

Bachelor of Spatial Science Technology (BSST) - BSpScTech

QTAC code (Australian and New Zealand applicants): Unspecified (Toowoomba campus: 907801; External: 907805); Surveying (Springfield campus: 927801)

CRICOS code (International applicants): 053512D

	On-campus [^]	External
Start:	Semester 1 (February) Semester 2 (July)	Semester 1 (February) Semester 2 (July)
Campus:	Springfield, Toowoomba	-
Fees:	Commonwealth supported place Domestic full fee paying place International full fee paying place	Commonwealth supported place Domestic full fee paying place International full fee paying place
Standard duration:	3 years full-time, 6 years part-time	
Program articulation:	From: Associate Degree of Spatial Science To: Bachelor of Spatial Science (Honours) ; Master of Spatial Science Technology	

Footnotes

[^] Only the Surveying major is available on-campus at Springfield.

Contact us

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

Professional accreditation

The Bachelor of Spatial Science Technology (Surveying) program is 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 as a graduate surveyor with the Queensland Surveyors Board. The degree, together with relevant industry experience, enables registration and/or licensing as a professional mining surveyor with the Surveyors Boards of Queensland and New South Wales.

The Spatial Science Institute has accredited both program majors and graduates are eligible for membership with the [Surveying and Spatial Sciences Institute Australia](#).

Program aims

The Bachelor of Spatial Science Technology program equips students with a core of basic technical, scientific, analytical, business administration and communication skills that will permit them to undertake further study of the 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, spatial information systems or urban and regional planning to be eligible to gain employment, certification and, where appropriate, registration as a Graduate Surveyor or GIS 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 gives them the ability to adapt to change.

Program objectives

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

- broad and coherent knowledge in the theories, concepts, methods and technologies in the areas of surveying and spatial science
- skills and knowledge of the analysis and evaluation of appropriate technologies, methods and processes to solve and complete a range of surveying and spatial science activities
- well-developed 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 autonomously apply well-informed judgements regarding specialised practices, theories and processes in their domain of knowledge
- well-developed communication skills to transmit and convey the necessary information and ideas to relevant stakeholders
- consistent application of academic norms and ethical standards in decision making when working collaboratively in a professional capacity
- knowledge of surveying or spatial information systems to sufficient depth to be eligible for employment, certification and, where appropriate, registration as a Graduate Surveyor or GIS 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 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.

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 Australian Tertiary Admission Rank (ATAR) of **65.6**, or equivalent qualification.^
- Subject Pre-requisites: English (Units 3 & 4, C) and Mathematical Methods (Units 3 & 4, C) or equivalent.
- English Language Proficiency requirements for Category 2.

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 2021 ATAR 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.

Adjustment factors may help you get into the program of your choice by increasing your entrance rank. The additional points don't apply to all applicants or all programs. Please read the information about USQ's [Adjustment Factors](#) 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 Schedules](#).

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 Schedule](#)

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 Schedules](#).

Program structure

The Bachelor of Spatial Science Technology is a 24-unit program comprising Academic Courses plus Practice Courses.

Academic courses are 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 8 years to complete this program.

Electives/Approved courses

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

Practical experience

Work experience is desirable and encouraged but is not required for the completion of the Bachelor of Spatial Science Technology 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: 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.

Articulation

Students can articulate into the [Bachelor of Spatial Science \(Honours\)](#) program.

Exit points

Students who, for whatever reason, are unable to complete the Bachelor of Spatial Science Technology and who satisfy all of the requirements of either the [Associate Degree of Spatial Science](#) or [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 Technology program.

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. Students following a non-standard enrolment pattern should consult the [course specification](#) to ascertain if a course is offered in another term.

Major study: Geographic Information Systems (Major Study Code: 15405)								
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		
Year 1, Semester 1								
Academic Courses								
ENM1600 Engineering Mathematics	1	1					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					1,2	
Year 1, Semester 2								
GIS1401 Geographic Data Presentation	1	2					2	
ENG1002 Introduction to Engineering and Built Environment Applications	1	2					1,2	
SVY1110 Introduction to Global Positioning System	1	2					2	
CSC1401 Foundation Programming	1	2					1,2,3	
Practice courses Year 1								
SVY1901 Surveying and Spatial Science Practice 1	1	1	2	1				M
Year 2, Semester 1								
Academic Courses								
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 MSST or GCST or MENS or MSPT
ENG2002 Technology, Sustainability and Society	2	1					1,2,3	
Year 2, Semester 2								
Approved Course (Select from the Approved Course list)	2	2					2	
URP2002 Local Government Planning Practice and Technology[#]	2	2					2	
SVY3302 Property Valuation and Development	2	2					2	
GIS3406 Remote Sensing and Image Processing	2	2					2	
Practice Courses Year 2								
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 Programs: GCNS or GDNS or MENS)
GPL3902 GIS and Planning Practice 2			5	3				M Pre-requisite: (GIS1402 or URP2001) Pre-requisite or Co-requisite: GPL2901

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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		
Year 3, Semester 1								
Academic Courses								
SVY4309 Practice Management for Spatial Scientists [#]	3	1				1		
SVY3202 Photogrammetry and Remote Sensing	3	1				1		
Approved Course (Select from the Approved Course list)	3	1				1		
CSC3400 Database Systems	3	1				1,3	Pre-requisite: CSC1401 or CIS1000 Enrolment is not permitted in CSC3400 if CIS2002 has been previously completed.	
Year 3, Semester 2								
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		
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	
Approved Course (Select from the Approved Course list)	3	2				2		
Approved Courses (Select 3 courses from the following)								
CIS2003		2				2		
MKT1001 Introduction to Marketing		1				1,2,3		
MGT1000 Organisational Behaviour		1				1,2,3		
REN1201 Environmental Studies ^{<}		1				1	Enrolment is not permitted in REN1201 if REN8101 has been previously completed.	
ACC1101 Accounting for Decision-Making		1,2				1,2,3		
AGR2301 Agricultural Science		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)	
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	

Major study: Geographic Information Systems (Major Study Code: 15405)								
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		
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	
URP2001 Planning Structures and Statutory Planning [#]		1				1		
URP3201 Sustainable Urban Design and Development		2				2		

Footnotes

- # Unavailable in on-campus mode in 2022
< Unavailable in on-campus mode at Springfield in 2022
* on-campus mode is only available at Toowoomba.

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. 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: 15406)								
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		
Year 1, Semester 1								
Academic Courses								
ENM1600 Engineering Mathematics	1	1				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				1,2		
Year 1, Semester 2								
ENG1002 Introduction to Engineering and Built Environment Applications	1	2				1,2		
SVY1110 Introduction to Global Positioning System	1	2				2		
GIS1401 Geographic Data Presentation	1	2				2		
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	
Practice Courses Year 1								
SVY1901 Surveying and Spatial Science Practice 1	1	1	2	1			M	

Major study: Surveying (Major Study Code: 15406)									
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			
Year 2, Semester 1									
Academic Courses									
SVY2301 Automated Surveying Systems	2	1				1		Pre-requisite: SVY1104 or S tudents must be enrolled in one of the following Program s: 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 fol lowing 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 S tudents must be enrolled in one of the following Program s: GCNS or GCST or GDNS or GDST or MSPT	
Year 2, Semester 2									
Approved Course (Select from the Approved course list)	2	2				2			
SVY2303 Construction Surveying	2	2				2		Pre-requisite: SVY1104	
ENG2002 Technology, Sustainability and Society	2	2				1,2,3			
Choose one of the following courses:									
SVY3304 Cadastral Surveying (Queensland) ^{^^}	2	2				2		Pre-requisite: (SVY1102 and SVY1104) or Students must be enrolled in one of the fol lowing Programs: GCNS or GCST or GDNS or GDST or MSST or MSPT or MENS	
SVY3306 Cadastral Surveying (New South Wales) ^{^^}						2		Pre-requisite: (SVY1102 and SVY1104) or Students must be enrolled in one of the fol lowing Programs: GCNS or GCST or GDNS or GDST or MSST or MENS	
Practice Courses Year 2									
SVY2902 Surveying and Spatial Science Practice 2	2	1	3	3			M	Pre-requisite: SVY1901 and SVY1104 and SVY1110 and GIS1401	
SVY2903 Surveying and Spatial Science Practice 3	2	2	4	3			M	Pre-requisite: SVY1901 and SVY2301 and SVY2106 and SVY3202	
Year 3, Semester 1									
Academic Courses									
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 fol lowing Programs: GCST or GDST or GCEN or GEPR	

Major study: Surveying (Major Study Code: 15406)								
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)	3	1				1		
ENV2201 Land Studies	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 MSPT or MENS	
Year 3, Semester 2								
SVY3302 Property Valuation and Development	3	2				2		
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		
SVY3107 Geodetic Surveying B	3	2				2	Pre-requisite: SVY1110 and SVY2105 or Students must be enrolled in one of the following Programs: GCNS or GCST or GDNS or GDST or MSST or MSPT	
Practice Courses Year 3								
SVY3904 Surveying and Spatial Science Practice 4			6	2,3			M Pre-requisite: SVY2902 or SVY2903 and SVY3304 or SVY3306 and SVY3202	
Approved Courses (Select 2 courses from the following)								
SVY4309 Practice Management for Spatial Scientists [#]		1				1		
ACC1101 Accounting for Decision-Making		1,2				1,2,3		
CIV2605 Construction Engineering		1				1		
SVY3304 Cadastral Surveying (Queensland) ^{**}		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) ^{**}						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	
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	

Major study: Surveying (Major Study Code: 15406)								
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		
							MSPT or GCNS or GDNS or MENS or GCBU or MPPM	
CSC1401 Foundation Programming		2		1,2,3				
SVY4304 Land and Cadastral Law		2				2		
GIS3405 Spatial Analysis and Modelling		2				2		
GIS3406 Remote Sensing and Image Processing		2				2		
URP1001 Introduction to Urban and Regional Planning		1				1		
URP2001 Planning Structures and Statutory Planning [#]		1				1		
URP2002 Local Government Planning Practice and Technology [#]		2				2		

Footnotes

- * Unavailable in on-campus mode at Toowoomba campus in 2022
- ^^ students should study the course appropriate to their intended jurisdiction of practice.
- # Unavailable in on-campus mode in 2022
- ** The alternative to the previously completed Cadastral core course may be taken as an elective/approved course.