

Master of Spatial Science Technology (MSST) - MSpScTech

CRICOS code (International applicants): 062730G

| | 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: | 1.5 years full-time, 3 years part-time. International students should complete this program within the CRICOS duration which is 1.5 years. | |
| Program articulation: | From: ; Graduate Certificate in Spatial Science Technology ; Graduate Diploma of Geomatic Studies | |

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 |

Program focus

This postgraduate degree produces graduates who are skilled in spatial science investigations, evaluation and synthesis. It allows students to enhance their knowledge of a particular surveying or spatial science information discipline area for application, research or management purposes.

Program objectives

The [Master of Spatial Science Technology](#) is a graduate level program in the fields of geographic information systems (GIS) and surveying. A coursework component (8 units) is augmented by a research project component (4 units). This allows students to enhance and extend their knowledge of a particular GIS or surveying discipline area. Since spatial science is inherently a confluence of knowledge from various disciplines, a candidate from a non-spatial science background, such as biological and physical sciences, engineering, information technology, agriculture and forestry, arts, and business, can apply to this program.

Students who successfully complete the [Master of Spatial Science Technology](#) will be able to demonstrate an ability to:

- critically evaluate knowledge from the literature and other information sources relevant to spatial science fields;
- analyse technological trends, and current and advanced technologies in the spatial science area and related disciplines, such as sustainable development, information systems, and technology management;
- apply knowledge and skills in spatial science;
- undertake research into spatial science issues and applications.

Admission requirements

To be eligible for admission to the program candidates must possess a minimum of a three-year bachelors degree in surveying, geographic information systems, science, engineering, geography, information technology, education, agriculture, arts, business or related field of study awarded by an Australian university, or an equivalent qualification awarded by an overseas institution. Candidates from a non-spatial science background who completed a from USQ can also articulate to the [Master of Spatial Science Technology](#) program.

Candidates for admission must have demonstrated a high level of academic performance and must also comply with the University requirements for competency in written and spoken English. A candidate who has not completed a three-year bachelors degree may apply to the program, provided that the applicant:

- has worked as a professional in the field of spatial science (i.e. surveying, GIS, remote sensing and GPS) for a period of not less than five years and can provide documentary evidence, such as technical publications, that satisfies the Dean of the Faculty, that advanced knowledge has been acquired; and
- successfully completes an interview conducted by the Dean of the Faculty of Engineering and Surveying or his/her nominee to assess the candidate's chance of success in the program.

How to apply

Domestic students

[Application for postgraduate programs](#) may be made directly to USQ. You should ensure you submit your application by the [closing dates](#).

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 [Master of Spatial Science Technology](#) is comprised of 12 units of study as indicated in the following tables. It involves a minimum of either three (3) terms of full-time study or six (6) terms of part-time study.

A student can choose from one of the two major fields of study: GIS or surveying. The program is flexible, and depending on their previous undergraduate degree and current interests, allows a student to choose courses

from a) GIS and surveying courses, and b) related disciplines and application areas, such as sustainable development, information systems, and technology management. All students must complete a four unit research project and a pre-requisite course on research methods.

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.

Exemptions

Candidates for admission to the [Master of Spatial Science Technology](#) program are eligible to seek exemptions, in accordance with University regulations. The maximum number of exemptions permitted will be six (6) units. Studies used as the basis for claims for exemptions will normally have been completed within a period of five years prior to the date of application for exemptions and will not have been credited to another award.

Enrolment

The Master of Spatial Science Technology consists of 12 units of study as indicated in the following recommended enrolment patterns for each major study area. Each candidate must follow a specific schedule based on the candidate's major study (i.e. GIS or surveying).

The recommended enrolment pattern below is designed to cover a four-semester period for on-campus students. However, the program may be completed within three semesters.

Each student must complete the following:

- Four (4) courses from Group A (GIS and Surveying courses)
- Three (3) courses from Group B (related disciplines and application areas) and
- all courses in Group C (research methods and project dissertation).
- Students may select the additional courses from those listed in Schedule A or Schedule B

A student with previous undergraduate degree in the spatial sciences may opt to select fewer courses in Group A than required and thus will need to complete more courses from Group B, with the approval of the Head of Discipline. All students in this program must select or formulate a research dissertation topic that focuses on spatial sciences (i.e. GIS, remote sensing, surveying, GPS, spatial science education, etc.) and/or their applications.

Geographic Information Systems Major recommended enrolment pattern

| Major study: Geographic Information Systems (Major study Code: 15926) | | | | | | | | |
|---|--|-----|----------------|-----|--------------|-----|------------------------|----------|
| Course | Year of program and semester in which course is normally studied | | | | | | Enrolment requirements | Comments |
| | On-campus (ONC) | | External (EXT) | | Online (WEB) | | | |
| | Year | Sem | Year | Sem | Year | Sem | | |
| GROUP A** | | | | | | | | |
| Students must complete four Group A courses | | | | | | | | |
| SVY3202 Photogrammetry and Remote Sensing | 1 | 1 | | 1 | | | | |
| GIS3404 Geographic Data Visualisation | | 1 | | 1 | | | | |
| SVY4309 Practice Management for Spatial Scientists | 1 | 1 | | 1 | | | | |
| SVY4203 Urban and Regional Planning | 1 | 1 | | 1 | | | | |
| GIS1402 Geographic Information Systems | 1 | 2 | | 2 | | | | |
| GIS3405 Spatial Analysis and Modelling | 1 | 2 | | 2 | | | OE | |
| GIS3406 Remote Sensing and Image Processing | 1 | 2 | | 2 | | | | |

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| Course | Year of program and semester in which course is normally studied | | | | | | Enrolment requirements | Comments |
| | On-campus (ONC) | | External (EXT) | | Online (WEB) | | | |
| | Year | Sem | Year | Sem | Year | Sem | | |
| GIS4407 Web Based Geographic Information System | 1 | 2 | | 2 | | | Pre-requisite: GIS1402 or S students must be enrolled in one of the following Program s: GCGS or GDGS or MSST or GCNS or GCST or GDNS or MENS | |
| SVY4306 Land Law and Valuation | | | | 2 | | | | |
| SVY1110 Introduction to Global Positioning System | 2 | 2 | | 2 | | | | |
| GIS2403 Land Management Systems | 2 | 2 | | 2 | | | | |
| GROUP B | | | | | | | | |
| Students must complete three Group B courses | | | | | | | | |
| ENG8104 Asset Management in an Engineering Environment | 1,2 | 1 | | 1 | | | | |
| ENG8101 Technological Impact and its Management | 1,2 | 1 | | 1 | | | | |
| ENV4204 Environmental Technology | 1,2 | 1 | | 1 | | | Pre-requisite: MAT1100 or MAT1500 or Students must be enrolled in one of the following programs: GCEN or GDET or METC or MENS or GCNS or GDNS or MSST | |
| MGT3100 Quality and Performance Management | 1 | | | 1 | | | OE | |
| FIN5003 Decision Support Tools | 1,2 | 1 | | 1,3 | | 1,3 | OE | |
| CIS3001 Object-Oriented Programming with Java | 1,2 | 1 | | 1 | | | OE | |
| AGR2301 Agricultural Science | 1,2 | 2 | | 2 | | | | |
| CIS8010 Information Systems Project Management | 1,2 | 2 | | 2 | | | OE | |
| LAW2107 Environmental Law | 1,2 | 1,2 | | 1,2 | | | OE | |
| CIS5001 Information Systems for Managers | 1,2 | 1 | | 1 | | | OE | |
| ENG8103 Management of Technological Risk | 1,2 | 2 | | 2 | | | | |
| ENG8205 Technology Management Practice | 1,2 | 2 | | 2 | | | | |
| GROUP C | | | | | | | | |
| Students must complete both Group C courses | | | | | | | | |
| ENG8001 Engineering and Surveying Research Methodology* | 1 | 1, 2 | | 1, 2 | | 1, 2 | | |
| ENG8002 Project and Dissertation | 1 | 1,2 | | 1, 2 | | | Pre-requisite: ENG8001 OE 4 units | |

Footnotes

- ** A student with previous undergraduate degree in the spatial sciences may opt to select fewer courses in Group A than required (and thus will need more courses from Group B), upon approval by the Head of Discipline.
- * Best enrolled in Semester 1 of first year to satisfy ENG8002 Project and Dissertation pre-requisite.
- 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.

Surveying Major recommended enrolment pattern

| Major study: Surveying (Major Study Code: 15927) | | | | | | | | |
|--|--|-----|----------------|-----|--------------|-----|--|----------|
| Course | Year of program and semester in which course is normally studied | | | | | | Enrolment requirements | Comments |
| | On-campus (ONC) | | External (EXT) | | Online (WEB) | | | |
| | Year | Sem | Year | Sem | Year | Sem | | |
| Group A | | | | | | | | |
| GROUP A** | | | | | | | | |
| Students must complete four Group A courses | | | | | | | | |
| SVY4309 Practice Management for Spatial Scientists | 1 | 1 | | 1 | | | | |
| SVY4203 Urban and Regional Planning | 1 | 1 | | 1 | | | | |
| GIS3404 Geographic Data Visualisation | 1 | 1 | | 1 | | | | |
| SVY4306 Land Law and Valuation | 1 | | | 2 | | | | |
| GIS3405 Spatial Analysis and Modelling | 1 | 2 | | 2 | | | OE | |
| GIS3406 Remote Sensing and Image Processing | 1 | 2 | | 2 | | | | |
| SVY3201 Sustainable Urban Design and Development | 1 | 2 | | 2 | | | | |
| GIS2403 Land Management Systems | 1 | 2 | | 2 | | | | |
| SVY1110 Introduction to Global Positioning System | 1, 2 | 2 | | 2 | | | | |
| SVY2106 Geodetic Surveying A | 1, 2 | 1 | | 1 | | | Pre-requisite: SVY1110 or S tudents must be enrolled in one of the following Program s: GCNS or GCST or GDNS or GDGS or MSST or MENS | |
| SVY2105 Survey Computations B | 2 | 2 | | 2 | | | Pre-requisite: SVY2106 or S tudents must be enrolled in one of the following Program s: GCNS or GCST or GDNS or GDGS or MSST or MENS | |
| SVY3107 Geodetic Surveying B | 2 | 2 | | 2 | | | Pre-requisite: SVY1110 or S tudents must be enrolled in one of the following Program s: GCNS or GCST or GDNS or GDGS or MSST or MENS OE | |
| GIS1402 Geographic Information Systems | 1, 2 | 2 | | 2 | | | | |
| GROUP B | | | | | | | | |
| Students must complete three Group B courses | | | | | | | | |
| ENG8104 Asset Management in an Engineering Environment | 1, 2 | 1 | | 1 | | | | |
| ENG8101 Technological Impact and its Management | 1, 2 | 1 | | 1 | | | | |
| SVY3202 Photogrammetry and Remote Sensing | | 1 | | 1 | | | | |
| CIV2605 Construction Engineering | 1, 2 | 1 | | 1 | | | | |
| CIS3001 Object-Oriented Programming with Java | 1, 2 | 1 | | 1 | | | OE | |
| ENV4204 Environmental Technology | 1, 2 | 1 | | 1 | | | Pre-requisite: MAT1100 or MAT1500 or Students must be enrolled in one of the fol | |

| Major study: Surveying (Major Study Code: 15927) | | | | | | | | |
|--|--|-----|----------------|-----|--------------|-----|--|----------|
| Course | Year of program and semester in which course is normally studied | | | | | | Enrolment requirements | Comments |
| | On-campus (ONC) | | External (EXT) | | Online (WEB) | | | |
| | Year | Sem | Year | Sem | Year | Sem | | |
| | | | | | | | Following programs: GCEN or GDET or METC or MENS or GCNS or GDNS or MSST | |
| MGT3100 Quality and Performance Management | 1 | | | 1 | | | OE | |
| FIN5003 Decision Support Tools | 1,2 | 1 | | 1,3 | | 1,3 | OE | |
| CIS5001 Information Systems for Managers | 1,2 | 1 | | 1 | | | OE | |
| SVY3304 Cadastral Surveying | | 2 | | 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 | |
| CIS8010 Information Systems Project Management | 1,2 | 2 | | 2 | | | OE | |
| CIV3703 Transport Engineering | 1,2 | 2 | | 2 | | | | |
| ENG8103 Management of Technological Risk | 1,2 | 2 | | 2 | | | | |
| ENG8205 Technology Management Practice | 1,2 | 2 | | 2 | | | | |
| LAW2107 Environmental Law | 1,2 | 2 | | 2 | | | OE | |
| ECO8012 Tools and Techniques for Sustainable Development | 1,2 | | | 2 | | 2 | OE | |
| GROUP C | | | | | | | | |
| Students must complete both Group C courses | | | | | | | | |
| ENG8001 Engineering and Surveying Research Methodology* | 1 | 1,2 | | 1,2 | | 1,2 | | |
| ENG8002 Project and Dissertation | 1 | 1,2 | | 1,2 | | | Pre-requisite: ENG8001 OE 4 units | |

Footnotes

- ** A student with previous undergraduate degree in the spatial sciences may opt to select fewer courses in Group A than required (and thus will need more courses from Group B), upon approval by the Head of Discipline.
- * Best enrolled in Semester 1 of first year to satisfy [ENG8002](#) pre-requisite.
- 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.