Graduate Diploma of Science (GDSI) - GradDipSci

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 lifes1 Tf(tness and spoT)Tjra.em4/F1 11 Tfduates with

- demonstrate, through the breadth of their studies, an advanced understanding of issues, concepts and applications of sustainability in environment and natural resource management.

Physics and Astronomy specialisation
On completion of this specialisation graduatess will be able to:

- demonstrate a general professional understanding of the science of astronomy
- conduct scholarly enquiries into the research literature in astronomy and astrophysics
- apply scientific principles to solve problems with conceptual, observational or computational elements
- demonstrate competency in observational techniques, data analysis, and the interpretation of results

Mathematics and Statistics specialisation
On completion of this specialisation graduates will be able to:

- acquire specific knowledge and skills in mathematics and/or statistics which are relevant to their disciplines and careers
- apply problem solving and innovative thinking, to be able to contribute at a higher level to their professional environment
- understand the meaning and basis of fundamental mathematical and/or statistical ideas and techniques
- demonstrate the ability to model real-life scenarios in order to enable mathematical and/or statistical analysis
- demonstrate the ability to apply mathematics and/or statistics to the solution of problems in a variety of situations

Sport and Exercise specialisation
On completion of this specialisation graduates will be able to:

- demonstrate an advanced level of theoretical and technical knowledge and skills relevant to health, fitness and sports performance across the lifespan
- critically analyse and evaluate complex concepts of exercise related issues and circumstances of individuals and groups, including sports performers and those with disabilities, chronic diseases and from a range of age groups across the lifespan
- demonstrate highly-developed practical skills relevant to laboratory, clinical and field situations in the sport and exercise area
- display a high level of evidence-based practice, communication skills, professional development and research
- demonstrate competent, safe, professional and ethical responsibility as a practitioner or learner displayed

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 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. You are able to calculate the fees for a particular course via the Course Fee Finder.

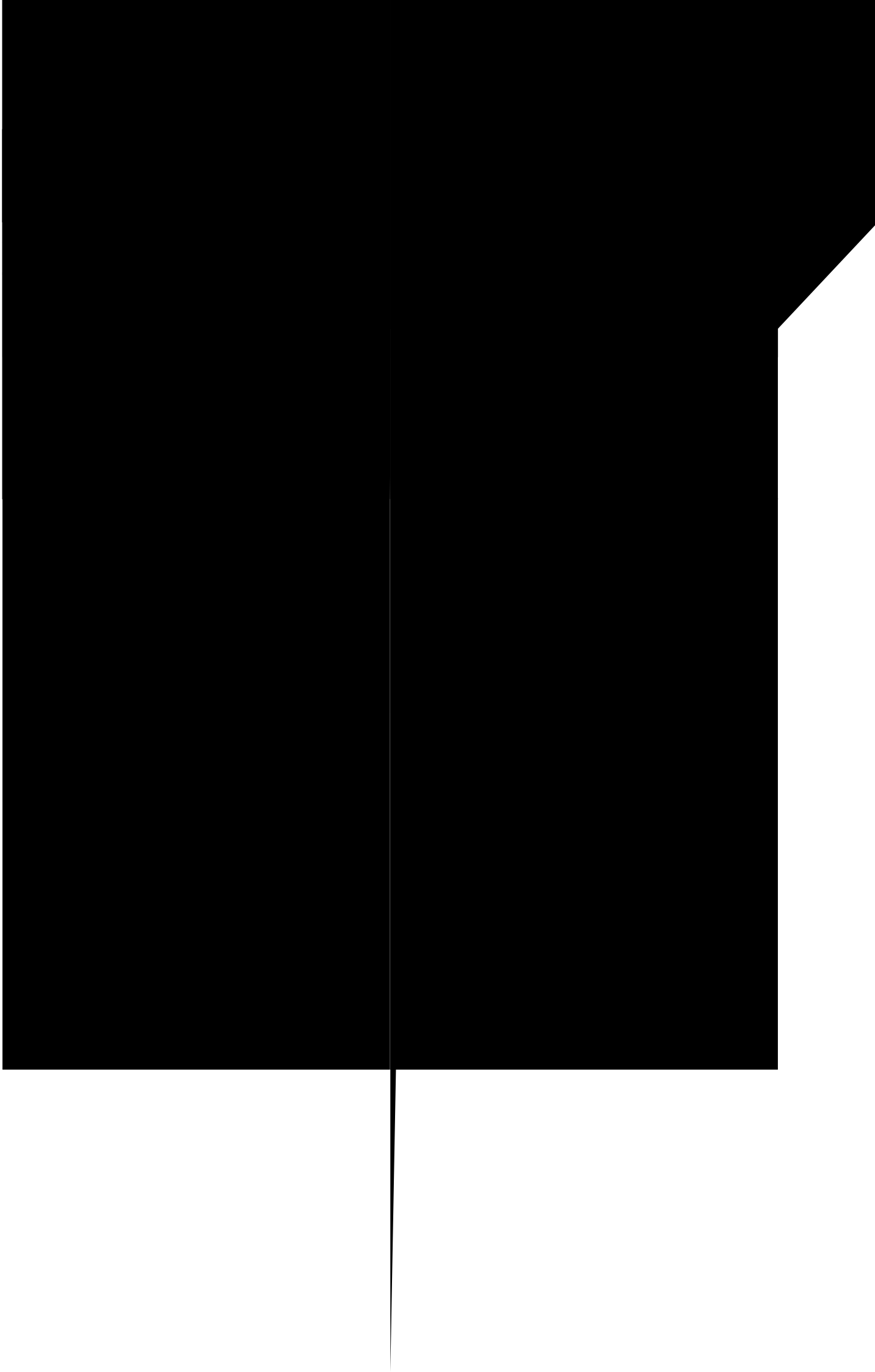
Program structure

All specialisations within the program consist of eight units of study taken from the Recommended Enrolment Pattern section. At least four units must be at Level 8 for the Environment and Sustainability, Physics and Astronomy specialisations and at least 2 units must be Level 8 for the Mathematics and Statistics specialisations.

Agricultural Science specialisation

The program consists of 4 core courses, all available in external mode, and 4 electives that can be taken as a themed ‘minor’ or as independent electives.

Semester 1†^	Semester 2†^
Mandatory core courses:	
AGR8001 Food Security in the 21st Century	AGR8002 Emerging Technologies in Agriculture
CLI8001 Climate Risk+	AGR8003 Critical Issues in Agriculture
Minor/Electives#	
Agricultural Practices Theme	
AGR2302 Agricultural Machinery	AGR2301 Agricultural Science
AGR3304 Soil Science	AGR3303 Agricultural Materials and Post-Harvest Technologies
ENV2201 Land Studies	AGR3305 Precision and Smart Technologies in Agriculture
	AGR4305 Agricultural Soil Mechanics
Wine Technology Theme	
WIN1101 Grape and Wine Production	WIN2215 Wine Biochemistry and Microbiology
WIN2200 Viticultural and Winemaking Practice*	WIN3304 Viticultural and Winemaking Practice 2 (Semester 3 only)
WIN2210 Viticultural Principles and Production	



Footnotes

± Recommended courses for students wanting to teach mathematics
^ 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 specialise in Statistics only

Semester 2 Courses

Level 1	Level 2	Level 3	Level 8
MAT1200 Operations Research 1^±	CSC2401 Algorithms and Data Structures	MAT3103 Mathematical Modelling and Dynamical Systems^#±	CSC8411 Independent Studies in Computing/Mathematics/Statistics B$
CSC1401 Foundation Programming	MAT2100 Algebra and Calculus II^±	MAT3104 Mathematical Modelling in Financial Economics^*±	MAC8901 Issues in Teaching Mathematics±
ENM1600 Engineering Mathematics	STA2300 Data Analysis	SCI3302 Industry Placement$	MAT8190 Mathematics/Statistics Complementary Studies B±$
MAT1100 Foundation Mathematics	STA2302 Statistical Inference^$	STA3301 Statistical Models$	STA8190 Advanced Statistics B^$

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.
± Recommended courses for students wanting to teach mathematics
The on-campus offering of this course is offered in even years only.
$ 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 specified electives below.

Compulsory Courses	Specified Electives (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	SES8003 Advanced Motor Control and Learning

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

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.

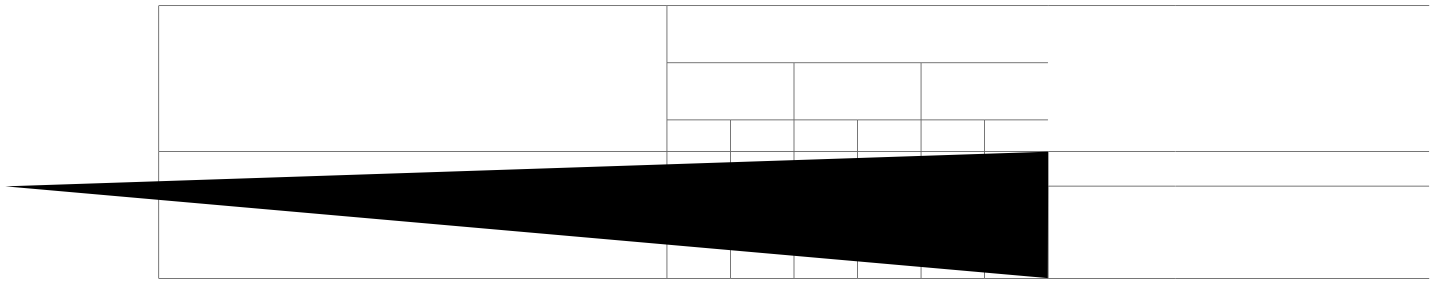
Students who have completed CSC1401 Foundation Programming in their Bachelor degree may replace CSC1401 with another CSC course.

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.

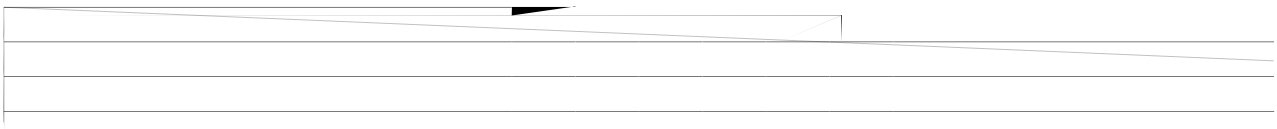
Enrolment

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.



Applied Data Science Specialisation recommended enrolment pattern - part-time commencing Semester 1

to graduate outlined above in the Program Structure. If unsure about a suitable enrolment pattern, students should contact the Faculty of Health, Engineering and Sciences.



Physics and Astronom

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	Vb^o	Pbj	Vb^o	Pbj	Vb^o	Pbj	
MAT8190 Mathematics/Statistics Complementary Studies B	1	2	1	2			
STA3301 Statistical Models	1	2					Pre-requisite: STA3300 or approval of examiner
							Pre-requisite: MAT1102 or MAT1502 or ENM1600 or Students must be enrolled in the following program: