

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 (March) Semester 2 (July)	Semester 1 (March) 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 640 678 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 usqassist@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. Students may undertake Elective studies in approved areas which interest them all. 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 Boards of Surveyors in their Australian State or New Zealand. 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](#) program.

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](#).

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.

Practice courses are zero unit courses and each involves approximately 50 hours of student work. The only grades available for a Practice course are Pass (P) and Fail (F). A Practice course is designed to enable students to acquire specific competencies associated with their major study. These competencies range from specific practical and communication skills through to generic competencies relating to ethical and social responsibility, awareness of the environment, teamwork, etc. For an external student a Practice course generally involves attendance on-campus for a one-week residential school.

Program completion requirements

The Associate Degree in Spatial Science normally involves either two years of full-time study or four years of part-time study.

Students must complete the program within the maximum period of four years of full-time study or eight years of part-time study from the date of their initial enrolment. To graduate from a particular major students must successfully complete all of the core courses plus the specialist and Practice courses in that major, including the required number of Electives.

A pro-rata adjustment of the maximum time period will apply for those students who transfer from one mode of study to another. A pro-rata reduction in the maximum time period will apply to students who are admitted to a program with advanced standing.

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 in Spatial Science and who satisfy all of the requirements of the Diploma of Engineering Studies (Refer back to the 2006 USQ Handbook), may be permitted to exit with that award.

Geographic Information Systems Major

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 table

Geographic Information Systems Major 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				OE	
GIS1401 Geographic Data Presentation	1	1	1	1					
SVY1102 Surveying A	1	1	2	1					
ENG1101 Introduction to Engineering Problem Solving	1	1	2	1,2					
GIS1402 Geographic Information Systems	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	2	1	4	1					
Elective	2	2	3	2					
ENG2102 Engineering Problem Solving and Analysis	2	2	3	2				Pre-requisite: ENG1101	
GIS2403 Land Management Systems	2	2	4	2					
GIS3405 Spatial Analysis and Modelling	2	2	4	2				OE	
Practice Courses									
SVY1901 Surveying Practice 1	1	1	2	3			C	OE	
GIS2901 Geographic Information Systems Practice 1[^]			3	1			C	Pre-requisite: (SVY1901 and GIS1402) or Students must be enrolled in one of the following Programs: GDNS or MENS OE	
GIS3901 Geographic Information Systems Practice 2[^]			4	2			C	Pre-requisite: GIS2901 or Students must be enrolled in one of the following Programs: GDNS or MENS	

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.
- > The on-campus offering of this course has been timetabled for Semester 2. Students may consider enrolling in semester 1 however they may experience timetable clashes.
- ^ On-campus students should enrol in the external offering of this course.
- OE** Before enrolling in this course students must check that they have satisfied the 'Recommended prior study' or 'Other enrolment' requirements set out in the Other requisites section of the course specification.

Notes:

For students transferring from one program to another a complete list of enrolment requirements are available in the [course synopses](#) section of this Handbook.

Geographic Information Systems Major Elective courses

Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (WEB)		
	Year	Sem	Year	Sem	Year	Sem	
ACC1101 Accounting for Decision-Making		1,2		1,2,3			OE
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		1,3			OE
GIS4407 Web Based Geographic Information System		2		2			Pre-requisite: GIS1402 or Students must be enrolled in one of the following Programs: GCGS or GDGS or MSST or GCNS or GCST or GDNS or MENS
ENG2002 Technology, Sustainability and Society		1,2		2,3			
SVY4306 Land Law and Valuation				2			
MKT1001 Introduction to Marketing		1		1,2,3			OE
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: GCST or GDGS
SVY3201 Sustainable Urban Design and Development		2		2			
SVY4203 Urban and Regional Planning		1		1			

Footnotes

† [ENG3003 Engineering Management](#) will be offered externally in semester three in odd years.

- OE** Before enrolling in this course students must check that they have satisfied the 'Recommended prior study' or 'Other enrolment' requirements set out in the Other requisites section of the course specification.

Notes:

Other courses may be admissible as an Elective. However students must obtain approval from the relevant Head or Program Coordinator prior to enrolling in the course.

Surveying Major

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 table

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				OE	
GIS1401 Geographic Data Presentation	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					
GIS1402 Geographic Information Systems	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 GDGS	
SVY2301 Automated Surveying Systems	2	1	3	1				Pre-requisite: SVY1104 or Students must be enrolled in one of the following Programs: GCST or GDGS	
SVY2106 Geodetic Surveying A	2	1	3	1				Pre-requisite: SVY1110 or Students must be enrolled in one of the following Programs: GCNS or GCST or GDNS or GDGS 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 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 GDGS or MSST or MENS	
Elective	2	2	4	2					
Practice Courses									
SVY1901 Surveying Practice 1	1	1	2	3			C	OE	
SVY2902 Surveying Practice 2	2	1	3	3			C	Pre-requisite: SVY1901 OE	
SVY2903 Surveying Practice 3	2	2	4	2,3			C	Pre-requisite: (SVY2902 and SVY3304) or Students must be enrolled in one of the following Programs: GCNS or GDNS or MENS OE	

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.
- > The on-campus offering of this course has been timetabled for Semester 2. Students may consider enrolling in semester 1 however they may experience timetable clashes.
- OE** Before enrolling in this course students must check that they have satisfied the 'Recommended prior study' or 'Other enrolment' requirements set out in the Other requisites section of the course specification.

Notes:

For students transferring from one program to another a complete list of enrolment requirements are available in the [course synopses](#) section of this Handbook.

Surveying Major Elective courses

Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (WEB)		
	Year	Sem	Year	Sem	Year	Sem	
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 GDGS or MSST or MENS OE
ENG3003 Engineering Management †		1		1,3			OE
ENV2201 Land Studies		1		1			
GIS2403 Land Management Systems		2		2			
SVY3201 Sustainable Urban Design and Development		2		2			
GIS3405 Spatial Analysis and Modelling		2		2			OE

Footnotes

- † [ENG3003 Engineering Management](#) will be offered externally in semester three in odd years.
- OE** Before enrolling in this course students must check that they have satisfied the 'Recommended prior study' or 'Other enrolment' requirements set out in the Other requisites section of the course specification.