

Graduate Diploma of Science (GDSI) - GradDipSci

CRICOS code (International applicants): 031448M

	On-campus*#~^	External#~
Semester intake:	Semester 1 (February) Semester 2 (July)	Semester 1 (February) Semester 2 (July)
Campus:	Ipswich, 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 year full-time, 2 years part-time	
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Applied Data Science specialisation

This specialisation is designed to provide an opportunity for graduates from all disciplines to gain skills and knowledge in handling data which are commonly known as Big Data, as well as producing and interpreting data analytics. The aim of this program is to provide students with a career path in the Data Science area or an opportunity for advancement in their career.

Environment and Sustainability specialisation

This specialisation provides graduates with knowledge of selected basic concepts and skills associated with environmental and climate science and the broad area of sustainability. The program aims to produce graduates with knowledge and skills for the integration of social, environmental and economic research within an interdisciplinary planning and policy framework and to provide capacity for the sustainable management of natural resources, businesses and communities.

Physics and Astronomy specialisation

This specialisation is designed to provide an opportunity to gain knowledge and skills in physics and astronomy and develop scientific research skills. The program provides professional development in science for those in educational or science communication careers.

Mathematics and Statistics specialisation

This specialisation aims to provide graduates with skills in key areas of mathematics or statistics that relate to the needs of their profession or industry, including teaching.

Sport and Exercise specialisation

This specialisation aims to provide graduates with the opportunity to develop and extend their knowledge and skills relevant to health, fitness and sports performance across the lifespan to an advanced level. The specialisation is designed to meet personal achievement goals or provide for career opportunities within the health, sports and fitness industry such as sports coaches, personal trainers, sports development officers or a range of other roles.

Program objectives

On completion of the program graduates will be able to:

- demonstrate an advanced understanding in their chosen specialisation
- conduct scholarly investigations into applications and methodologies in their chosen field
- communicate scientifically in manner appropriate to their discipline
- apply the specialist knowledge and skills acquired in their specialisation.

Specialisation Objectives

Agricultural Science specialisation

On completion of this specialisation graduates will be able to:

- demonstrate an understanding of broad range of issues associated with agricultural production and agricultural science
- conduct enquiries into contemporary issues associated with agricultural production
- understand the risks of climate change and climate variability on agricultural production.

Applied Climate Science specialisation

On completion of this specialisation graduates will be able to:

- demonstrate an advanced understanding of the climate systems
- appraise the impact of climate processes and variations on many sectors of human activity
- apply climate information and methodologies/tools in industry specific decision making processes
- evaluate the economic value of climate services in industry specific applications.

Applied Data Science specialisation

On completion of this specialisation graduates will be able to:

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.

Admission requirements

To be eligible for admission, applicants must satisfy the following requirements:

- Completion of an Australian university three year Bachelor degree in any area, or equivalent.
Or
equivalent professional work experience, as determined through the [Credit and Exemption Procedure](#).
- English Language Proficiency requirements for Category 3.

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.

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 [GovAustrali 0 1 433.154 p4-H 0 0 1 465](#).

- # [SCI3302 Industry Placement](#) may be available within each of the themes subject to approval of the Faculty of Health, Engineering and Sciences and availability of relevant placement.
- * Residential School

Applied Climate Science specialisation

The program consists of the following courses, which are all available by online mode only. Students may vary their enrolment on the basis of prior studies or professional requirements with the approval of the Faculty of Health, Engineering and Sciences. This specialisation does not include sufficient on-campus courses to be suitable for international on-campus students.

Semester 1	Semester 2
CLI8001 Climate Risk	CLI3302 Adaptation to Climate Change
CLI8204 Global Environmental Systems	CLI8205 Climate and Sustainability
CLI8002 Climate, Human and Environmental Health and Disaster Management *	CLI8003 Climate, Food, Water and Energy Security *

Footnotes

- * Two unit course

Applied Data Science specialisation

The Applied Data Science specialisation consists of eight courses which are all available on-campus and online.

Semester 1	Semester 2	Either Semester
CIS8008 Business Intelligence	CSC8001 Introduction to Data Science and Visualisation	CSC1401 Foundation Programming
CSC8500 Advanced Relational Database Design and Technology	CSC8002 Big Data Management	STA2300 Data Analysis
STA8005 Multivariate Analysis for High-Dimensional Data		
CSC8004 Data Mining		

Environment and Sustainability specialisation

The program consists of the follo

Health, Engineering and Sciences. This specialisation does not include sufficient on-campus courses to be suitable for international on-campus students.

Semester 1	Semester 2
PHY1101 Astronomy 1 [*]	PHY1107 Astronomy 2 [*]
PHY1104 Physics 1	PHY1911 Physics 2
SCI8101 Science in Practice	SCI8102 Research Skills
Plus one course selected from the following four:	
PHY8001 Observational Astronomy ^{^#}	PHY8003 Galactic Astronomy and Cosmology ^{^#}
PHY8002 Planetary Science ^{^#}	PHY8004 Stellar Astronomy ^{^#}

Footnotes

* Astronomical observations for each course are made remotely via internet access to USQ's Mt Kent Observatory. Voluntary field nights will also be made available.

^ Two unit course.

Astronomical observations for each course are made remotely via internet access to USQ's Mt Kent Observatory.

Mathematics and Statistics specialisation

The program consists of eight units of study. The courses studied will depend on the student's background in mathematics.

Students without the pre-requisites can take [MAT1102](#)

Level 1	Level 2	Level 3	Level 8
CSC1401 Foundation Programming	CSC2401 Algorithms and Data Structures	MAT3103 Mathematical Modelling and Dynamical Systems ^{^#±}	CSC8411 Independent Studies in Computing/Mathematics/Statistics B ^{\$}
ENM1600 Engineering Mathematics	MAT2100 Algebra and Calculus II ^{^±}	MAT3104 Mathematical Modelling in Financial Economics ^{^*±}	MAC8901 Issues in Teaching Mathematics [±]
MAT1100 Foundation Mathematics	STA2300 Data Analysis	SCI3302 Industry Placement ^{\$}	MAT8190 Mathematics/Statistics Complementary Studies B ^{±\$}
	STA2302 Statistical Inference ^{^\$}	STA3301 Statistical Models ^{\$}	STA8190 Advanced Statistics B ^{^\$}
	MAT2200 Operations Research I ^{^±}		

Footnotes

- [^] Students may vary their enrolment on the basis of prior studies or professional requirements with the approval of the Faculty of Health, Engineering and Sciences.
- [#] The on-campus offering of this course is offered in even years only.
- [±] Recommended courses for students wanting to teach mathematics.
- ^{\$} Recommended courses for students wanting to specialise in Statistics only.
- ^{*} The on-campus offering of this course is offered in odd years only.

Sport and Exercise specialisation

The program consists of four compulsory courses and three courses from the list of approved courses below.

Compulsory Courses	Approved Courses (choose three)
SES8005 Advanced Exercise Physiology	SES8008 Advanced Anatomy and Physiology ^{**}
SES8006 Advanced Exercise Programming and Rehabilitation	SES8001 Advanced Biomechanics
SES8007 Advanced Exercise Assessment and Delivery ^{**}	SES8003 Advanced Motor Control and Learning
MSC8001 Research Project I [^]	PSY3250 Sport and Exercise Psychology
	SES2101 Growth, Development and Lifespan
	SES2203 Physical Activity and Health
	SES3103 Nutrition and Exercise
	SES2204 Strength Training and Conditioning

Footnotes

- ^{**} Mandatory residential school
- [^] Two unit course

Required time limits

Students have a maximum of 3 years to complete this program.

IT requirements

Students should visit the USQ [minimum computing standards](#) to check that their computers are capable of running the appropriate software and versions of Internet web browsers and to check the minimum and

recommended standards for software. Students will need internet access to retrieve course materials, undertake assessment and participate in course online activities.

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. 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](#).

Sport and Exercise specialisation: For all modes there will be on-campus and practical attendance requirements for some courses. In order to successfully complete the program students must be able to fulfil any designated practical attendance requirements of a one week residential school in each year.

Articulation

Graduate Diploma of Science students may articulate to the [MSCN Master of Science](#) coursework program with further completion of eight courses, as required by that program.

Graduate Diploma of Science students may articulate to the [MSCR Master of Science \(Research\)](#) program if they meet other requirements for entry into that program.

Students must advise the Faculty in writing (usq.support@usq.edu.au) of their intention to articulate and this must occur prior to graduation from the Graduate Diploma of Science. If a student is articulating to the higher degree, they will apply to that higher degree and will only graduate from that higher degree.

Exit points

Students may exit with the Graduate Certificate of Science (Sport and Exercise students may exit with the Graduate Certificate of Sport and Exercise) on successful completion of four units of study appropriate for their chosen specialisation and with the required minimum number of level 8 courses. Students should consult the Faculty of Health, Engineering and Sciences should they wish to exit to ensure they satisfy requirements for the Graduate Certificate.

Credit

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

Applied Data Science specialisation:

Exemption of four units may be granted if student has completed the [GCSC Graduate Certificate of Science](#) offered by USQ.

Students who have completed [STA2300 Data Analysis](#) in their Bachelor degree may replace STA2300 with another STA level 2 or above course.

Students who have completed [CSC1401 Foundation Programming](#) in their Bachelor degree may replace CSC1401 with another CSC course.

Sport and Exercise specialisation:

Exemption of four units may be granted if student has completed the Graduate Certificate of Sport and Exercise (GCSE) offered by USQ.

Enrolment

Enrolment patterns will need to be determined for individual students. On acceptance into the program, students must submit an enrolment pattern for approval to the Faculty of Health, Engineering and Sciences. Pre-requisite courses should be taken as a guide to the assumed knowledge required for a course. It is the student's responsibility to ensure that they have the assumed knowledge before enrolling in a particular course.

Agricultural Science specialisation recommended enrolment pattern - full-time (2 Semesters, S1 entry only)

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.

Note: This specialisation is not available for International on-campus students as core courses are available in online mode only.

The recommended enrolment pattern for this specialisation is a recommended example. Students may vary or select their o

Sport and Exercise Specialisation recommended enrolment pattern - full-time commencing Semester 1 or Semester 2

Students are able to enrol in any of