1102 Algebra and Calculus I</a>	1	1			1	1		
<a href="#">MAT1101 Discrete Mathematics for Computing</a>	1	1			1	1		
<a href="#">CMS1100 Communicating in the Sciences</a>					1	1,2		
<a href="#">CSC2410 Computational Thinking with Python</a>	1	2			1	2		
<a href="#">PHY1911 Physics 2</a>					1	2		
<a href="#">PHY1107 Astronomy 2</a>					1	2		
<b>Year 2</b>								
<a href="#">PHY3303 Modern Physics</a> #			2	1			HR	
<a href="#">MAT2409 High Performance Numerical Computing</a>	2	1			2	1	Pre-requisite: ( <a href="#">CSC2410</a> or <a href="#">CSC1401</a> ) and ( <a href="#">MAT1102</a> or <a href="#">ENM1600</a> ) or Students must be enrolled in one of the following Programs: MPIT or MCOT or MCTE	
<a href="#">PHY2204 Astronomical Techniques</a>					2	1	Pre-requisite: <a href="#">PHY1104</a> and <a href="#">PHY1911</a>	
Course selected from 2nd major area or minor or general elective	2	1			2	1		

Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
<a href="#">PHY2207 Optics</a>					2	2		
<a href="#">PHY2208 Planetary and Exoplanetary Science</a>					2	2		Pre-requisite: <a href="#">PHY1104</a> and <a href="#">PHY1911</a>
<a href="#">MAT2100 Algebra and Calculus II</a>	2	2			2	2		Pre-requisite: <a href="#">MAT1102</a> or <a href="#">MAT1502</a> or <a href="#">ENM1600</a> or S tudents must be enrolled in the following program: MSCN or MEPR
<a href="#">STA2300 Data Analysis</a>	2	1,2			2	1,2,3		Enrolment is not permitted in <a href="#">STA2300</a> if <a href="#">STA8170</a> or <a href="#">STA3100</a> has been previously completed.
<b>Year 3</b>								
<a href="#">PHY3305 Quantum Mechanics</a>					3	1		Pre-requisite: <a href="#">PHY3303</a>
<a href="#">PHY3306 Solar and Stellar Astronomy</a>					3	1		Pre-requisite: <a href="#">PHY1104</a> and <a href="#">PHY1911</a>
Course selected from 2nd major area or minor or general elective	3	1			3	1		
<a href="#">SCI3301 Science Project</a>					3	1,2		
Course selected from 2nd major area or minor or general elective	3	2			3	2		
<a href="#">PHY3304 Photonics</a> <sup>#</sup>			3	2			HR	
<a href="#">PHY3307 Galactic and Extragalactic Astronomy</a>					3	2		Pre-requisite: <a href="#">PHY1104</a> and <a href="#">PHY1911</a>
Course selected from 2nd major area or minor or general elective	3	2			3	2		

#### Footnotes

# This offering has a highly recommended residential school (linked to an assessment item and non-attendance will mean a student misses an element for assessment preparation or an element of assessment).

## Recommended enrolment pattern - Mathematics and Statistics

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.

Students studying part-time should complete the major in a logical sequence as to reflect as close as possible the enrolment pattern below.

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	
<b>Year 1</b>							
<a href="#">CMS1100 Communicating in the Sciences</a>	1	1			1	1, 2	
<a href="#">SCI1001 Succeeding in Science</a>	1	1			1	1	
<a href="#">MAT1102 Algebra and Calculus I</a>	1	1			1	1	
<a href="#">STA2300 Data Analysis</a>	1	1,2			1	1,2,3	Enrolment is not permitted in <a href="#">STA2300</a> if <a href="#">STA8170</a> or <a href="#">STA3100</a> has been previously completed.
<a href="#">CSC2410 Computational Thinking with Python</a>	1	2			1	2	
<a href="#">MAT2200 Operations Research 1</a>	1	2			1	2	Pre-requisite: <a href="#">MAT1102</a> or <a href="#">ENM1600</a> or e quivalent or approval from the examiner. Enrolment is not permitted in <a href="#">MAT2200</a> if <a href="#">MAT1200</a> has been previously completed.

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	
<a href="#">MAT2100 Algebra and Calculus II</a>	1	2			1	2	Pre-requisite: <a href="#">MAT1102</a> or MAT1502 or <a href="#">ENM1600</a> or Students must be enrolled in the following program: MSCN or MEPR
General Elective (or second major)	1	2			1	2	
<b>Year 2</b>							
<a href="#">MAT2409 High Performance Numerical Computing</a>	2	1			2	1	Pre-requisite: ( <a href="#">CSC2410</a> or <a href="#">CSC1401</a> ) and ( <a href="#">MAT1102</a> or <a href="#">ENM1600</a> ) or Students must be enrolled in one of the following Programs: MPIT or MCOT or MCTE
<a href="#">STA2301 Distribution Theory</a>	2	1			2	1	Pre-requisite: <a href="#">STA2300</a> and ( <a href="#">MAT1102</a> or <a href="#">ENM1600</a> )
<a href="#">STA3300 Experimental Design</a> <sup>#</sup>	2	1			2	1	Pre-requisite: <a href="#">STA2300</a> or approval of examiner
General Elective (or second major)	2	1			2	1	
<a href="#">STA2302 Statistical Inference</a>	2	2			2	2	Pre-requisite: <a href="#">STA2301</a>
<a href="#">STA3301 Statistical Models</a>	2	2			2	2	Pre-requisite: <a href="#">STA3300</a> or approval of examiner
General Elective or second major	2	2			2	2	
General Elective or second major	2	2			2	2	
<b>Year 3</b>							
Approved Mathematics and Statistics major course	3	1,2			3	1,2	
Approved Mathematics and Statistics major course	3	1			3	1	
Approved Mathematics and Statistics major course or General Elective or second major course	3	1			3	1	
General Elective or second major	3	1			3	1	
General Elective or second major	3	2			3	2	
General Elective or second major	3	2			3	2	
Approved Mathematics and Statistics major course	3	2			3	2	
Approved Mathematics and Statistics major course or General Elective or second major course	3	2			3	2	
<b>Approved Mathematics and Statistics major courses. Choose four of the following five courses:</b>							
<a href="#">MAT3105 Harmony of Partial Differential Equations</a> <sup>+</sup>	3	1			3	1	Pre-requisite: <a href="#">ENM2600</a> or <a href="#">MAT2100</a> or <a href="#">MAT2500</a>
<a href="#">MAT3201 Operations Research 2</a> <sup>*</sup>	3	1			3	1	Pre-requisite: <a href="#">MAT1200</a> or <a href="#">MAT2200</a>
<a href="#">STA3200 Multivariate Statistical Methods</a>					3	1	Pre-requisite: <a href="#">STA2300</a>
<a href="#">MAT3103 Mathematical Modelling and Dynamical Systems</a> <sup>+</sup>	3	2			3	2	Pre-requisite: <a href="#">MAT2100</a> or <a href="#">MAT2500</a> or <a href="#">ENM2600</a>
<a href="#">MAT3104 Mathematical Modelling in Financial Economics</a> <sup>*</sup>	3	2			3	2	Pre-requisite: ( <a href="#">MAT2100</a> and <a href="#">STA2300</a> ) or ( <a href="#">MAT2500</a> and <a href="#">STA2300</a> ) or ( <a href="#">ENM2600</a> and <a href="#">STA2300</a> )

#### Footnotes

# Not available in on-campus mode in 2019

+ The on-campus offering of this course is offered in even-numbered years only.

\* The on-campus offering of this course is offered in odd-numbered years only.

### Recommended enrolment pattern - Psychology

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.

Students studying part-time should complete the major in a logical sequence as to reflect as close as possible the enrolment pattern below.

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	
<b>Year 1</b>							
<a href="#">SCI1001 Succeeding in Science</a>	1	1			1	1	
<a href="#">CMS1000 Communication and Scholarship</a>	1	1			1	1,2,3	Enrolment is not permitted in <a href="#">CMS1000</a> if <a href="#">MGT1200</a> has been previously completed.
<a href="#">PSY1010 Foundation Psychology A</a>	1	1			1	1,3	
General Elective	1	1			2	1	
<a href="#">PSY1030 Cross-Cultural and Indigenous Psychology</a>	1	2			1	2,3	
<a href="#">PSY1020 Foundation Psychology B</a>	1	2			1	1, 2	
<a href="#">STA2300 Data Analysis</a> *	1	2			3	1,2,3	Enrolment is not permitted in <a href="#">STA2300</a> if <a href="#">STA8170</a> or <a href="#">STA3100</a> has been previously completed.
General Elective	1	2			2	2	
<b>Year 2</b>							
<a href="#">PSY2010 Social Processes of Behaviour</a>	2	1			3	1	Pre-requisite: <a href="#">PSY1010</a>
<a href="#">PSY2020 Motivation and Emotion</a>	2	1			3	1	Pre-requisite: <a href="#">PSY1010</a>
<a href="#">PSY2100 Research Methods in Psychology A</a>	2	1			4	1	Pre-requisite: <a href="#">PSY1010</a> and <a href="#">STA2300</a> . For students enrolled in Program BSSC with a major in BES: <a href="#">PSY1010</a> and <a href="#">STA3100</a>
General Elective	2	1			4	1	
<a href="#">PSY2030 Developmental Psychology</a>	2	2			3	2	Pre-requisite: <a href="#">PSY1010</a>
<a href="#">PSY2040 Human Information Processing</a>	2	2			4	2	Pre-requisite: <a href="#">PSY1020</a> and ( <a href="#">PSY2100</a> or <a href="#">STA2300</a> )
<a href="#">PSY3111 Research Methods in Psychology B</a>	2	2			4	2	Pre-requisite: <a href="#">PSY2100</a>
General Elective	2	2			3	2	
<b>Year 3</b>							
<a href="#">PSY3010 Assessment of Behaviour</a> #	3	1			5	1	Pre-requisite: <a href="#">PSY2100</a>
<a href="#">PSY3030 Abnormal Psychology</a>	3	1			5	1	Pre-requisite: <a href="#">PSY2020</a>
<a href="#">PSY3060 Learning and Behaviour Change</a>	3	1			6	1	Pre-requisite: <a href="#">PSY1020</a>
General Elective	3	1			6	1	
<a href="#">PSY3050 Counselling Psychology</a>	3	2			5	2	Pre-requisite: <a href="#">PSY2020</a>
General Elective	3	2			6	2	
General Elective	3	2			6	2	
General Elective	3	2			6	2	

#### Footnotes

\* [STA2300](#) should be taken in Year 1, Semester 2 (full-time students) and Year 3, Semester 3 (part-time and external students). Students should note the statistical program used in [STA2300](#), [PSY2100](#), and [PSY3111](#) is SPSS. Students need to be able to access or purchase SPSS. At the present time the SPSS base graduate package that is set for the three courses comes with a 12 months licence. It is therefore critical that students who purchase SPSS complete [STA2300](#), [PSY2100](#), and [PSY3111](#) within a 12 month period. This is possible by taking [STA2300](#) in S3.

# The Toowoomba on-campus offer will not be available in 2019.

## Recommended enrolment pattern - 8-unit majors - Biology, Computing, Environment and Sustainability, Human Physiology, Mathematics, Physical Sciences and Wine Science

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.

Students studying part-time should complete the major in a logical sequence as to reflect as close as possible the enrolment pattern below.

Students undertaking an eight-unit major as a first major should:

- study the beginning of this section that describes the program structure and requirements for the award of the Bachelor of Science. Notably four units in the program must be at level 3.
- select at least one major from the eight-unit majors listed in the previous pages. Select courses from that/those major(s) bearing in mind the requirements for the award and possible pre-requisite requirements. It is strongly suggested that students start with core courses and level 1 courses in their first year of study and progress to level 2 and level 3 courses in their second and third years of study respectively.
- select elective courses. Students should refer to the courses in the [Minor Studies](#) section of the Handbook to help with the selection of elective courses. Students may select their electives as a package as described in the [Minor Studies](#) section, or they may select any courses of interest providing they obtain approval from the Faculty of Health, Engineering and Sciences
- having arrived at an appropriate enrolment plan construct a table detailing the intended progression through the program.
- contact the Faculty of Health, Engineering and Sciences when they arrive at the University, or before they arrive to verify that their selection is appropriate.

There is sufficient flexibility in the Bachelor of Science requirements to allow individual students to design a program well suited to their needs. Students should contact the Faculty of Health, Engineering and Sciences to discuss their program structure as major combinations are timetable dependent.

### Recommended Enrolment Pattern - 8 unit major - Biology

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.

Students studying part-time should complete the major in a logical sequence as to reflect as close as possible the enrolment pattern below.

To complete the award, students taking an eight-unit major must undertake either:

- one further 8 unit second major and 4 units of elective courses or
- a further 12 units of elective courses negotiated with the Faculty of Health, Engineering and Sciences.

Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
<b>Year 1</b>								
<a href="#">BIO1101 Biology 1</a> *	1	1	1	1			HR	
<a href="#">SCI1001 Succeeding in Science</a>	1	1			1	1		
<a href="#">CMS1100 Communicating in the Sciences</a>	1	1			1	1,2		
<a href="#">STA2300 Data Analysis</a>	1	1,2			1	1,2,3		Enrolment is not permitted in <a href="#">STA2300</a> if <a href="#">STA8170</a> or <a href="#">STA3100</a> has been previously completed.
<a href="#">MAT1100 Foundation Mathematics</a>	1	2			1	2		
<a href="#">BIO2103 Biology 2</a> *	1	2	1	2			HR	Pre-requisite: <a href="#">BIO1101</a>
<b>Six (6) of the following courses, with at least two being Level 3 courses (provided prerequisites have been met):</b>								
<a href="#">BIO1104 Medical Microbiology and Immunology 1</a> *	1	2	1	2			HR	
<a href="#">REN1201 Environmental Studies</a>	1	1			1	1		
<a href="#">CHE1110 Chemistry 1</a> *	1	1	1	1			HR	
<a href="#">BIO2219 Genetics</a>	2	2			2	2		Pre-requisite: ( <a href="#">BIO1100</a> or <a href="#">BIO1101</a> or <a href="#">BIO1204</a> )

Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
<a href="#">CHE2120 Chemistry 2</a> *	1	2	1	2			HR	Pre-requisite: <a href="#">CHE1110</a>
<a href="#">BIO2107 Cell and Molecular Biology 1</a>	2	1			2	1		Pre-requisite: <a href="#">CHE2120</a>
<a href="#">REN2200 Ecology for Sustainability</a>	2	1			2	1		
<a href="#">BIO2202 Plant Physiology</a> *	2	2	2	2			HR	Pre-requisite: <a href="#">BIO1101</a>
<a href="#">BIO3318 Plant Microbe Interactions</a>	3	2	3	2			HR	Pre-requisite: <a href="#">BIO1101</a> or <a href="#">BIO1100</a>
<a href="#">BIO3207 Cell and Molecular Biology 2</a>	3	2			3	2		Pre-requisite: <a href="#">BIO2107</a>
<a href="#">REN3301 Biodiversity and Conservation</a>	3	2			3	2		

#### Footnotes

\* This offering has a highly recommended residential school (linked to an assessment item and non-attendance will mean a student misses an element for assessment preparation or an element of assessment).

## Recommended Enrolment Pattern - 8 unit major - Computing

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.

Students studying part-time should complete the major in a logical sequence as to reflect as close as possible the enrolment pattern below.

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	
<b>Year 1</b>							
<a href="#">ELE1301 Computer Engineering</a>	1	1			1	1	
<a href="#">MAT1101 Discrete Mathematics for Computing</a>	1	1			1	1	
<a href="#">CSC1401 Foundation Programming</a>	1	1,2			1	1, 2, 3	
<a href="#">CMS1000 Communication and Scholarship</a>	1	1,2			1	1,2,3	Enrolment is not permitted in <a href="#">CMS1000</a> if <a href="#">MGT1200</a> has been previously completed.
<a href="#">CIS1000 Information Systems Concepts</a>	1	1,2,3			1	1,2,3	
<a href="#">STA2300 Data Analysis</a>	1	1,2			1	1,2,3	Enrolment is not permitted in <a href="#">STA2300</a> if <a href="#">STA8170</a> or <a href="#">STA3100</a> has been previously completed.
General Elective (or major 2)	1	2			1	2	
General Elective (or major 2)	1	2			1	2	
<b>Year 2</b>							
<a href="#">CSC2402 Object-Oriented Programming in C++</a>	2	1			2	1	Pre-requisite: <a href="#">CSC1401</a> or Students must be enrolled in one of the following Programs: <a href="#">GDT1</a> or <a href="#">GCSC</a> or <a href="#">GCEN</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="#">MCTN</a>
<a href="#">CSC2408 Software Development Tools</a>	2	1,2			2	1, 2	
General Elective (or major 2)	2	1			2	1	
General Elective (or major 2)	2	1			2	1	
<a href="#">CSC2401 Algorithms and Data Structures</a>	2	2			2	2	Pre-requisite: <a href="#">CSC2402</a> or Students must be enrolled in one of the following Programs: <a href="#">GDT1</a> or <a href="#">GCSC</a> or <a href="#">GCEN</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>
General Elective (or major 2)	2	2			2	2	
General Elective (or major 2)	2	2			2	2	
General Elective (or major 2)	2	2			2	2	

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	
<b>Year 3</b>							
Choose 3 of the following courses							
<a href="#">CSC2406 Web Technology 1</a>	2	2			2	2	Pre-requisite: <a href="#">CSC1401</a> or Students must be enrolled in one of the following Programs: GDTI or GCEN or METC or MCOT or MCTE or MCOP or MPIT or MCTN
<a href="#">CSC3400 Database Systems</a>	3	1			3	1	
<a href="#">CSC3403 Comparative Programming Languages</a>	3	1			3	1	Pre-requisite: <a href="#">CSC2402</a> or enrolled in <a href="#">CSC2402</a> at the same time as <a href="#">CSC3403</a> or Students must be enrolled in one of the following Programs: GDTI or GCSC or GCEN or METC or MCOT or MCTE or MCOP or MPIT
<a href="#">CSC3407 Network Fundamentals and Routing</a>	3	1			3	1	
<a href="#">CSC3412 System and Security Administration</a>	3	1			3	1	
<a href="#">CSC3413 Network Design and Analysis</a>	3	2			3	2	
<a href="#">CSC3426 Web Technology 2</a>	3	2			3	2	Pre-requisite: <a href="#">CSC2406</a>
<a href="#">CSC3420 Mobile Internet Technology</a>	3	1			3	1	Pre-requisite: <a href="#">CSC3407</a> or Students must be enrolled in one of the following Programs: GDTI or GCSC or GCEN or METC or MCOT or MCTE or MCOP or MPIT
<a href="#">CSC3427 Switching, Wireless and WAN Technologies</a>	3	2			3	2	Pre-requisite: <a href="#">CSC3407</a> or Students must be enrolled in one of the following Programs: GDTI or GCSC or GCEN or METC or MCOT or MCTE or MCOP or MPIT
General Elective (or major 2)	3	1,2			3	1,2	
General Elective (or major 2)	3	1,2			3	1,2	
General Elective (or major 2)	3	1,2			3	1,2	
General Elective (or major 2)	3	1,2			3	1,2	
General Elective (or major 2)	3	1,2			3	1,2	

## Recommended Enrolment Pattern - 8 unit major - Counselling

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.

Students studying part-time should complete the major in a logical sequence as to reflect as close as possible the enrolment pattern below.

Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
<b>Year 1</b>								
<a href="#">CMS1000 Communication and Scholarship</a>	1	1,2			1	1,2,3	Enrolment is not permitted in <a href="#">CMS1000</a> if <a href="#">MGT1200</a> has been previously completed.	
<a href="#">CDS1001 Human Relations and Communications</a>			1	1			R	
<a href="#">SCI1001 Succeeding in Science</a>	1	1,2			1	1		
General Elective or second Major	1	1			1	1		
<a href="#">CDS1002 Counselling Skills</a>			1	2			HR	
<a href="#">PSY1030 Cross-Cultural and Indigenous Psychology</a>	1	2			1	2,3		

Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
<a href="#">STA2300 Data Analysis</a>	1	2			1	2,3		Enrolment is not permitted in <a href="#">STA2300</a> if <a href="#">STA8170</a> or <a href="#">STA3100</a> has been previously completed.
General Elective or second Major	1	2			1	2		
<b>Year 2</b>								
<a href="#">CDS3002 Counselling Theory and Practice</a>			2	1			R	Pre-requisite: <a href="#">CDS1002</a> or ( <a href="#">PSY1010</a> and <a href="#">PSY1020</a> )
General Elective or second Major	2	1			2	1		
General Elective or second Major	2	1			2	1		
General Elective or second Major	2	1			2	1		
One of the following two courses:								
<a href="#">CDS3001 Assessment and Report Writing in Counselling</a>			2	2			R	Pre-requisite: Students must have successfully completed 8 units prior to enrolling
<a href="#">PSY2050 Facilitation and Negotiation</a>	2	2	2	2			HR	Pre-requisite: <a href="#">PSY1102</a> for students enrolled in the BPSH and BPSB programs and <a href="#">CDS1001</a> or <a href="#">CDS1002</a> for students enrolled in the BSCI (Counselling) major. Students from other programs who wish to take this course will need permission from the examiner.
General Elective or second Major	2	2			2	2		
General Elective or second Major	2	2			2	2		
General Elective or second Major	2	2			2	2		
<b>Year 3</b>								
<a href="#">CDS3004 Counselling Theory and Practice 2</a>			3	1			R	Pre-requisite or Co-requisite: <a href="#">CDS3002</a>
<a href="#">EDU5325 Child Abuse and Neglect: Intervention, Protection and Prevention</a> <sup>^</sup>					3	1		
General Elective or second Major	3	1			3	1		
General Elective or second Major	3	1			3	1		
Choose two of the following four courses:								
<a href="#">CDS3005 Counselling Theory and Practice 3</a>			3	2			R	Pre-requisite: <a href="#">CDS3004</a>
<a href="#">EDU5335 Emotional and Behavioural Problems of Children and Adolescents</a> <sup>^</sup>					3	2		
<a href="#">SCI3302 Industry Placement</a> <sup>~</sup>	3	1,2,3	3	1,2,3				Pre-requisite: Completion of 2nd year (or 2 years full time study in a relevant area)
<a href="#">PSY3101 Career Assessment and Development</a>					3	3		
General Elective or second Major	3	2			3	2		
General Elective or second Major	3	2			3	2		

#### Footnotes

<sup>^</sup> Students are required to enrol in [EDU5325](#) and [EDU5335](#) as early as possible in the required year of study as places are limited.

<sup>~</sup> Numbers of enrolments are limited. Students must have an approved placement before being able to enrol. Students should request to enrol by contacting USQ.



## Recommended Enrolment Pattern - 8 unit major - Environment and Sustainability

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.

Students studying part-time should complete the major in a logical sequence as to reflect as close as possible the enrolment pattern below.

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	
<b>Year 1</b>							
<a href="#">REN1201 Environmental Studies</a>	1	1			1	1	
<a href="#">CLI1110 Weather and Climate</a>	1	1			1	1	
<a href="#">SCI1001 Succeeding in Science</a>	1	1			1	1	
<a href="#">CMS1100 Communicating in the Sciences</a> *	1	1			1	1,2	
General Elective (or major 2)	1	2			1	2	
<a href="#">STA2300 Data Analysis</a>	1	2			1	2,3	Enrolment is not permitted in <a href="#">STA2300</a> if <a href="#">STA8170</a> or <a href="#">STA3100</a> has been previously completed.
<a href="#">MAT1100 Foundation Mathematics</a>	1	2			1	2	
General Elective (Or Major 2)	1	2			2	2	
<b>Year 2</b>							
<a href="#">REN2200 Ecology for Sustainability</a>	2	1			2	1	
General Elective (or major 2)	2	1			2	1	
General Elective (or major 2)	2	1			2	1	
General Elective (or major 2)	2	1			2	1	
<a href="#">REN3302 Sustainable Resource Use</a>	2	2			2	2	
<a href="#">CLI2201 Climate Change and Variability</a>					2	2	
General Elective (or major 2)	2	2			2	2	
General Elective (or major 2)	2	2			2	2	
<b>Year 3</b>							
<a href="#">CLI3301 Climate and Environment Risk Assessment</a>					3	1	
General Elective (or major 2)	3	1			3	1	
General Elective (or major 2)	3	1			3	1	
General Elective (or major 2)	3	1			3	1	
<a href="#">CLI3302 Adaptation to Climate Change</a>					3	2	
<a href="#">REN3301 Biodiversity and Conservation</a>	3	2			3	2	
General Elective (or major 2)	3	2			3	2	
General Elective (or major 2)	3	2			3	2	

### Footnotes

\* Students may choose [CMS1000 Communication and Scholarship](#) in lieu of [CMS1100 Communicating in the Sciences](#) if they wish.

## Recommended enrolment pattern - 8 unit major – Food Science

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.

Students studying part-time should complete the major in a logical sequence as to reflect as close as possible the enrolment pattern below.

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	
<b>Year 1</b>							
<a href="#">BIO1810 Introduction to Food Science</a>	1	1			1	1	
<a href="#">SCI1001 Succeeding in Science</a>	1	1			1	1	
<a href="#">CMS1100 Communicating in the Sciences</a>	1	1			1	1,2	
<a href="#">STA2300 Data Analysis</a>	1	1,2			1	1,2,3	Enrolment is not permitted in <a href="#">STA2300</a> if <a href="#">STA8170</a> or <a href="#">STA3100</a> has been previously completed.
<a href="#">MAT1100 Foundation Mathematics</a>	1	2			1	2	
General Elective (or major 2)	1	2			1	2	
General Elective (or major 2)	1	2			1	2	
General Elective (or major 2)	1	2			1	2	
<b>Year 2</b>							
<a href="#">CHE2810 Food Chemistry</a>	2	1			2	1	
General Elective (or major 2)	2	1			2	1	
General Elective (or major 2)	2	1			2	1	
General Elective (or major 2)	2	1			2	1	
<a href="#">CHE2820 Principles of Food Analysis</a>	2	2			2	2	
<a href="#">BIO2810 Nutrition and Health</a>	2	2			2	2	Pre-requisite: <a href="#">BIO1810</a> and <a href="#">CHE2810</a>
General Elective (or major 2)	2	2			2	2	
General Elective (or major 2)	2	2			2	2	
<b>Year 3</b>							
<a href="#">BIO3810 Food Processing</a>	3	1			3	1	Pre-requisite: <a href="#">CHE2810</a> and <a href="#">CHE2820</a>
<a href="#">BIO3820 Food Microbiology</a>	3	1			3	1	Pre-requisite: <a href="#">BIO1810</a> and <a href="#">CHE2810</a> and <a href="#">CHE2820</a>
General Elective (or major 2)	3	1			3	1	
General Elective (or major 2)	3	1			3	1	
<a href="#">BIO3811 Food Product Development</a>	3	2			3	2	Pre-requisite: <a href="#">BIO1810</a>
<a href="#">BIO3821 Food Quality Assurance</a>	3	2			3	2	Pre-requisite: <a href="#">CHE2820</a>
General Elective (or major 2)	3	2			3	2	
General Elective (or major 2)	3	2			3	2	

### Recommended enrolment pattern - 8 unit major - Human Physiology

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.

Students studying part-time should complete the major in a logical sequence as to reflect as close as possible the enrolment pattern below.

Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
<b>Year 1</b>								
<a href="#">BIO1204 Introduction to Biomedical Sciences</a> *	1	1	1	1			HR	
<a href="#">CMS1100 Communicating in the Sciences</a>	1	1			1	1		
<a href="#">SCI1001 Succeeding in Science</a>	1	1			1	1		

Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
<a href="#">BIO1203 Human Anatomy and Physiology 1</a> *	1	1	1	1,3			HR	
<a href="#">BIO1104 Medical Microbiology and Immunology 1</a> *	1	2	1	2			HR	
<a href="#">STA2300 Data Analysis</a>	1	2			1	2,3		Enrolment is not permitted in <a href="#">STA2300</a> if <a href="#">STA8170</a> or <a href="#">STA3100</a> has been previously completed.
<a href="#">MAT1100 Foundation Mathematics</a>	1	2			1	2		
<a href="#">BIO1206 Human Anatomy and Physiology 2</a> *	1	2	1	2			HR	Pre-requisite: <a href="#">BIO1203</a>
<b>Year 2</b>								
<a href="#">BIO2118 Systems Physiology and Pharmacology</a> *	2	1	2	1			HR	Pre-requisite: <a href="#">BIO1203</a>
General Elective (or major 2)	2	1			2	1		
General Elective (or major 2)	2	1			2	1		
General Elective (or major 2)	2	1			2	1		
<b>one of the following two courses :</b>								
<a href="#">BIO2119 Biochemistry of Nutrition</a>	2	2			2	2		Co-requisite: <a href="#">CHE2120</a>
General Elective (or major 2)	2	2			2	2		
<a href="#">BIO2218 Concepts in Endocrinology</a> *	2	2	2	2			HR	Pre-requisite: <a href="#">BIO2118</a>
General Elective (or major 2)	2	2			2	2		
General Elective (or major 2)	2	2			2	2		
<b>Year 3</b>								
<a href="#">BIO3103 Applications in Human Tissue Engineering</a> ^			3	1			M	Pre-requisite: <a href="#">BIO2220</a> Co-requisite: <a href="#">BIO3102</a>
<a href="#">BIO3102 Human Pathophysiology</a>					3	1		Pre-requisite: <a href="#">BIO2118</a> and <a href="#">BIO2218</a>
General Elective (or major 2)	3	1			3	1		
General Elective (or major 2)	3	1			3	1		
<a href="#">BIO3201 Extreme Physiology and Pharmacology</a>	3	2			3	2		Pre-requisite: <a href="#">BIO2118</a>
General Elective (or major 2)	3	2			3	2		
General Elective (or major 2)	3	2			3	2		
General Elective (or major 2)	3	2			3	2		

#### Footnotes

\* This offering has a highly recommended residential school (linked to an assessment item and non-attendance will mean a student misses an element for assessment preparation or an element of assessment).

^ Students wishing to take this course should seek advice from the Discipline Coordinator.

## Recommended enrolment pattern - 8 unit major - Mathematics

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.

Students studying part-time should complete the major in a logical sequence as to reflect as close as possible the enrolment pattern below

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	
<b>Year 1</b>							
<a href="#">CMS1100 Communicating in the Sciences</a>	1	1			1	1, 2	

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	
<a href="#">SCI1001 Succeeding in Science</a>	1	1			1	1	
<a href="#">MAT1102 Algebra and Calculus I</a>	1	1			1	1	
<a href="#">STA2300 Data Analysis</a>	1	1,2			1	1,2,3	Enrolment is not permitted in <a href="#">STA2300</a> if <a href="#">STA8170</a> or <a href="#">STA3100</a> has been previously completed.
<a href="#">CSC2410 Computational Thinking with Python</a>	1	2			1	2	
<a href="#">MAT2200 Operations Research 1</a>	1	2			1	2	Pre-requisite: <a href="#">MAT1102</a> or <a href="#">ENM1600</a> or equivalent or approval from the examiner. Enrolment is not permitted in <a href="#">MAT2200</a> if <a href="#">MAT1200</a> has been previously completed.
<a href="#">MAT2100 Algebra and Calculus II</a>	1	2			1	2	Pre-requisite: <a href="#">MAT1102</a> or <a href="#">MAT1502</a> or <a href="#">ENM1600</a> or Students must be enrolled in the following program: MSCN or MEPR
General Elective or second major	1	2			1	2	
<b>Year 2</b>							
<a href="#">MAT2409 High Performance Numerical Computing</a>	2	1			2	1	Pre-requisite: ( <a href="#">CSC2410</a> or <a href="#">CSC1401</a> ) and ( <a href="#">MAT1102</a> or <a href="#">ENM1600</a> ) or Students must be enrolled in one of the following Programs: MPIT or MCOT or MCTE
General Elective or second major	2	1			2	1	
General Elective or second major	2	1			2	1	
<b>one of the following two courses :</b>							
<a href="#">MAT3105 Harmony of Partial Differential Equations<sup>+</sup></a>	2	1			2	1	Pre-requisite: <a href="#">ENM2600</a> or <a href="#">MAT2100</a> or <a href="#">MAT2500</a>
<a href="#">MAT3201 Operations Research 2<sup>*</sup></a>	2	1			2	1	Pre-requisite: <a href="#">MAT1200</a> or <a href="#">MAT2200</a>
General Elective or second major	2	2			2	2	
General Elective or second major	2	2			2	2	
General Elective or second major	2	2			2	2	
<b>one of the following two courses :</b>							
<a href="#">MAT3103 Mathematical Modelling and Dynamical Systems<sup>+</sup></a>	2	2			2	2	Pre-requisite: <a href="#">MAT2100</a> or <a href="#">MAT2500</a> or <a href="#">ENM2600</a>
<a href="#">MAT3104 Mathematical Modelling in Financial Economics<sup>*</sup></a>	2	2			2	2	Pre-requisite: ( <a href="#">MAT2100</a> and <a href="#">STA2300</a> ) or ( <a href="#">MAT2500</a> and <a href="#">STA2300</a> ) or ( <a href="#">ENM2600</a> and <a href="#">STA2300</a> )
<b>Year 3</b>							
General Elective or second major	3	1			3	1	
General Elective or second major	3	1			3	1	
General Elective or second major	3	1			3	1	
<b>one of the following two courses :</b>							
<a href="#">MAT3105 Harmony of Partial Differential Equations<sup>+</sup></a>	3	1			3	1	Pre-requisite: <a href="#">ENM2600</a> or <a href="#">MAT2100</a> or <a href="#">MAT2500</a>
<a href="#">MAT3201 Operations Research 2<sup>*</sup></a>	3	1			3	1	Pre-requisite: <a href="#">MAT1200</a> or <a href="#">MAT2200</a>
General Elective or second major	3	2			3	2	
General Elective or second major	3	2			3	2	
General Elective or second major	3	2			3	2	
<b>one of the following two courses :</b>							
<a href="#">MAT3103 Mathematical Modelling and Dynamical Systems<sup>+</sup></a>	3	2			3	2	Pre-requisite: <a href="#">MAT2100</a> or <a href="#">MAT2500</a> or <a href="#">ENM2600</a>

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	
<a href="#">MAT3104 Mathematical Modelling in Financial Economics</a> *	3	2			3	2	Pre-requisite: ( <a href="#">MAT2100</a> and <a href="#">STA2300</a> ) or ( <a href="#">MAT2500</a> and <a href="#">STA2300</a> ) or ( <a href="#">ENM2600</a> and <a href="#">STA2300</a> )

#### Footnotes

+ The on-campus offering of this course is offered in even-numbered years only.

\* The on-campus offering of this course is offered in odd-numbered years only.

## Recommended Enrolment Pattern - 8 unit major - Physical Sciences

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.

Students studying part-time should complete the major in a logical sequence as to reflect as close as possible the enrolment pattern below.

Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
<b>Year 1</b>								
<a href="#">PHY1104 Physics 1</a>					1	1		
Course selected from 2nd major area or minor or general electives	1	1			1	1		
<a href="#">CMS1100 Communicating in the Sciences</a>	1	1,2			1	1,2		
Course selected from 2nd major area or minor or general electives	1	1			1	1		
<a href="#">PHY1911 Physics 2</a>					1	2		
<a href="#">MAT1100 Foundation Mathematics</a>	1	2			1	2		
<a href="#">CSC2410 Computational Thinking with Python</a>	1	2			1	2		
Course selected from 2nd major area or minor or general electives	1	2			1	2		
<b>Year 2</b>								
<a href="#">PHY1101 Astronomy 1</a>					1	1		
<a href="#">PHY2204 Astronomical Techniques</a>					2	1		Pre-requisite: <a href="#">PHY1104</a> and <a href="#">PHY1911</a>
<a href="#">STA2300 Data Analysis</a>	2	1, 2			2	1,2		Enrolment is not permitted in <a href="#">STA2300</a> if <a href="#">STA8170</a> or <a href="#">STA3100</a> has been previously completed.
Course selected from 2nd major area or minor or general elective	2	1			2	1		
<a href="#">PHY2206 Medical Physics</a>					2	2		
<a href="#">PHY1107 Astronomy 2</a>					2	2		
Course selected from 2nd major area or minor or general elective	2	2			2	2		
Course selected from 2nd major area or minor or general elective	2	2			2	2		
<b>Year 3</b>								
<a href="#">PHY3303 Modern Physics</a> #			3	1			HR	
Course selected from 2nd major area or minor or general elective	3	1			3	1		

Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
Course selected from 2nd major area or minor or general elective	3	1			3	1		
Course selected from 2nd major area or minor or general elective	3	1			3	1		
<a href="#">PHY3304 Photonics</a> **#			3	2			HR	
Course selected from 2nd major area or minor or general elective	3	2			3	2		
Course selected from 2nd major area or minor or general elective	3	2			3	2		
Choose one of the following two courses:								
<a href="#">SCI3301 Science Project</a> *					3	1,2		
General Elective					3	1,2		

#### Footnotes

- # This offering has a highly recommended residential school (linked to an assessment item and non-attendance will mean a student misses an element for assessment preparation or an element of assessment).
- \*\* Students who have completed PHYS313 through UNE are unable to enrol in [PHY3304](#).
- \* Inclusion of the courses [MAT1102 Algebra and Calculus I](#), [MAT2100 Algebra and Calculus II](#), [MAT2409 High Performance Numerical Computing](#) and [SCI3301 Science Project](#) with the above Major courses forms the basis of an Australian Institute of Physics accredited major. Students who are studying the Physical Sciences major without the AIP accreditation can replace MAT2409, MAT2100 and SCI3301 with another course.

## Recommended Enrolment Pattern - 8 unit major – Plant Agricultural Science

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.

Students studying part-time should complete the major in a logical sequence as to reflect as close as possible the enrolment pattern below

Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
<b>Year 1</b>								
<a href="#">BIO1101 Biology 1</a> *	1	1	1	1			HR	
<a href="#">SCI1001 Succeeding in Science</a>	1	1			1	1		
<a href="#">CMS1100 Communicating in the Sciences</a>	1	1			1	1,2		
<a href="#">STA2300 Data Analysis</a>	1	1,2			1	1,2,3		Enrolment is not permitted in <a href="#">STA2300</a> if <a href="#">STA8170</a> or <a href="#">STA3100</a> has been previously completed.
<a href="#">AGR2301 Agricultural Science</a>	1	2			1	2		
<a href="#">MAT1100 Foundation Mathematics</a>	1	2			1	2		
General Elective (or major 2)	1	2			1	2		
General Elective (or major 2)	1	2			1	2		
<b>Year 2</b>								
<a href="#">AGR2303 Agronomy</a>	2	1			2	1		
General Elective (or major 2)	2	1			2	1		
General Elective (or major 2)	2	1			2	1		
General Elective (or major 2)	2	1			2	1		
<a href="#">BIO2219 Genetics</a>	2	2			2	2		Pre-requisite: ( <a href="#">BIO1100</a> or <a href="#">BIO1101</a> or <a href="#">BIO1204</a> )

Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
BIO2202 Plant Physiology*	2	2	2	2			HR	Pre-requisite: <a href="#">BIO1101</a>
General Elective (or major 2)	2	2			2	2		
General Elective (or major 2)	2	2			2	2		
<b>Year 3</b>								
AGR3304 Soil Science	3	1			3	1		
AGR3303 Agricultural Materials and Post-Harvest Technologies	3	1			3	1		
General Elective (or major 2)	3	1			3	1		
General Elective (or major 2)	3	1			3	1		
BIO3318 Plant Microbe Interactions*	3	2	3	2			HR	Pre-requisite: <a href="#">BIO1101</a> or <a href="#">BIO1100</a>
General Elective (or major 2)	3	2			3	2		
General Elective (or major 2)	3	2			3	2		
General Elective (or major 2)	3	2			3	2		

#### Footnotes

\* This offering has a highly recommended residential school (linked to an assessment item and non-attendance will mean a student misses an element for assessment preparation or an element of assessment).

## Recommended Enrolment Pattern - 8 unit major - Wine Science

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.

Students studying part-time should complete the major in a logical sequence as to reflect as close as possible the enrolment pattern below.

Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
<b>Year 1</b>								
WIN1101 Grape and Wine Production					1	1		
Elective (Or Major 2)	1	1			1	1		
SCI1001 Succeeding in Science	1	1			1	1		
General Elective (Or Major 2)	1	1			1	1		
General Elective (Or Major 2)	1	2			1	2		
CMS1100 Communicating in the Sciences					1	2		
STA2300 Data Analysis	1	2			1	2,3		Enrolment is not permitted in <a href="#">STA2300</a> if <a href="#">STA8170</a> or <a href="#">STA3100</a> has been previously completed.
MAT1100 Foundation Mathematics	1	2			1	2		
<b>Year 2</b>								
WIN2200 Viticultural and Winemaking Practice			2	1			M	Pre-requisite: <a href="#">WIN1101</a>
WIN2210 Viticultural Principles and Production					2	1		Pre-requisite: <a href="#">WIN1101</a>
General Elective (Or Major 2)	2	1			2	1		
General Elective (Or Major 2)	2	1			2	1		
WIN2215 Wine Biochemistry and Microbiology					2	2		Pre-requisite: <a href="#">WIN1101</a>
WIN2220 Wine Production					2	2		Pre-requisite: <a href="#">WIN1101</a>
General Elective (Or Major 2)	2	2			2	2		
General Elective (Or Major 2)	2	2			2	2		

Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
<b>Year 3</b>								
<a href="#">WIN3310 Wine Sensory Analysis</a>			3	1			M	Pre-requisite: <a href="#">WIN1101</a>
<a href="#">SCI3302 Industry Placement</a>	3	1, 2, 3	3	1,2,3				Pre-requisite: Completion of 2nd year (or 2 years full time study in a relevant area)
General Elective (Or Major 2)	3	1			3	1		
General Elective (Or Major 2)	3	1			3	1		
General Elective (Or Major 2)	3	2			3	2		
General Elective (Or Major 2)	3	2			3	2		
General Elective (Or Major 2)	3	2			3	2		
<a href="#">WIN3304 Viticultural and Winemaking Practice 2</a>	3	3					M	Pre-requisite: <a href="#">WIN1101</a>