

## Bachelor of Spatial Science (Honours) (BSPH) - BSpSc(Hons)

QTAC code (Australian and New Zealand applicants): Surveying (Springfield campus: 927221); Unspecified (Toowoomba campus: 907222; External: 907225)

CRICOS code (International applicants): 079520A

	On-campus <sup>^</sup>	External*
<b>Semester intake:</b>	Semester 1 (February) Semester 2 (July)	Semester 1 (February) Semester 2 (July)
<b>Campus:</b>	Springfield, Toowoomba	-
<b>Fees:</b>	Commonwealth supported place Domestic full fee paying place International full fee paying place	Commonwealth supported place Domestic full fee paying place International full fee paying place
<b>Standard duration:</b>	4 years full-time, 8 years part-time	
<b>Program articulation:</b>	From: <a href="#">Associate Degree of Spatial Science</a> ; <a href="#">Bachelor of Spatial Science Technology</a> To: ; <a href="#">Master of Spatial Science Technology</a>	

### Footnotes

<sup>^</sup> Surveying is the only major available on-campus at Springfield.

\* Students enrolled in the external mode of study should note that there are mandatory on-campus residential schools held at USQ Springfield for some courses in this program.

### 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 Bachelor of Spatial Science (Honours) (Surveying) is fully accredited by the Surveyors Board of Queensland and is recognised in every Australian state and in New Zealand through reciprocal arrangements. The degree, together with relevant industry experience, enables registration and/or licensing as a professional surveyor with the Boards of Surveyors in Australia and New Zealand.

Graduates from the Bachelor of Spatial Science (Honours) are eligible to apply for membership with the [Surveying and Spatial Science Institute Australia](#).

### Program aims

The Bachelor of Spatial Science (Honours) program provides students with the educational requirements to become a professional spatial scientist and the ability to undertake postgraduate studies. The program equips students with a core of theoretical, scientific, analytical, managerial, professional, research and communication skills that will permit them to undertake an in-depth study of the fundamental science and practice of spatial science in one of two fields: Geographic Information Systems (GIS) or Surveying. The program provides students with sufficient knowledge of surveying and spatial information systems to be eligible to gain employment, certification and, where appropriate, registration as a Professional Surveyor or Spatial Scientist.

In addition, students obtain knowledge of the natural, legal, commercial, industrial and social environments in which they will function as professionals. The program instils in students the need for continuing professional development and is designed to identify, and award honours to, students who have the capacity to undertake study at an advanced level and to make an original contribution to the fundamental science and practice of spatial science. The class of honours will be determined by academic performance. Refer to the Honours section of this entry for further details.

## Program objectives

A student who successfully completes the Bachelor of Spatial Science (Honours) should be able to apply:

- advanced knowledge in the theories, concepts, methods and technologies in the areas of surveying and spatial science
- skills and knowledge in the analysis, synthesis and evaluation of appropriate technologies, methods and processes to solve and complete a range of surveying and spatial science
- development of advanced technical and cognitive skills to create innovative and sustainable solutions utilising cutting-edge technologies, supported by research to collect, store and manipulate spatial data
- knowledge and skills to accept responsibility and autonomously apply well-informed judgements regarding professional practices, theories and processes
- advanced oral and written communication skills to transmit and convey the necessary information and ideas to relevant stakeholders
- consistent adaptation and application of academic norms and ethical standards in decision making when working collaboratively in a professional capacity
- knowledge of surveying and spatial information systems of sufficient depth to be eligible for employment, certification and, where appropriate, registration as a Professional Surveyor or Spatial Scientist.

## Australian Qualifications Framework

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

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

The full set of levels criteria and qualification type descriptors can be found by visiting [www.aqf.edu.au](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) **11**, tertiary entrance rank **77** or equivalent qualification.<sup>^</sup>
- Subject Pre-requisites: English (4,SA) and Mathematics B (4,SA) or equivalent.
- English Language Proficiency requirements for Category 2.

Applicants are advised to also address the following:

- Recommended Prior Study: Physics (4,SA) or equivalent.

All students are required to satisfy the applicable [English language requirements](#).

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

^ These are determined by the University for specific programs each Semester. The 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 Spatial Science (Honours) is a 32-unit program comprising Academic courses plus Practice courses.

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

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

## Required time limits

Students have a maximum of 10 years to complete this program.

## Electives/Approved courses

Approved courses are part of the Academic program and students must select approved courses from a specified list.

## Practice courses

The majority of the practical and professional experience requirements for the program are contained within the major recommended enrolment pattern in the following table. These are zero unit courses, which are a **compulsory part** of the program, however they do not attract a student contribution charge for Australian Residents or a tuition fee for international students.

## Practical experience

Work experience is desirable and encouraged but is not required for the completion of the Bachelor of Spatial Science (Honours) program. Students are encouraged to obtain work experience during vacation periods.

## IT requirements

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

## Residential schools

The attendance requirement of residential schools within this degree is indicated by the following letters: V = Voluntary; O = Optional; C = Compulsory; R = Recommended; HR = Highly Recommended; M = Mandatory. To 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](#).

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

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

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

PSG3900 Professional Week 1<sup>\*\*</sup> and ENG4110 Engineering Research Methodology are to be studied in the student's penultimate year. After completing PSG3900 Professional Week 1, students must study the following courses; PSG4111 Research Project A and PSG4112 Research Project B and PSG4900 Professional Week 2<sup>\*\*</sup> in the same academic year.

<sup>\*\*</sup> The [residential school](#) for PSG3900 Professional Week 1 and PSG4900 Professional Week 2 will be held at the Springfield Campus.

## Exit points

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

## Credit

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

## Work Experience

Work and industrial experience that has not been formally assessed, does not normally qualify for course credit in the Bachelor of Spatial Science (Honours) program.

## Honours

The level of honours awarded will be determined based on the USQ procedure. Please refer to the [Class of Honours Standard Schedule](#), using Schedule B for overall GPA and EITHER: the average grade across both PSG4111 Research Project A and PSG4112 Research Project B; OR the grade in PSG4112 Research Project B alone (whichever is the higher) to satisfy the 'Performance in honours project component'.

## Geographic Information Systems major recommended enrolment pattern

Students are able to enrol in any offered mode of a course (on-campus, external or online), regardless of the program mode of study they enrolled in.

To satisfy the requirements of the program students must complete all of the Academic and Practice courses in the following table that shows the recommended enrolment patterns for on-campus and external students for our Toowoomba campus. Students following a non-standard enrolment pattern should consult the [course specification](#) to ascertain if a course is offered in another term.

Full-time recommended enrolment pattern

Major study: Geographic Information Systems (Major Study Code: 15407)									
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, Semester 1</b>									
<b>Academic Courses</b>									
ENM1600 Engineering Mathematics	1	1,2					1,2		
GIS1402 Geographic Information Systems	1	1					1,3		
SVY1102 Surveying A	1	1					1		
ENG1003 Problem Solving in Engineering and the Built Environment	1	1,2					1,2		
<b>Year 1, Semester 2</b>									
GIS1401 Geographic Data Presentation	1	2					2		
ENG1002 Introduction to Engineering and Built Environment Applications	1	1,2					1,2		
SVY1110 Introduction to Global Positioning System	1	2					2		
CSC1401 Foundation Programming	1	2		2					
<b>Practice Course Year 1</b>									
SVY1901 Surveying and Spatial Science Practice 1	1	1	1	1				M	
<b>Year 2, Semester 1</b>									
<b>Academic Courses</b>									
ENV2201 Land Studies	2	1					1		
URP1001 Introduction to Urban and Regional Planning	2	1					1		
GIS3407 GIS Programming and Visualisation	2	1					1		Pre-requisite: GIS1402 and CSC1401 or Students must be enrolled in one of the following Programs: GDST or

Major study: Geographic Information Systems (Major Study Code: 15407)								
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		
								MSST or GCST or MENS or MSPT
ENG2002 Technology, Sustainability and Society	2	1,2					1,2,3	
<b>Year 2, Semester 2</b>								
URP2002 Local Government Planning Practice and Technology	2	2					2	
Approved course (Select from the approved courses list)	2	2					2	
SVY3302 Property Valuation and Development	2	2					2	
GIS3406 Remote Sensing and Image Processing	2	2					2	
<b>Practice Courses Year 2</b>								
GPL2901 GIS and Planning Practice 1			2	3				M Pre-requisite: (GIS1401 and GIS1402) or (URP2001) or (Students must be enrolled in one of the following Programs: GCNS or GDNS or MENS)
GPL3902 GIS and Planning Practice 2			2	3				M Pre-requisite: (GIS1402 or URP2001) Pre-requisite or Co-requisite: GPL2901
<b>Year 3, Semester 1</b>								
<b>Academic Courses</b>								
CIS2002 Database Design and Implementation	3	1					1,3	
Approved course (Select from the approved courses list)	3	1					1	
SVY3202 Photogrammetry and Remote Sensing	3	1					1	
SVY4309 Practice Management for Spatial Scientists	3	1					1	
<b>Year 3, Semester 2</b>								
<b>Academic Courses</b>								
GIS3008 Applications of GIS and Remote Sensing	3	2					2	Pre-requisite: GIS1402 and GIS3406 or Students must be enrolled in one of the following Programs: GCST or GDST or MSPT
GIS3405 Spatial Analysis and Modelling	3	2					2	
ENG4110 Engineering Research Methodology	3	2					2	
GIS4407 Web Based Geographic Information System	3	2					2	Pre-requisite: GIS1402 or Students must be enrolled in one of the following Programs: GCST or GDST or MSST or MSPT or GCNS or GDNS or MENS
<b>Practice Courses Year 3</b>								
PSG3900 Professional Week 1~			3	2				M Pre-requisite: Students must be enrolled in one of the following Programs: BSPS or BSPH or BURP

Major study: Geographic Information Systems (Major Study Code: 15407)								
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 4, Semester 1</b>								
<b>Academic Courses</b>								
Approved course (Select from the approved courses list)	4	1					1	
CSC2402 Object-Oriented Programming in C++	4	1					1	Pre-requisite: CSC1401 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 or MCTN
PSG4111 Research Project A <sup>^+</sup>	4						1	Pre-requisite: (PSG3900 or ENG3902) and ENG4110 and Students must be enrolled in one of the following Programs: BSPS or BSPH or BURP. Students must complete PSG4111 and PSG4112 in the same year.
LAW2107 Environmental Law <sup>*</sup>	4	1					1	Co-requisite: LAW1101 or LAW1500 or ENG2002 or REN1201 or (Students enrolled in BEDU (Legal Studies) or BLAW or LLBP or BALW or BBLA or BCLA or BCLW & Co-requisite LAW1201 or LAW1111) or (Students enrolled in DJUR & Co-requisite LAW5501 or LAW5111)
<b>Year 4, Semester 2</b>								
<b>Academic Courses</b>								
Approved course (Select from the approved courses list)	4	2					2	
Approved course (Select from the approved courses list)	4	2					2	
CSC2406 Web Technology 1	4	2					2	Pre-requisite: CSC1401 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 or BSED
PSG4112 Research Project B <sup>^++</sup>							1,2	Pre-requisite: PSG4111 and Students must be enrolled in one of the following Programs: BSPS or BSPH or BURP. Students must complete PSG4111 and PSG4112 in the same year.
<b>Practice Courses Year 4</b>								
PSG4900 Professional Week 2 <sup>~</sup>			4	2				M Pre-requisite: (PSG3900 or ENG3902) and Students must be enrolled in one of the following Programs: BSPS or BSPH or BURP. Students cannot enrol in PSG3900 and

Major study: Geographic Information Systems (Major Study Code: 15407)								
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		
							PSG4900 in the same semester.	
<b>Approved Courses (Select 5 courses from the following)</b>								
URP2001 Planning Structures and Statutory Planning		1				1		
URP3201 Sustainable Urban Design and Development		2				2		
URP4002 Urban and Regional Planning Theory		1				1	Pre-requisite: URP1001 or URP3201 or Students must be enrolled in one of the following Programs: GDST or MSPT or GCNS or GDNS or MENS or GCBU or MPPM	
CIS3001 Object-Oriented Programming with Java		1				1		
CIS2003 Component Based Software Development		2		2			Pre-requisite: CSC1401	
REN2200 Ecology for Sustainability		1				1		
STA2300 Data Analysis		1,2				1,2,3	Enrolment is not permitted in STA2300 if STA8170 has been previously completed.	
MGT1000 Organisational Behaviour		1				1,2,3		
MKT1001 Introduction to Marketing		1,2				1,2,3		
ENM2600 Advanced Engineering Mathematics		1				1	Pre-requisite: ENM1600 or Students must be enrolled in one of the following Programs: GCEN or METC or MENS or GDNS or MEPR or MSCN	
ACC1101 Accounting for Decision-Making		1,2				1,2,3		
AGR2301 Agricultural Science		2				2		
REN1201 Environmental Studies		1				1		
REN3302 Sustainable Resource Use		2				2		
SVY1104 Survey Computations A		2				2	Pre-requisite: SVY1102 or SVY1500 or Students must be enrolled in one of the following Programs: GCST or GDST or MSPT	

#### Footnotes

- ~ The residential school for PSG3900 and PSG4900 will be held at the Springfield Campus.
- ^ It is recommended that these courses are undertaken in the same academic year.
- + It is recommended that students should have completed PSG3900 prior to undertaking this course.
- \* On-campus mode at Springfield only.
- ++ It is recommended that students should also be enrolled in PSG4900 while undertaking this course.

#### Notes:

Other courses may be admissible as an approved course. However students must obtain approval from the Faculty of Health, Engineering and Sciences prior to enrolling in the course. Students may undertake only one appropriate level five or level eight course from this program or another program in the area of Engineering and Built Environment as an approved course with the approval of the Faculty of Health, Engineering and Sciences.



## Geographic Information Systems major recommended enrolment pattern (part-time)

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.

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, Semester 1</b>								
<b>Academic Courses</b>								
ENM1600 Engineering Mathematics	1	1,2					1,2	
GIS1402 Geographic Information Systems	1	1					1,3	
<b>Year 1, Semester 2</b>								
GIS1401 Geographic Data Presentation	1	2					2	
SVY1110 Introduction to Global Positioning System	1	2					2	
<b>Year 2, Semester 1</b>								
SVY1102 Surveying A	2	1					1	
ENG1002 Introduction to Engineering and Built Environment Applications	2	1					1, 2	
<b>Year 2, Semester 2</b>								
CSC1401 Foundation Programming	2	2		2				
ENG1003 Problem Solving in Engineering and the Built Environment	2	1,2					1,2	
<b>Practice Course Year 2</b>								
SVY1901 Surveying and Spatial Science Practice 1	2	1	2	1				M
<b>Year 3, Semester 1</b>								
ENV2201 Land Studies	3	1					1	
URP1001 Introduction to Urban and Regional Planning	3	1					1	
<b>Year 3, Semester 2</b>								
URP2002 Local Government Planning Practice and Technology	3	2					2	
Approved course (Select from the approved courses list)	3	2					2	
<b>Year 4, Semester 1</b>								
GIS3407 GIS Programming and Visualisation	4	1					1	Pre-requisite: GIS1402 and CSC1401 or Students must be enrolled in one of the following Programs: GDST or MSST or GCST or MENS or MSPT
ENG2002 Technology, Sustainability and Society	4	1,2					1,2,3	
<b>Year 4, Semester 2</b>								
SVY3302 Property Valuation and Development	4	2					2	
GIS3406 Remote Sensing and Image Processing	4	2					2	
<b>Practice Courses Year 4</b>								
GPL2901 GIS and Planning Practice 1			4	3				M Pre-requisite: (GIS1401 and GIS1402) or (URP2001) or (Students must be enrolled in one of the following Pro

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		
							grams: GCNS or GDNS or MENS)	
GPL3902 GIS and Planning Practice 2			4	3			M Pre-requisite: (GIS1402 or URP2001) Pre-requisite or Co-requisite: GPL2901	
<b>Year 5, Semester 1</b>								
CIS2002 Database Design and Implementation	5	1				1,3		
Approved course (Select from the approved courses list)	5	1				1		
<b>Year 5, Semester 2</b>								
GIS3008 Applications of GIS and Remote Sensing	5	2				2	Pre-requisite: GIS1402 and GIS3406 or Students must be enrolled in one of the following Programs: GCST or GDST or MSPT	
GIS3405 Spatial Analysis and Modelling	5	2				2		
<b>Year 6, Semester 1</b>								
SVY3202 Photogrammetry and Remote Sensing	6	1				1		
SVY4309 Practice Management for Spatial Scientists	6	1				1		
<b>Year 6, Semester 2</b>								
ENG4110 Engineering Research Methodology	6	2				2		
GIS4407 Web Based Geographic Information System	6	2				2	Pre-requisite: GIS1402 or S students must be enrolled in one of the following Program s: GCST or GDST or MSST or MSPT or GCNS or GDNS or MENS	
<b>Practice Courses Year 6</b>								
PSG3900 Professional Week 1~				2			M Pre-requisite: Students must be enrolled in one of the following Programs: BSPS or BSPH or BURP	
<b>Year 7, Semester 1</b>								
Approved course (Select from the approved courses list)	7	1				1		
CSC2402 Object-Oriented Programming in C++	7	1				1	Pre-requisite: CSC1401 or Students must be enrolled in one of the following Program s: GDTI or GCSC or GCEN or METC or MCOT or MCTE or MCOP or MPIT or MCTN	
<b>Year 7, Semester 2</b>								
Approved course (Select from the approved courses list)	7	2				2		
CSC2406 Web Technology 1	7	2				2	Pre-requisite: CSC1401 or Students must be enrolled in one of the following Program s: GDTI or GCEN or METC or MCOT or MCTE or MCOP or MPIT or MCTN or BSED	

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 8, Semester 1</b>								
PSG4111 Research Project A <sup>^+</sup>						1		Pre-requisite: (PSG3900 or ENG3902) and ENG4110 and Students must be enrolled in one of the following Programs: BSPS or BSPH or BURP. Students must complete PSG4111 and PS G4112 in the same year.
LAW2107 Environmental Law <sup>*</sup>	8	1				1		Co-requisite: LAW1101 or LAW1500 or ENG2002 or REN1201 or (Students enrolled in BEDU (Legal Studies) or BLAW or LLBP or BALW or BBLA or BCLA or BCLW & Co-requisite LAW1201 or LAW1111) or (Students enrolled in DJUR & Co-requisite LAW5501 or LAW5111)
<b>Year 8, Semester 2</b>								
Approved course (Select from the approved courses list)	8	2				2		
PSG4112 Research Project B <sup>^++</sup>						1,2		Pre-requisite: PSG4111 and Students must be enrolled in one of the following Programs: BSPS or BSPH or BURP. Students must complete PSG4111 and PSG4112 in the same year.
<b>Practice Courses Year 8</b>								
PSG4900 Professional Week 2 <sup>~</sup>				2			M	Pre-requisite: (PSG3900 or ENG3902) and Students must be enrolled in one of the following Programs: BSPS or BSPH or BURP. Students cannot enrol in PSG3900 and PSG4900 in the same semester.
<b>Approved Courses (Select 5 courses from the following)</b>								
URP2001 Planning Structures and Statutory Planning		1				1		
URP3201 Sustainable Urban Design and Development		2				2		
URP4002 Urban and Regional Planning Theory		1				1		Pre-requisite: URP1001 or URP3201 or Students must be enrolled in one of the following Programs: GDST or MSPT or GCNS or GDNS or MENS or GCBU or MPPM
CIS3001 Object-Oriented Programming with Java		1				1		
CIS2003 Component Based Software Development		2		2				Pre-requisite: CSC1401
REN2200 Ecology for Sustainability		1				1		
STA2300 Data Analysis		1,2				1,2,3		Enrolment is not permitted in STA2300 if STA8170 has been previously completed.
MGT1000 Organisational Behaviour		1				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		
MKT1001 Introduction to Marketing		1,2				1,2,3		
ENM2600 Advanced Engineering Mathematics		1				1	Pre-requisite: ENM1600 or Students must be enrolled in one of the following Programs: GCEN or METC or MENS or GDNS or MEPR or MSCN	
ACC1101 Accounting for Decision-Making		1,2				1,2,3		
AGR2301 Agricultural Science		2				2		
REN1201 Environmental Studies		1				1		
REN3302 Sustainable Resource Use		2				2		
SVY1104 Survey Computations A		2				2	Pre-requisite: SVY1102 or SVY1500 or Students must be enrolled in one of the following Programs: GCST or GDST or MSPT	

#### Footnotes

- ~ The [residential school](#) for PSG3900 and PSG4900 will be held at the Springfield Campus.
- ^ It is recommended that these courses are undertaken in the same academic year.
- + It is recommended that students should have completed PSG3900 prior to undertaking this course.
- \* On-campus mode at Springfield only.
- ++ It is recommended that students should also be enrolled in PSG4900 while undertaking this course.

#### Notes:

Other courses may be admissible as an approved course. However students must obtain approval from the Faculty of Health, Engineering and Sciences prior to enrolling in the course. Students may undertake only one appropriate level five or level eight course from this program or another program in the area of Engineering and Built Environment as an approved course with the approval of the Faculty of Health, Engineering and Sciences.

## Surveying Major recommended enrolment pattern (Toowoomba and Springfield campus)

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.

To satisfy the requirements of the program students must complete all of the Academic and Practice courses in the following table that shows the recommended enrolment patterns for on-campus and external students for our Toowoomba campus. Students following a non-standard enrolment pattern should consult the [course specification](#) to ascertain if a course is offered in another term.

Major study: Surveying (Major Study Code: 15408)								
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, Semester 1</b>								
<b>Academic Courses</b>								
ENM1600 Engineering Mathematics	1	1,2				1,2		
GIS1402 Geographic Information Systems	1	1				1,3		
SVY1102 Surveying A	1	1				1		
ENG1003 Problem Solving in Engineering and the Built Environment	1	1,2				1,2		
<b>Year 1, Semester 2</b>								
SVY1110 Introduction to Global Positioning System	1	2				2		
ENG1002 Introduction to Engineering and Built Environment Applications	1	1,2				1,2		

Major study: Surveying (Major Study Code: 15408)									
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			
SVY1104 Survey Computations A	1	2				2		Pre-requisite: SVY1102 or SVY1500 or Students must be enrolled in one of the following Programs: GCST or GDST or MSPT	
GIS1401 Geographic Data Presentation	1	2				2			
<b>Practice Courses Year 1</b>									
SVY1901 Surveying and Spatial Science Practice 1	1	1	2	1			M		
<b>Year 2, Semester 1</b>									
<b>Academic Courses</b>									
SVY2301 Automated Surveying Systems	2	1				2	1	Pre-requisite: SVY1104 or Students must be enrolled in one of the following Programs: GCST or GDST or MSPT	
SVY2106 Geodetic Surveying A	2	1		1				Pre-requisite: SVY1110 and SVY1102 or Students must be enrolled in one of the following Programs: GCNS or GCST or GDNS or GDST or MSST or MSPT or MENS	
SVY3202 Photogrammetry and Remote Sensing	2	1					1		
SVY2302 Mine Surveying	2	1					1	Pre-requisite: SVY1104 or Students must be enrolled in one of the following Programs: GCNS or GCST or GDNS or GDST or MSPT	
<b>Year 2, Semester 2</b>									
CSC1401 Foundation Programming	2	1,2					1,2,3		
SVY2303 Construction Surveying	2	2					2	Pre-requisite: SVY1104	
ENG2002 Technology, Sustainability and Society	2	1,2					1,2,3		
<b>Choose one of the following two courses:</b>									
SVY3304 Cadastral Surveying (Queensland) <sup>^^</sup>	2	2					2	Pre-requisite: (SVY1102 and SVY1104) or Students must be enrolled in one of the following Programs: GCNS or GCST or GDNS or GDST or MSST or MSPT or MENS	
SVY3306 Cadastral Surveying (New South Wales) <sup>^^</sup>							2	Pre-requisite: (SVY1102 and SVY1104) or Students must be enrolled in one of the following Programs: GCNS or GCST or GDNS or GDST or MSST or MENS	
<b>Practice Courses Year 2</b>									
SVY2902 Surveying and Spatial Science Practice 2	2	1	2	3			M	Pre-requisite: SVY1901 and SVY1104 and SVY1110 and GIS1401	
SVY2903 Surveying and Spatial Science Practice 3	2	2	2	3			M	Pre-requisite: SVY1901 and SVY2301 and SVY2106 and SVY3202	

Major study: Surveying (Major Study Code: 15408)								
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, Semester 1</b>								
<b>Academic Courses</b>								
CIV2701 Road Design and Location	3	1				1		Pre-requisite: MAT1500 or ENG1500 or ENM1500 or ENM1600 or Students must be enrolled in one of the following Programs: GCST or GDST or GCEN
ENV2201 Land Studies	3	1				1		
URP1001 Introduction to Urban and Regional Planning	3	1				1		
SVY2105 Survey Computations B	3	1				1		Pre-requisite: ENM1600 and SVY2106 or Students must be enrolled in one of the following Programs: GCNS or GCST or GDNS or GDST or MSST or MENS
<b>Year 3, Semester 2</b>								
SVY3400 Advanced Surveying	3	2				2		Pre-requisite: (SVY2106 and SVY2105) or Students must be enrolled in one of the following Programs: GCNS or GCST or GDNS or GDST or MSPT or MENS
URP3201 Sustainable Urban Design and Development	3	2				2		
ENG4110 Engineering Research Methodology	3	2				2		
SVY3107 Geodetic Surveying B	3	2		2				Pre-requisite: SVY1110 or Students must be enrolled in one of the following Programs: GCNS or GCST or GDNS or GDST or MSST or MSPT or MENS
<b>Practice Courses Year 3</b>								
SVY3904 Surveying and Spatial Science Practice 4			3	2,3			M	Pre-requisite: SVY2902 or SVY2903 and SVY3304 or SVY3306 and SVY3202
PSG3900 Professional Week 1 <sup>~</sup>				2			M	Pre-requisite: Students must be enrolled in one of the following Programs: BSPS or BSPH or BURP
<b>Year 4, Semester 1</b>								
<b>Academic Courses</b>								
SVY4309 Practice Management for Spatial Scientists	4	1				1		
Approved Course (Select from the Approved Course list)	4	1				1		
PSG4111 Research Project A <sup>^+</sup>						1		Pre-requisite: (PSG3900 or ENG3902) and ENG4110 and Students must be enrolled in one of the following Programs: BSPS or BSPH or BURP. Students must complete PSG4111 and PSG4112 in the same year.

Major study: Surveying (Major Study Code: 15408)								
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		
Approved Course (Select from the Approved Course list)	4	1				1		
<b>Year 4, Semester 2</b>								
Approved Course (Select from the Approved Course list)	4	2				2		
SVY4304 Land and Cadastral Law	4	2				2		
SVY3302 Property Valuation and Development	4	2				2		
PSG4112 Research Project B <sup>^++</sup>						1,2		Pre-requisite: PSG4111 and Students must be enrolled in one of the following Programs: BSPS or BSPH or BURP. Students must complete PS G4111 and PSG4112 in the same year.
<b>Practice Courses Year 4</b>								
PSG4900 Professional Week 2 <sup>~</sup>			4	2			M	Pre-requisite: (PSG3900 or ENG3902) and Students must be enrolled in one of the following Programs: BSPS or BSPH or BURP. Students cannot enrol in PSG3900 and PSG4900 in the same semester.
<b>Approved Courses (Select 3 courses from the following)</b>								
URP2001 Planning Structures and Statutory Planning		1				1		
URP2002 Local Government Planning Practice and Technology		2				2		
URP4002 Urban and Regional Planning Theory		1				1		Pre-requisite: URP1001 or URP3201 or Students must be enrolled in one of the following Programs: GDST or MSPT or GCNS or GDNS or MENS or GCBU or MPPM
CIV2605 Construction Engineering		1				1		
SVY3304 Cadastral Surveying (Queensland) <sup>**</sup>		2				2		Pre-requisite: (SVY1102 and SVY1104) or Students must be enrolled in one of the following Programs: GCNS or GCST or GDNS or GDST or MSST or MSPT or MENS
SVY3306 Cadastral Surveying (New South Wales) <sup>**</sup>						2		Pre-requisite: (SVY1102 and SVY1104) or Students must be enrolled in one of the following Programs: GCNS or GCST or GDNS or GDST or MSST or MENS
GIS3407 GIS Programming and Visualisation		1				1		Pre-requisite: GIS1402 and CSC1401 or Students must be enrolled in one of the following Programs: GDST or MSST or GCST or MENS or MSPT
MGT1000 Organisational Behaviour		1				1,2,3		
ACC1101 Accounting for Decision-Making		1,2				1,2,3		

Major study: Surveying (Major Study Code: 15408)								Residential school	Enrolment requirements
Course	Year of program and semester in which course is normally studied								
	On-campus (ONC)		External (EXT)		Online (ONL)				
	Year	Sem	Year	Sem	Year	Sem			
ENM2600 Advanced Engineering Mathematics		1				1		Pre-requisite: ENM1600 or Students must be enrolled in one of the following Programs: GCEN or METC or MENS or GDNS or MEPR or MSCN	
CIV3703 Transport Engineering		2				2			
CIV1501 Engineering Statics		2				2,3		Pre-requisite: ENG1500 or MAT1500 or ENM1600 or (ENM1500 and CIV1500) or Students must be enrolled in one of the following Programs: MEPR or GCEN or GEPR	
GIS3405 Spatial Analysis and Modelling		2				2			
GIS3406 Remote Sensing and Image Processing		2				2			
LAW2107 Environmental Law *		1				1		Co-requisite: LAW1101 or LAW1500 or ENG2002 or REN1201 or (Students enrolled in BEDU (Legal Studies) or BLAW or LLBP or BALW or BBLA or BCLA or BCLW & Co-requisite LAW1201 or LAW1111) or (Students enrolled in DJUR & Co-requisite LAW5501 or LAW5111)	

#### Footnotes

- ^^ Students should study the course appropriate to their intended jurisdiction of practice.
- ~ The residential school for PSG3900 and PSG4900 will be held at the Springfield Campus.
- ^ It is recommended that these courses are undertaken in the same academic year.
- + It is recommended that students should have completed PSG3900 prior to undertaking this course.
- ++ It is recommended that students should also be enrolled in PSG4900 while undertaking this course.
- \*\* The alternative to the previously completed Cadastral core course may be taken as an elective/approved course.
- \* On-campus mode at Springfield only.

#### Notes:

Students may undertake only one appropriate level five or level eight course from this program or another program in the area of Engineering and Built Environment as an Elective with the approval of the Faculty of Health, Engineering and Sciences.