

Associate Degree of Spatial Science (ADSS) - AssocDegSpSc

QTAC code (Australian and New Zealand applicants): Toowoomba campus: 907062; Distance education: 907065

CRICOS code (International applicants): 053510F

	On-campus	Distance education
Semester intake:	Semester 1 (February) Semester 2 (July)	Semester 1 (February) Semester 2 (July)
Campus:	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:	2 years full-time, 4 years part-time or external	
Program articulation:	To: Bachelor of Spatial Science ; Bachelor of Spatial Science Technology	

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

Geographic Information Systems major

This major provides students with the technical skills required to work in the expanding area of Geographic Information Systems (GIS). Students undertake studies in surveying, land studies, spatial analysis and modelling, problem solving, data visualisation and presentation, information management, photogrammetry, remote sensing and GIS. Coursework can be credited towards a Bachelor of Spatial Science Technology (GIS) or Bachelor of Spatial Science (GIS).

Career opportunities

Geographic Information Systems Officer or Spatial Information Analyst in any organisation using GIS systems to support decision making including Local, State and Commonwealth Government agencies in applications such as planning, land development or environmental assessment.

Surveying major

Surveying associates often work as support staff to professional surveyors. The program is designed to ensure that graduates possess a broad knowledge of surveying and a large variety of practical surveying skills. All coursework can be credited towards a Bachelor of Spatial Science Technology (Surveying), or Bachelor of Spatial Science (Surveying).

Career opportunities

Mine Surveyor, Engineering Surveyor in State and Local Government or construction organisations; Surveying Associate employed with private organisations as instrument operator or field technician.

Professional accreditation

Graduates of the Associate Degree in Spatial Science (Surveying) may seek registration with the Board of Surveyors in Queensland. The program is accredited by the Surveyors Board of Queensland. Graduates from both majors are also eligible for memberships with the [Surveying and Spatial Sciences Institute Australia](#).

Program aims

The Associate Degree in Spatial Science program provides students with the theory, methods and practices required by an associate to support a practising professional spatial scientist. To this end the program provides students with a general understanding of the broad practice and knowledge in the spatial science profession and the technical skills to work in one of two fields: Geographic Information Systems (GIS), or Surveying.

Program objectives

A student who successfully completes the Associate Degree in Spatial Science will be able to demonstrate:

- a broad knowledge of the basic scientific and technical skills required to function at an associate level
- an effective level of computer literacy
- appropriate written and oral communication skills
- the ability to propose solutions for technical problems in accordance with established procedures and practices
- an understanding of, and the ability to undertake, some of the processes required to collect, store, and manipulate a variety of spatial data
- a capacity to adapt to change and to master new techniques
- a basic understanding of the natural, social, professional, industrial and technical environments in which they will work
- the skills required to access information and an aptitude to undertake further learning and study
- a knowledge of surveying or spatial information systems of sufficient depth to gain employment in a technical support role in the spatial science industry.

Admission requirements

Applicants shall normally:

- have studied four semester units and achieved an exit assessment of 'Sound Achievement' or better in the Queensland Senior Secondary School subject: English. It is recommended that applicants should also have satisfactorily completed the subject: Mathematics B (Mathematics A is assumed)

or

- be able to demonstrate that they have achieved an equivalent standard in these subjects at another institution

and

- **Australian applicants:** have achieved a Queensland Overall Position (OP) band, or an equivalent Rank based on qualifications and previous work experience, at or above the specified cut-off level
- **International applicants:** must have met the University's [English language](#) requirements or have completed the University's [ELICOS/EAP](#) programs.

How to apply

Domestic students

[Application for undergraduate programs](#) may be made through the Queensland Tertiary Admissions Centre (QTAC). The same procedure applies whether you plan to study on-campus or by distance education.

If you completed Year 12 at a Queensland secondary school you will be assessed for entry on the basis of your Overall Position (OP) or equivalent score. Year 12 students from other states or territories are considered for entry on the basis of their UAI, ENTER or TER and the subject prerequisites indicated. Other applicants will be based on their overall Rank.

International students

This program is offered to international students. An international student is a person who is not an Australian or New Zealand citizen and not an Australian permanent resident. Please refer to [USQ International](#) for information about entry requirements, visa arrangements and how to apply.

Program fees

Commonwealth supported place

A Commonwealth supported place is where the Australian Government makes a contribution towards the cost of your higher education and you as a student pay a [student contribution amount](#), which varies depending on the courses undertaken. You are able to calculate the fees for a particular course via the [Course Fee Finder](#). Commonwealth Supported students may be eligible to defer their fees through a Government loan called [HECS-HELP](#).

Domestic full fee paying place

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

Permanent Humanitarian Visa holders, Permanent Resident visa holders and New Zealand citizens who reside outside Australia pay full tuition fees.

Domestic full fee paying students may be eligible to defer their fees through a Government loan called [FEE-HELP](#).

International full fee paying place

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

Program structure

The Associate Degree in Spatial Science is a 16 unit program consisting of Academic courses and Practice courses.

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

Required time limits

Full-time students have a maximum of four years to complete this program. Part-time students have a maximum of eight years to complete this program.

Practice courses

The major practical work requirements associated with each of the Faculty's programs are contained within a series of Practice courses. These courses are designed to enhance learning, communication and practical skills through laboratory sessions, workshops, seminars, field trips and group activities.

Practice courses may be undertaken in either on-campus or external mode. Students enrolling externally will be required to attend a **compulsory residential school**. However, students who enrol in Practice courses in on-campus mode may be required to undertake a series of weekly activities and/or attend a compulsory residential school. The only final grades available in these courses are Pass (P) or Fail (F).

Practice courses are **zero** unit courses that 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. External students should ensure that they are able to attend the residential school prior to enrolling in a Practice course. The recommended enrolment pattern for Practice courses is shown in the Recommended Enrolment Pattern in each program entry in this Handbook.

Safety boots are compulsory in laboratories for several of the Practice courses and are strongly recommended for all other Practice courses.

Practical experience

Practical experience is desirable and encouraged but is not required for the completion of the Associate Degree in Spatial Science. Students are encouraged to obtain practical experience during vacation periods.

IT requirements

Students should refer to the section entitled [Access to Information Technology Facilities](#) in the General Faculty and Program Information section of this Handbook.

Residential schools

External students are required to attend a number of [residential schools](#) during their program. These are associated with Practice courses and are normally conducted at the end of Semester 3 (February), or during the mid-semester recesses in Semester 1 or 2 (March/April and September/October).

Articulation

Graduates of an Associate Degree in Spatial Science would normally be eligible for up to 16 courses of credit towards the Bachelor of Spatial Science Technology within the same field. Similarly, Bachelor of Spatial Science Technology students would normally be eligible for up to 24 units of credit towards the Bachelor of Spatial Science degree within the same field. The number of courses of advanced standing granted will depend upon the nature and currency of the studies undertaken and the major undertaken.

Exit points

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

Geographic Information Systems Major recommended enrolment pattern

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

Elective courses

Elective courses are included in the list of Academic courses. Students should select these courses from the Electives list.

Geographic Information Systems recommended enrolment pattern

Major study: Geographic Information Systems (Major Study Code: 15409)								
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (WEB)			
	Year	Sem	Year	Sem	Year	Sem		
Academic Courses								
ENG1500 Engineering Fundamentals*	1	1	1	1				
GIS1402 Geographic Information Systems	1	1	1	1				
SVY1102 Surveying A	1	1	2	1				
ENG1101 Introduction to Engineering Problem Solving	1	1	2	1,2				
GIS1401 Geographic Data Presentation	1	2	1	2				
ENG1002 Introduction to Engineering and Spatial Science Applications	1	2	1	1,2				
SVY1110 Introduction to Global Positioning System	1	2	2	2				
CSC1401 Foundation Programming	1	2	2	1,2				
ENV2201 Land Studies	2	1	3	1				
SVY3202 Photogrammetry and Remote Sensing	2	1	3	1				
GIS3404 Geographic Data Visualisation	2	1	4	1				
Elective (Select from the Electives list)	2	1	4	1				
ENG2102 Engineering Problem Solving and Analysis	2	2	3	2				Pre-requisite: ENG1101
Elective (Select from the Electives list)	2	2	3	2				
SVY3200 Land Administration	2	2	4	2				
GIS3405 Spatial Analysis and Modelling	2	2	4	2				
Practice Courses								
SVY1901 Surveying and Spatial Science Practice 1[^]	1		2	1			C	
SVY2902 Surveying and Spatial Science Practice 2^{^#}	2		3	3			C	Pre-requisite: SVY1901 and SVY1102 or Students must be enrolled in one of the following Programs: GCNS or GDNS or MENS
Electives (Select from the following)								
ACC1101 Accounting for Decision-Making			1,2		1,2,3			
AGR2301 Agricultural Science			2		2			
CIV2701 Road Design and Location			1		1			Pre-requisite: MAT1500 or ENG1500 or Students must be enrolled in one of the following Programs: GCST or GDGS
ENG3003 Engineering Management			1		1			
GIS4407 Web Based Geographic Information System			2		2			Pre-requisite: GIS1402 or Students must be enrolled in one of the following Programs: GCGS or GDST or MSST or GCNS or GCST or GDNS or MENS
ENG2002 Technology, Sustainability and Society			1,2		2,3			
MAT1500 Engineering Mathematics 1			1		1			
REN1201 Environmental Studies			1		1			
MKT1001 Introduction to Marketing			1		1,2,3			
GIS3406 Remote Sensing and Image Processing			2		2			
SVY1104 Survey Computations A			2		2			Pre-requisite: SVY1102 or SVY1500 or Students must be enrolled in one of the following Programs: GCNS or GDNS or MENS

Major study: Geographic Information Systems (Major Study Code: 15409)								
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (WEB)			
	Year	Sem	Year	Sem	Year	Sem		
							Following Programs: GCST or GDST	
SVY3201 Sustainable Urban Design and Development		2		2				
SVY4203 Urban and Regional Planning		1		1				

Footnotes

- * Students who achieve a high level in Year 12 Mathematics, or an equivalent mathematics program, may be eligible to replace the study of [ENG1500 Engineering Fundamentals](#) with [MAT1500 Engineering Mathematics 1](#). Please refer to the notes in the General Information — Undergraduate Program Section of the Faculty's entry in this Handbook.
- ^ On-campus students should enrol in the external offering of this course
- # Students who have completed GIS2901 do not need to undertake [SVY2902](#).

Surveying Major recommended enrolment pattern

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

Elective courses

Elective courses are included in the list of Academic courses. Students should select these courses from the Electives list.

Surveying major recommended enrolment pattern

Major study: Surveying (Major Study Code: 15410)								
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (WEB)			
	Year	Sem	Year	Sem	Year	Sem		
Academic Courses								
ENG1500 Engineering Fundamentals*	1	1	1	1				
GIS1402 Geographic Information Systems	1	1	1	1				
SVY1102 Surveying A	1	1	2	1				
ENG1101 Introduction to Engineering Problem Solving	1	1	2	1,2				
ENG1002 Introduction to Engineering and Spatial Science Applications	1	2	1	1,2				
SVY1110 Introduction to Global Positioning System	1	2	1	2				
GIS1401 Geographic Data Presentation	1	2	2	2				
SVY1104 Survey Computations A	1	2	2	2			Pre-requisite: SVY1102 or SVY1500 or Students must be enrolled in one of the following Programs: GCST or GDST	
SVY2301 Automated Surveying Systems	2	1	3	1			Pre-requisite: SVY1104 or Students must be enrolled in one of the following Program s: GCST or GDST	
SVY2106 Geodetic Surveying A	2	1	3	1			Pre-requisite: SVY1110 or Students must be enrolled in one of the following Program s: GCNS or GCST or GDNS or GDST or MSST or MENS	
CIV2701 Road Design and Location	2	1	4	1			Pre-requisite: MAT1500 or ENG1500 or Students must be enrolled in one of the fol	

Major study: Surveying (Major Study Code: 15410)								
Course	Year of program and semester in which course is normally studied						Residential school (compulsory /optional)	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (WEB)			
	Year	Sem	Year	Sem	Year	Sem		
								Following Programs: GCST or GDGS
SVY2302 Mine Surveying	2	1	4	1				Pre-requisite: SVY1104 or Students must be enrolled in one of the following Programs: GCNS or GCST or GDNS or GDGS
ENG2102 Engineering Problem Solving and Analysis	2	2	3	2				Pre-requisite: ENG1101
SVY2303 Construction Surveying	2	2	3	2				Pre-requisite: SVY1104
SVY3304 Cadastral Surveying	2	2	4	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
Elective (Select from the Electives list)	2	2	4	2				
Practice Courses								
SVY1901 Surveying and Spatial Science Practice 1~	1		2	1			C	
SVY2902 Surveying and Spatial Science Practice 2~	2		3	3			C	Pre-requisite: SVY1901 and SVY1102 or Students must be enrolled in one of the following Programs: GCNS or GDNS or MENS
SVY2903 Surveying and Spatial Science Practice 3~	2		4	3			C	Pre-requisite: SVY1901 and SVY1102 or Students must be enrolled in one of the following Programs: GCNS or GDNS or MENS
Electives (Select from the following)								
CIV2605 Construction Engineering		1		1				
SVY3107 Geodetic Surveying B		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 MENS
ENG3003 Engineering Management		1		1				
ENV2201 Land Studies		1		1				
MAT1500 Engineering Mathematics 1		1		1				
REN1201 Environmental Studies		1		1				
SVY3200 Land Administration		2		2				
SVY3201 Sustainable Urban Design and Development		2		2				
GIS3405 Spatial Analysis and Modelling		2		2				

Footnotes

- * Students who achieve a high level in Year 12 Mathematics, or an equivalent mathematics program, may be eligible to replace the study of [ENG1500 Engineering Fundamentals](#) with [MAT1500 Engineering Mathematics 1](#). Please refer to the notes in the General Information — Undergraduate Program Section of the Faculty's entry in this Handbook.
- ~ On-campus students should enrol in the external offering of this course.