

Master of Science (MSCN) - MSc

QTAC code (Australian and New Zealand applicants): Environment & Sustainability (Toowoomba campus: MSCN04; External: MSCN10); Sport & Exercise (Toowoomba campus: MSCN06; External: MSCN12); Astrophysics (Toowoomba campus: MSCN03; External: MSCN09); Mathematics & Statistics (Toowoomba campus: MSCN05; External: MSCN11); Unspecified (Toowoomba campus: MSCN02; External: MSCN08)

CRICOS code (International applicants): 078596M

	On-campus*†@#	External*^†@
Start:	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
Residential school:		Ipswich (Mandatory)
Standard duration:	2 years full-time, 4 years part-time	

Footnotes

- * Please refer to the Program Structure section for further information on mode of offer for each specialisation.
- † The Semester 2 intake for the Mathematics and Statistics specialisation will be subject to the approval of the Program Director.
- @ Sport and Exercise specialisation: courses that include a practical skill competency component and residential school will be conducted at USQ Ipswich.
- # The Agricultural Science specialisation is available at Toowoomba campus only, commencing in either Semester 1 or Semester 2.
- ^ The Sport and Exercise specialisation is not available to international overseas students.

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: study@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

Program aims

The aim of the Master of Science program is to produce graduates who are equipped with essential scientific knowledge and an appreciation of the latest literature and technologies.

Agricultural Science specialisation

The Australian agricultural industry contributes substantially to national GDP, as well, is a significant employer across all states/regions. There is a current demand for graduates with knowledge of contemporary agricultural production approaches, particularly in light of declining national water availability and quality. This specialisation provides graduates with an understanding of both national and global issues associated with agricultural production and sets these in a context of agroecosystem sustainability and broader societal challenges. Graduates from the program will have the capacity to engage across a range of agriculture related disciplines.

Applied Climate Science specialisation

The global climate service industry is estimated to have a significant and growing economic value. In Australia, the need for ‘climate smart’ professionals working within their chosen industry is growing with hundreds of job opportunities in industry and the public sector organisation. This specialisation is designed to provide graduates with the knowledge and decision-making skills to work as ‘climate smart’ professionals in many sectors of economic activity including agriculture, food, water, energy, health, and natural resource management industries.

Astrophysics specialisation

This specialisation is designed to provide an opportunity to gain knowledge and skills in astrophysics and develop scientific research skills. The program thus provides professional development in science for those in educational or science communication careers, and a specialist foundation of knowledge and skills for subsequent higher degree research.

Environment and Sustainability specialisation

Modern environment and natural resource management requires the integration of social, environmental and economic research within an interdisciplinary planning and policy framework. It also requires a capacity to handle complexity and uncertainty and the application of different methods of analysis and different approaches to governance and community engagement. This coursework Masters program addresses these needs by providing important core studies and flexibility in choice of elective studies that will enhance their skills and knowledge in the broad discipline of environment and sustainability. Adaptation to climate change and sustainability science are emphasised in global and regional contexts in this specialisation.

Mathematics and Statistics specialisation

This specialisation is designed to provide an opportunity for graduates from other than mathematics and statistics programs to gain advanced skills and knowledge in key areas of mathematics and/or statistics which relate to their career needs and the needs of their profession or industry. The aim of this program is therefore to provide students with a broad advanced education in mathematical and/or statistical techniques and essential problem solving skills which will meet their career needs and assist them in their professional development.

Sport and Exercise specialisation

The Master of Science (Sport and Exercise) specialisation aims to provide students 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. Students undertaking the program will usually have qualifications in various related disciplines (although any undergraduate degree is acceptable). The program may be used to meet work or professional requirements, allow for program exemptions, or form part of course requirements in other USQ postgraduate programs. The program 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. It also provides a pathway for students to enter into postgraduate programs such as a doctorate.

Program objectives

On completion of the program graduates should be able to:

- Integrate an advanced understanding of a complex body of expert knowledge in a discipline of science.
- Apply established research theories and principles associated with scholarship and/or professional practice within a relevant science discipline.
- Critically analyse, reflect on, and synthesise complex expert information, problems, concepts and theories applicable to a relevant science discipline.
- Interpret and transmit expert knowledge, skills and ideas, both individually and collaboratively, to specialist and non-specialist audiences.
- Display autonomy, responsibility, adaptability and ethical practise in decision-making and engage in lifelong learning through critical reflection in a range of professional and cultural contexts.

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 09. Graduates at this level will have specialised knowledge and skills for research, and/or professional practice 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.

As well as the following specialisation-specific requirements:

Master of Science (Mathematics and Statistics)

- Knowledge of mathematics at least equivalent to that found in [MAT1102 Algebra and Calculus I](#).

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 Schedules](#).

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. Students are able to calculate the fees for a particular course via the [Course Fee Schedule](#)

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. Students are able to calculate the fees for a particular course via the [Course Fee Schedules](#).

Program structure

Specialisation	Offering		
	ONC	ONL	EXT
Agricultural Science @	Toowoomba *		BIO3318 Plant Microbe Interactions includes a highly recommended residential school ^
Applied Climate Science		Online only	
Astrophysics		Online only	
Environment and Sustainability		Online only	
Mathematics and Statistics #@	Toowoomba	Online	
Sport and Exercise @	Toowoomba or Ipswich		some courses have mandatory residential schools which will be held at the Ipswich campus.

Footnotes

@ This specialisation is available to international on-campus students.

* The Agricultural Science specialisation is available at Toowoomba campus only, commencing in either Semester 1 or Semester 2.

^ Students enrolled externally must be able to attend the residential school at the Toowoomba campus.

The Semester 2 intake will be subject to the approval of the Program Director.

The Master of Science offers 6 specialisations. All specialisations consist of 16 units of courses, of which 8 units must be at Level 8. Some specialisations contain only core courses, where others allow approved courses.

The Master of Science consists of two tracks within each specialisation:

- **Research Training Track:** This track consists of 4 of the 16 units providing courses (including capstone experience) on research skills and training: [SCI8101 Science in Practice](#); [SCI8102 Research Skills](#); [SCI8103 Research Fundamentals and Ethics](#) and [STA8170 Statistics for Quantitative Researchers](#)
- **Research Project Track:** This track consists of 4 of the 16 units providing opportunity for students to undertake independent research in two capstone courses: [MSC8001 Research Project I](#) and [MSC8002 Research Project II](#). Normally these research project courses are undertaken in the latter stages of candidature. Students must have approval of the Program Director and a Supervisor prior to undertaking this track and is dependent on the availability of supervisors and resources.

Students may, with approval of the Program Director and acceptance by an appropriate supervisor, elect to replace two or four units of research training courses ([SCI8101 Science in Practice](#), [SCI8102 Research Skills](#), [SCI8103 Research Fundamentals and Ethics](#) and/or [STA8170 Statistics for Quantitative Researchers](#)) with one or two 2-unit research project courses ([MSC8001 Research Project I](#) and [MSC8002 Research Project II](#)).

Master of Science (Mathematics and Statistics): The Research Training Track courses for this specialisation are [SCI8101 Science in Practice](#), [SCI8103 Research Fundamentals and Ethics](#), [CSC8411 Independent Studies in Computing/Mathematics/Statistics B](#), and [CSC8002 Big Data Management](#). Students may, with approval of the Program Director and acceptance by an appropriate supervisor, elect to replace two or four units of research training courses ([SCI8101](#), [SCI8103](#), [CSC8411](#) and/or [CSC8002](#)) with one or two 2-unit research project courses ([MSC8001 Research Project I](#) and [MSC8002 Research Project II](#)). Research project courses will normally be undertaken towards the end of the program. The maximum number of courses other than Mathematics/Statistics courses to be credited must not exceed the number of approved courses (3). At the beginning of their candidature students should submit a proposed enrolment pattern to the Program Director for approval. Within this proposal students should have topics and names of any proposed supervisors for the

appropriate Level 8 courses. A maximum of three approved courses at USQ Level 2 or above can be taken from other discipline areas if prior approval has been sought by the student and approved by the Program Director.

Master of Science (Sport and Exercise): Students who have a Bachelor's degree in Sport and Exercise (or similar) may seek up to 4 credits/exemptions and one alternate approved course for the undergraduate level courses.

Required time limits

Students have a maximum of 8 years to complete this program.

Agricultural Science specialisation

This specialisation consists of 16 units of courses which are all available in either on-campus, external or online mode.

Semester 1	Semester 2	Either Semester
AGR8001 Food Security in the 21st Century	AGR8002 Emerging Technologies in Agriculture	
CLI8001 Climate Risk	AGR8003 Critical Issues in Agriculture	
AGR2303 Agronomy	BIO3318 Plant Microbe Interactions	
AGR3303 Agricultural Materials and Post-Harvest Technologies	Approved Elective ^{##}	
AGR4305 Agricultural Soil Mechanics	BIO8201 Biology Foundations	
SCI3302 Industry Placement	REN3302 Sustainable Resource Use	
and EITHER the following four courses, which comprise the Research Training Track: [#]		
SCI8103 Research Fundamentals and Ethics	SCI8101 Science in Practice	STA8170 Statistics for Quantitative Researchers
	SCI8102 Research Skills	
OR the following two courses (subject to prior approval), which comprise the Research Project Track:		
MSC8001 Research Project I [*]	MSC8002 Research Project II [*]	

Footnotes

^{##} Recommended Approved Elective is [ENV4106](#), or another Climate or Environment related (Level 4 or above) course.

[#] Instead of the Research Training Track, students may seek permission to do the Research Project Track and replace these courses with [MSC8001 Research Project I](#) AND [MSC8002 Research Project II](#).

^{*} Two-unit course.

Applied Climate Science specialisation

This specialisation consists of 16 units of courses which are all available in online mode.

Semester 1	Semester 2	Either Semester
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*	
Two Approved Specialisation Courses	Two Approved Specialisation Courses	
and EITHER the following four courses, which comprise the Research Training Track: [#]		
SCI8103 Research Fundamentals and Ethics	SCI8101 Science in Practice	STA8170 Statistics for Quantitative Researchers
	SCI8102 Research Skills	
OR the following two courses (subject to prior approval), which comprise the Research Project Track:		
MSC8001 Research Project I*	MSC8002 Research Project II*	

Footnotes

* Two unit course

Instead of the Research Training Track, students may seek permission to do the Research Project Track and replace these courses with [MSC8001 Research Project I](#) AND [MSC8002 Research Project II](#).

Astrophysics specialisation

This specialisation consists of 16 units of courses which are all available in online mode.

Semester 1	Semester 2	Either Semester
PHY1101 Astronomy 1	PHY1107 Astronomy 2	
PHY8001 Observational Astronomy*	PHY8004 Stellar Astronomy*	
PHY8002 Planetary Science*	PHY8003 Galactic Astronomy and Cosmology*	
Approved Courses x 2 [^]		
and EITHER the following four courses, which comprise the Research Training Track: [#]		
SCI8103 Research Fundamentals and Ethics	SCI8101 Science in Practice	STA8170 Statistics for Quantitative Researchers
	SCI8102 Research Skills	
OR the following two courses (subject to prior approval), which comprise the Research Project Track:		
MSC8001 Research Project I*	MSC8002 Research Project II*	

Footnotes

* Two unit course

[^] Approved courses are for students to take complementary studies in physics, mathematics, statistics or computing. The selection of the approved courses is to be made in consultation with, (and be approved by) the Program Director via usq.support@usq.edu.au.

Instead of the Research Training Track, students may seek permission to do the Research Project Track and replace these courses with [MSC8001 Research Project I](#) AND [MSC8002 Research Project II](#).

Environment and Sustainability specialisation

This specialisation consists of 16 units of courses which are all available in online mode.

Semester 1	Semester 2	Either Semester
REN8101 Environment, Society and Sustainability	REN8202 Conservation for Sustainable Futures	
CLI8204 Global Environmental Systems	REN8203 Sustainability Science	

Approved Course [^]	CLI8205 Climate and Sustainability	
CLI3301 Climate and Environment Risk Assessment	ECO8012 Methods for Sustainable Development	
AGR8001 Food Security in the 21st Century	REN3301 Biodiversity and Conservation	
ECO8011 Global Issues in Sustainability	REN3302 Sustainable Resource Use	
and EITHER the following four courses, which comprise the Research Training Track . [#]		
SCI8103 Research Fundamentals and Ethics	SCI8101 Science in Practice	STA8170 Statistics for Quantitative Researchers
	SCI8102 Research Skills	
OR the following two courses (subject to prior approval), which comprise the Research Project Track :		
MSC8001 Research Project I [*]	MSC8002 Research Project II [*]	

Footnotes

[^] Students can choose one of the following approved courses: [SCI3302 Industry Placement](#), [CLI8001 Climate Risk](#), [AGR3304 Soil Science](#), [ENV3105 Hydrology](#) or other approved course approved by the Program Director.

[#] Instead of the Research Training Track, students may seek permission to do the Research Project Track and replace these courses with [MSC8001 Research Project I](#) AND [MSC8002 Research Project II](#).

^{*} Two unit course

Mathematics and Statistics specialisation

This specialisation consists of 16 units of courses which are all available in online or on-campus mode. Students may seek approval from the Program Director to enrol in courses not listed in this table.

Semester 1	Semester 2	Either Semester
Core Courses: choose at least 9 Core courses and at most 12 Core Courses. At least 4 of the selected courses from Core Courses and Approved Courses must be at level 8.		
ENM2600 Advanced Engineering Mathematics	MAT2100 Algebra and Calculus II ^{**}	STA8170 Statistics for Quantitative Researchers
MAT2409 High Performance Numerical Computing	MAT2200 Operations Research 1 ^{**}	
STA2301 Distribution Theory	STA2302 Statistical Inference	
MAT3105 Harmony of Partial Differential Equations ^{+**}	MAT3103 Mathematical Modelling and Dynamical Systems ^{+**}	
MAT3201 Operations Research 2 ^{@**}	MAT3104 Mathematical Modelling in Financial Economics ^{@**}	
STA3300 Experimental Design	STA3301 Statistical Models	
MAT8180 Mathematics/Statistics Complementary Studies A [^]	MAT8190 Mathematics/Statistics Complementary Studies B [^]	
CSC8410 Independent Studies in Computing/Mathematics/Statistics A [^]	CSC2410 Computational Thinking with Python	
STA8005 Multivariate Analysis for High-Dimensional Data ^{**}	STA8190 Advanced Statistics B [^]	
STA8180 Advanced Statistics A [^]		

Approved Courses: choose at most 3 Approved Courses. At least 4 of the selected courses from Core Courses AND Approved Courses must be at level 8.		
EDU8326 Learning Difficulties: Mathematics**	MAC8901 Issues in Teaching Mathematics**	SCI3302 Industry Placement ^{^^}
and EITHER the following four courses, which comprise the Research Training Track: [#]		
SCI8103 Research Fundamentals and Ethics	CSC8411 Independent Studies in Computing/Mathematics/Statistics B	
SCI8101 Science in Practice	CSC8002 Big Data Management	
OR the following two courses (subject to prior approval), which comprise the Research Project Track:		
MSC8001 Research Project I*	MSC8002 Research Project II*	

Footnotes

- ** Recommended courses for students wanting to teach mathematics.
+ The on-campus offering of this course is offered in even years only.
@ The on-campus offering of this course is offered in odd years only.
^ These courses are topics based courses. Student should select a topic from the course specifications and email the examiner prior to enrolment to receive enrolment approval.
^^ Available in S1, S2 and S3
Instead of the Research Training Track, students may seek permission to do the Research Project Track and replace these courses with [MSC8001 Research Project I](#) AND [MSC8002 Research Project II](#).
* Two unit course

Sport and Exercise specialisation

This specialisation consists of 16 units of courses which are all available in either on-campus, external or online mode.

Semester 1	Semester 2	Either Semester
SES8005 Advanced Exercise Physiology	SES8001 Advanced Biomechanics	
SES8003 Advanced Motor Control and Learning	SES8007 Advanced Exercise Assessment and Delivery	
SES8006 Advanced Exercise Programming and Rehabilitation	SES3206 Strength Training and Conditioning	
SES8008 Advanced Anatomy and Physiology	PSY3250 Sport and Exercise Psychology	
One approved elective course from the list below or as approved by the Program Director	SES2203 Physical Activity and Health	
SES1101 Growth, Development and Lifespan	SES1103 Nutrition and Exercise	
and EITHER the following four courses, which comprise the Research Training Track: [#]		
SCI8103 Research Fundamentals and Ethics	SCI8101 Science in Practice	STA8170 Statistics for Quantitative Researchers
	SCI8102 Research Skills	
OR the following two courses (subject to prior approval), which comprise the Research Project Track:		
MSC8001 Research Project I*	MSC8002 Research Project II*	

Footnotes

- # Instead of the Research Training Track, students may seek permission to do the Research Project Track and replace these courses with [MSC8001 Research Project I](#) AND [MSC8002 Research Project II](#).
 * Two unit course

Approved Course List

Course	Semester(s) offered Toowoomba	Semester(s) offered Springfield	Semester(s) offered Ipswich	Semester(s) offered External	Semester(s) offered Online
SES8299 Advanced Professional Placement	1		1	1	
ACC5502 Accounting and Financial Management	1	1			1,3
MGT8033 Leading Organisational Change	1	1,2			1,2
MBA8000 Applied Business Research and Ethics		1			1,2
MGT8038 Leadership Development					1,2
EDU8400 Mentoring and Coaching					1,2
EDU8606 Lifelong Career Development					1
CSC5020 Foundations of Programming	1				1,2,3
PUB5001 Introduction to Editing and Publishing					1,3
PCM5000 Practical Editorial Skills					1
HSW8220 Promoting Community Access and Inclusion					1

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.

Other program requirements

To qualify for the award of Master of Science (Environment and Sustainability) students must pass 16 units of courses, at least eight of which are to be Level 8 courses listed in the Recommended Enrolment Pattern section. Students who have completed the same courses or similar courses at USQ or elsewhere may replace these with additional approved courses with the approval of the Program Director via usq.support@usq.edu.au.

Residential schools

The attendance requirement of residential schools within this degree is indicated by the following letters: R = Recommended; HR = Highly Recommended; M = Mandatory. To 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](#).

Students completing the 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.

Agricultural Science Specialisation

- [BIO3318 Plant Microbe Interactions](#)

Sport and Exercise Specialisation

- [SES1103 Nutrition and Exercise](#)
- [SES3206 Strength Training and Conditioning](#)
- [SES8001 Advanced Biomechanics](#)
- [SES8003 Advanced Motor Control and Learning](#)
- [SES8005 Advanced Exercise Physiology](#)
- [SES8006 Advanced Exercise Programming and Rehabilitation](#)
- [SES8007 Advanced Exercise Assessment and Delivery](#)
- [SES8008 Advanced Anatomy and Physiology](#)

Articulation

Students completing the [Master of Science](#) research project track would be eligible to apply for articulation to the [Master of Science \(Research\)](#) or [Doctor of Philosophy](#) programs if they meet other requirements for entry into those programs.

Students completing the [Master of Science](#) research training track with the appropriate GPA would be eligible to apply for enrolment in the [Master of Science \(Research\)](#) (Advanced) and then could progress (articulate) to a PhD via that route once they have demonstrated satisfactory progress in a significant research component.

Exit points

Students may exit with [Graduate Diploma of Science](#) specialisation on successful complete of a least 8 courses within the [Master of Science](#) if they have satisfied the requirements of a [Graduate Diploma of Science](#) specialisation. Students may exit with the [Graduate Diploma of Science](#) (General) if they have completed at least 8 courses from one or more of the specialisations of [MSCN](#), and at least 4 of them are at level 8.

Students may exit with [Graduate Certificate of Science](#) specialisation on successful completion of at least 4 courses within the [Master of Science](#) if they have satisfied the requirements of a [GCSC Graduate Certificate of Science](#) specialisation. Students may exit with the [Graduate Certificate of Science](#) (General) if they have

completed at least 4 courses from one or more of the specialisations of [Master of Science](#), and at least 2 of them are at level 8.

Students in the Sport and Exercise specialisation may exit with the [Graduate Certificate of Sport and Exercise](#) on successful completion of four approved units of study or the [Graduate Diploma of Science \(Sport and Exercise\)](#) after eight approved units of study.

Credit

Exemptions/credit for all specialisations will be assessed according to [USQ procedure](#).

- Up to **four** units of coursework exemptions or credit will be granted if the student has completed courses equivalent to courses offered in the particular MSCN specialisation in either:
 - USQ's [Graduate Certificate of Science](#); or
 - A Bachelor's degree in a discipline equivalent to the specialisation; or
 - A Graduate Diploma or Bachelor's Honours Degree qualification in a discipline different from the current area of study.
- Up to **eight** units of coursework credit or exemptions will be granted if the student has completed courses equivalent to courses offered in the particular MSCN specialisation in either:
 - [Graduate Diploma of Science](#) or Bachelor's Honours in a discipline equivalent to the specialisation.

Notes:

- All requests for credits or exemptions need to be sought by the student and approved by the Program Director.
- The Program Director will deem to what extent prior studies are equivalent to the relevant specialisation.

Enrolment

Recommended Enrolment Pattern - Agricultural Science specialisation Full-time (4 Semesters, S1 or S2 entry)

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.

Students may, with approval of the Program Director and acceptance by an appropriate supervisor, elect to replace two or four units of research training courses ([SCI8101 Science in Practice](#), [SCI8102 Research Skills](#), [SCI8103 Research Fundamentals and Ethics](#) and/or [STA8170 Statistics for Quantitative Researchers](#)) with one or two 2-unit research project courses ([MSC8001 Research Project I](#) and [MSC8002 Research Project II](#)).

Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
Year 1 Semester 1								
AGR8001 Food Security in the 21st Century	1	1			1	1		
CLI8001 Climate Risk					1	1		
AGR2303 Agronomy	1	1			1	1		
AGR3303 Agricultural Materials and Post-Harvest Technologies	1	1			1	1		
Year 1 Semester 2								
BIO8201 Biology Foundations					1	2		
AGR8003 Critical Issues in Agriculture	1	2			1	2		
BIO3318 Plant Microbe Interactions	1	2	1	2			HR	Pre-requisite: BIO1101 or S students must be enrolled in one of the following Program

Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
							s: BATM or BENV or GCSC or GDSI or MSCN	
Approved Elective	1	2			1	2		
Year 2 Semester 1								
AGR4305 Agricultural Soil Mechanics	2	1			2	1		
SCI3302 Industry Placement	2	3	2	1,2			Pre-requisite: Completion of 2nd year (or 2 years full time study in a relevant area)	
Either the following two courses for the Research Training Track								
SCI8103 Research Fundamentals and Ethics #	2	1			2	1	Pre-requisite: Students must be enrolled in one of the following programs: MSCN or MSCR or MCTN or MADS or GCSC or GDSI or DPHD or its equivalent. Enrolment is not permitted in SCI8103 if SCI4405 has been previously completed.	
STA8170 Statistics for Quantitative Researchers <#	2	1			2	1,2	Enrolment is not permitted in STA8170 if STA2300 or STA1003 has been previously completed.	
or the following course for the Research Project Track (if approved instead of Research Training Track)								
MSC8001 Research Project I *	2	1,2			2	1,2	Pre-requisite: Students must be enrolled in one of the following Programs: MCTN or MCOP or MCTE or MSCN or MCCO or MADS or have the approval of their program coordinator	
Year 2 Semester 2								
AGR8002 Emerging Technologies in Agriculture	2	2			2	2		
REN3302 Sustainable Resource Use	2	2			2	2		
Either the following two courses for the Research Training Track								
SCI8101 Science in Practice #					2	2		
SCI8102 Research Skills #					2	2		
or the following course for the Research Project Track (if approved instead of Research Training Track)								
MSC8002 Research Project II *	2	1,2			2	1,2	Pre-requisite: MSC8001	

Footnotes

- # Instead of the Research Training Track, students may seek permission to do the Research Project Track and replace these courses with [MSC8001](#) (2 units) and [MSC8002](#) (2 units).
< If [STA2300](#) has been completed previously, contact the Program Director to choose an alternative course to [STA8170](#).
* Two unit course

Recommended Enrolment Pattern - Agricultural Science specialisation Part-time (8 Semesters, S1 or S2 entry)

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.

Students may, with approval of the Program Director and acceptance by an appropriate supervisor, elect to replace two or four units of research training courses ([SCI8101 Science in Practice](#), [SCI8102 Research Skills](#), [SCI8103 Research Fundamentals and Ethics](#) and/or [STA8170 Statistics for Quantitative Researchers](#)) with one or two 2-unit research project courses ([MSC8001 Research Project I](#) and [MSC8002 Research Project II](#)).

Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
Year 1								
AGR8001 Food Security in the 21st Century	1	1			1	1		
CLI8001 Climate Risk					1	1		
BIO8201 Biology Foundations					1	2		
AGR8003 Critical Issues in Agriculture	1	2			1	2		
Year 2								
AGR2303 Agronomy	2	1			2	1		
AGR3303 Agricultural Materials and Post-Harvest Technologies	2	1			2	1		
BIO3318 Plant Microbe Interactions	2	2	2	2			HR	Pre-requisite: BIO1101 or S students must be enrolled in one of the following Program s: BATM or BENV or GCSC or GDSI or MSCN
Approved Elective	2	2			2	2		
Year 3								
AGR4305 Agricultural Soil Mechanics	3	1			3	1		
SCI3302 Industry Placement	3	3	3	1				Pre-requisite: Completion of 2nd year (or 2 years full time study in a relevant area)
AGR8002 Emerging Technologies in Agriculture	3	2			3	2		
REN3302 Sustainable Resource Use	3	2			3	2		
Year 4 Semester 1 - either the following two courses for the Research Training Track								
SCI8103 Research Fundamentals and Ethics [#]	4	1			4	1		Pre-requisite: Students must be enrolled in one of the following programs: MSCN or MSCR or MCTN or MADS or GCSC or GDSI or DPHD or its equivalent. Enrolment is not permitted in SCI8103 if SCI4405 has been previously completed.
STA8170 Statistics for Quantitative Researchers ^{<#}	4	1			4	1,2		Enrolment is not permitted in STA8170 if STA2300 or STA1003 has been previously completed.
or the following course for the Research Project Track (if approved instead of Research Training Track)								
MSC8001 Research Project I [*]	4	1			4	1		Pre-requisite: Students must be enrolled in one of the fol

Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
								Following Programs: MCTN or MCOP or MCTE or MSCN or MCCO or MADS or have the approval of their program coordinator
Year 4 Semester 2- either the following two courses for the Research Training Track								
SCI8101 Science in Practice [#]						4	2	
SCI8102 Research Skills [#]						4	2	
or the following course for the Research Project Track (if approved instead of Research Training Track)								
MSC8002 Research Project II [*]	4	2				4	2	Pre-requisite: MSC8001

Footnotes

- # Instead of the Research Training Track, students may seek permission to do the Research Project Track and replace these courses with [MSC8001](#) (2 units) and [MSC8002](#) (2 units).
< If STA2300 has been completed previously, contact the Program Director to choose an alternative course to STA8170.
* Two unit course

Recommended Enrolment Pattern - Applied Climate Science specialisation Full-time (4 Semesters, S1 entry)

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.

Students may, with approval of the Program Director and acceptance by an appropriate supervisor, elect to replace two or four units of research training courses ([SCI8101 Science in Practice](#), [SCI8102 Research Skills](#), [SCI8103 Research Fundamentals and Ethics](#) and/or [STA8170 Statistics for Quantitative Researchers](#)) with one or two 2-unit research project courses ([MSC8001 Research Project I](#) and [MSC8002 Research Project II](#)).

Course	Year of program and semester in which course is normally studied						Enrolment requirements	
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
Year 1 Semester 1								
CLI8001 Climate Risk						1	1	
CLI8204 Global Environmental Systems						1	1	
Either the following two courses for the Research Training Track								
STA8170 Statistics for Quantitative Researchers ^{<#}	1	1				1	1,2	Enrolment is not permitted in STA8170 if STA2300 or STA1003 has been previously completed.
SCI8103 Research Fundamentals and Ethics [#]	1	1				1	1	Pre-requisite: Students must be enrolled in one of the following programs: MSCN or MSCR or MCTN or MADS or GCSC or GDSI or DPHD or its equivalent. Enrolment is not permitted in SCI8103 if SCI4405 has been previously completed.
or the following course for the Research Project Track (if approved instead of Research Training Track)								
MSC8001 Research Project I [*]	1	1				1	1	Pre-requisite: Students must be enrolled in one of the following Programs: MCTN or MCOP or MCTE or MSCN or MCCO or MADS

Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
							or have the approval of their program coordinator
Year 1 Semester 2							
CLI3302 Adaptation to Climate Change					1	2	
CLI8205 Climate and Sustainability					1	2	
Approved Specialisation Course ⁺					1	2	
Approved Specialisation Course ⁺					1	2	
Year 2 Semester 1							
CLI8002 Climate, Human and Environmental Health and Disaster Management [*]					2	1	
Approved Specialisation Course ⁺					2	1	
Approved Specialisation Course ⁺					2	1	
Year 2 Semester 2							
CLI8003 Climate, Food, Water and Energy Security [*]					2	2	
Either the following two courses for the Research Training Track							
SCI8101 Science in Practice [#]					2	1,2	
SCI8102 Research Skills [#]					2	1,2	
or the following course for the Research Project Track (if approved instead of Research Training Track)							
MSC8002 Research Project II [*]	2	2			2	2	Pre-requisite: MSC8001

Footnotes

- < If STA2300 has been completed previously, contact the Program Director to choose an alternative course to STA8170.
- # Instead of the Research Training Track, students may seek permission to do the Research Project Track and replace these courses with [MSC8001](#) (2 units) and [MSC8002](#) (2 units).
- * Two unit course
- + Approved Specialisation Courses — courses complementary to the specialisation approved by the Program Director

Recommended Enrolment Pattern - Applied Climate Science specialisation Part-time (8 Semesters, S1 or S2 entry)

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.

Students may, with approval of the Program Director and acceptance by an appropriate supervisor, elect to replace two or four units of research training courses ([SCI8101 Science in Practice](#), [SCI8102 Research Skills](#), [SCI8103 Research Fundamentals and Ethics](#) and/or [STA8170 Statistics for Quantitative Researchers](#)) with one or two 2-unit research project courses ([MSC8001 Research Project I](#) and [MSC8002 Research Project II](#)).

Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
Year 1							
CLI8001 Climate Risk					1	1	
CLI8204 Global Environmental Systems					1	1	
CLI8205 Climate and Sustainability					1	2	

Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
Approved Specialisation Course ⁺					1	2	
Year 2							
Either the following two courses for the Research Training Track							
SCI8103 Research Fundamentals and Ethics [#]	2	1			2	1	Pre-requisite: Students must be enrolled in one of the following programs: MSCN or MSCR or MCTN or MADS or GCSC or GDSI or DPHD or its equivalent. Enrolment is not permitted in SCI8103 if SCI4405 has been previously completed.
STA8170 Statistics for Quantitative Researchers ^{<#}	2	1			2	1,2	Enrolment is not permitted in STA8170 if STA2300 or STA1003 has been previously completed.
or the following course for the Research Project Track (if approved instead of Research Training Track)							
MSC8001 Research Project I [*]	2	1			2	1	Pre-requisite: Students must be enrolled in one of the following Programs: MCTN or MCOP or MCTE or MSCN or MCCO or MADS or have the approval of their program coordinator
CLI3302 Adaptation to Climate Change					2	2	
Approved Specialisation Course ⁺					2	2	
Year 3							
CLI8002 Climate, Human and Environmental Health and Disaster Management [*]					3	1	
CLI8003 Climate, Food, Water and Energy Security [*]					3	2	
Year 4							
Approved Specialisation Course ⁺					4	1	
Approved Specialisation Course ⁺					4	1	
Either the following two courses for the Research Training Track							
SCI8101 Science in Practice [#]					4	2	
SCI8102 Research Skills [#]					4	2	
or the following course for the Research Project Track (if approved instead of Research Training Track)							
MSC8002 Research Project II [*]	4	2			4	2	Pre-requisite: MSC8001

Footnotes

- + Approved Specialisation Courses — courses complementary to the specialisation approved by the Program Director
- # Instead of the Research Training Track, students may seek permission to do the Research Project Track and replace these courses with [MSC8001](#) (2 units) and [MSC8002](#) (2 units).
- < If [STA2300](#) has been completed previously, contact the Program Director to choose an alternative course to [STA8170](#).
- * Two unit course

Recommended Enrolment Pattern - Astrophysics specialisation Full-time (4 Semesters, S1 or S2 entry)

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.

Students may, with approval of the Program Director and acceptance by an appropriate supervisor, elect to replace two or four units of research training courses ([SCI8101 Science in Practice](#), [SCI8102 Research Skills](#), [SCI8103 Research Fundamentals and Ethics](#) and/or [STA8170 Statistics for Quantitative Researchers](#)) with one or two 2-unit research project courses ([MSC8001 Research Project I](#) and [MSC8002 Research Project II](#)).

Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
Year 1 Semester 1							
PHY1101 Astronomy 1					1	1	
Approved Course [^]	1	1			1	1	
PHY8001 Observational Astronomy [*]					1	1	
Year 1 Semester 2							
PHY1107 Astronomy 2					1	2	
Approved Course [^]	1	2			1	2	
PHY8004 Stellar Astronomy [*]					1	2	
Year 2 Semester 1							
PHY8002 Planetary Science [*]					2	1	
Either the following two courses for the Research Training Track							
STA8170 Statistics for Quantitative Researchers ^{<#}	2	1			2	1,2	Enrolment is not permitted in STA8170 if S TA2300 or STA1003 has been previously completed.
SCI8103 Research Fundamentals and Ethics [#]	2	1			2	1	Pre-requisite: Students must be enrolled in one of the following programs: MSCN or M SCR or MCTN or MADS or GCSC or GDSI or DPHD or its equivalent. Enrolment is not permitted in SCI8103 if SCI4405 has been previously completed.
or the following course for the Research Project Track (if approved instead of Research Training Track)							
MSC8001 Research Project I [*]	2	1			2	1	Pre-requisite: Students must be enrolled in one of the following Programs: MCTN or M COP or MCTE or MSCN or MCOO or MADS or have the approval of their program coordinator
Year 2 Semester 2							
PHY8003 Galactic Astronomy and Cosmology [*]					2	2	
Either the following two courses for the Research Training Track							
SCI8101 Science in Practice [#]					2	2	
SCI8102 Research Skills [#]					2	2	
or the following course for the Research Project Track (if approved instead of Research Training Track)							
MSC8002 Research Project II [*]	2	2			2	2	Pre-requisite: MSC8001

Footnotes

- [^] This approved course is for students to take complementary studies in physics, mathematics, statistics or computing. Choice of the approved courses should be made in consultation with, and be approved by the Program Director via usq.support@usq.edu.au.
- ^{*} Two unit course
- [<] If [STA2300](#) has been completed previously, contact the Program Director to choose an alternative course to [STA8170](#).

Instead of the Research Training Track, students may seek permission to do the Research Project Track and replace these courses with [MSC8001](#) (2 units) and [MSC8002](#) (2 units).

Recommended Enrolment Pattern - Astrophysics specialisation Part-time (8 Semesters, S1 or S2 entry)

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.

Students may, with approval of the Program Director and acceptance by an appropriate supervisor, elect to replace two or four units of research training courses ([SCI8101 Science in Practice](#), [SCI8102 Research Skills](#), [SCI8103 Research Fundamentals and Ethics](#) and/or [STA8170 Statistics for Quantitative Researchers](#)) with one or two 2-unit research project courses ([MSC8001 Research Project I](#) and [MSC8002 Research Project II](#)).

Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
Year 1, Semester 1							
PHY1101 Astronomy 1					1	1	
Approved Course [^]	1	1			1	1	
Year 1, Semester 2							
PHY1107 Astronomy 2					1	2	
Approved Course [^]	1	2			1	2	
Year 2, Semester 1							
PHY8001 Observational Astronomy [*]					2	1	
Year 2, Semester 2							
PHY8004 Stellar Astronomy [*]					2	2	
Year 3, Semester 1							
Either the following two courses for the Research Training Track							
STA8170 Statistics for Quantitative Researchers ^{<#}	3	1			3	1,2	Enrolment is not permitted in STA8170 if S TA2300 or STA1003 has been previously completed.
SCI8103 Research Fundamentals and Ethics [#]	3	1			3	1	Pre-requisite: Students must be enrolled in one of the following programs: MSCN or M SCR or MCTN or MADS or GCSC or GDSI or DPHD or its equivalent. Enrolment is not permitted in SCI8103 if SCI4405 has been previously completed.
or the following course for the Research Project Track (if approved instead of Research Training Track)							
MSC8001 Research Project I [*]	3	1			3	1	Pre-requisite: Students must be enrolled in one of the following Programs: MCTN or M COP or MCTE or MSCN or MCOO or MADS or have the approval of their program coordinator
Year 3, Semester 2							
PHY8003 Galactic Astronomy and Cosmology [*]					3	2	
Year 4, Semester 1							
PHY8002 Planetary Science [*]					4	1	

Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
Year 4, Semester 2							
Either the following two courses for the Research Training Track							
SCI8101 Science in Practice [#]					4	2	
SCI8102 Research Skills [#]					4	2	
or the following course for the Research Project Track (if approved instead of Research Training Track)							
MSC8002 Research Project II [*]	4	2			4	2	Pre-requisite: MSC8001

Footnotes

- [^] This approved course is for students to take complementary studies in physics, mathematics, statistics or computing. Choice of the approved courses should be made in consultation with, and be approved by the Program Director via usq.support@usq.edu.au.
- ^{*} Two unit course
- [<] If STA2300 has been completed previously, contact the Program Director to choose an alternative course to STA8170.
- [#] Instead of the Research Training Track, students may seek permission to do the Research Project Track and replace these courses with [MSC8001](#) (2 units) and [MSC8002](#) (2 units).

Recommended Enrolment Pattern - Environment and Sustainability specialisation Full-time (4 Semesters, S1 or S2 entry)

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.

Students may, with approval of the Program Director and acceptance by an appropriate supervisor, elect to replace two or four units of research training courses ([SCI8101 Science in Practice](#), [SCI8102 Research Skills](#), [SCI8103 Research Fundamentals and Ethics](#) and/or [STA8170 Statistics for Quantitative Researchers](#)) with one or two 2-unit research project courses ([MSC8001 Research Project I](#) and [MSC8002 Research Project II](#)).

Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
Year 1 Semester 1							
REN8101 Environment, Society and Sustainability					1	1	Enrolment is not permitted in REN8101 if REN1201 has been previously completed.
CLI8204 Global Environmental Systems					1	1	
Either the following two courses for the Research Training Track							
STA8170 Statistics for Quantitative Researchers ^{<#}	1	1			1	1,2	Enrolment is not permitted in STA8170 if STA2300 or STA1003 has been previously completed.
SCI8103 Research Fundamentals and Ethics [#]	1	1			1	1	Pre-requisite: Students must be enrolled in one of the following programs: MSCN or MSCR or MCTN or MADS or GCSC or GDSI or DPHD or its equivalent. Enrolment is not permitted in SCI8103 if SCI4405 has been previously completed.
or the following course for the Research Project Track (if approved instead of Research Training Track)							
MSC8001 Research Project I [*]	1	1			1	1	Pre-requisite: Students must be enrolled in one of the following Programs: MCTN or MCOP or MCTE or MSCN or MCCO or MADS

Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
							or have the approval of their program coordinator
Year 1 Semester 2							
REN3301 Biodiversity and Conservation	1	2			1	2	
REN3302 Sustainable Resource Use	1	2			1	2	
REN8202 Conservation for Sustainable Futures					1	2	Enrolment is not permitted in REN8202 if REN2200 has been previously completed.
ECO8012 Methods for Sustainable Development					1	2	
Year 2 Semester 1							
CLI3301 Climate and Environment Risk Assessment					2	1	
Approved Course [^]					2	1	
AGR8001 Food Security in the 21st Century	2	1			2	1	
ECO8011 Global Issues in Sustainability					2	1	
Year 2 Semester 2							
CLI8205 Climate and Sustainability					2	2	
REN8203 Sustainability Science					2	2	Pre-requisite: REN8101 or REN8202 or REN3302 or REN3301 or CLI8204 or CLI8205 or ECO8011
Either the following two courses for the Research Training Track							
SCI8102 Research Skills[#]					2	2	
SCI8101 Science in Practice[#]					2	2	
or the following course for the Research Project Track (if approved instead of Research Training Track)							
MSC8002 Research Project II[*]	2	2			2	2	Pre-requisite: MSC8001

Footnotes

- < If STA2300 has been completed previously, contact the Program Director to choose an alternative course to STA8170.
- # Instead of the Research Training Track, students may seek permission to do the Research Project Track and replace these courses with [MSC8001](#) (2 units) and [MSC8002](#) (2 units).
- * Two unit course
- ^ Students can choose one of the following approved courses: [SCI3302 Industry Placement](#), [CLI8001 Climate Risk](#), [AGR3304 Soil Science](#), [ENV3105 Hydrology](#) or other approved course approved by the Program Director.

Recommended Enrolment Pattern - Environment and Sustainability specialisation Part-time (8 Semesters, S1 or S2 entry)

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.

Students may, with approval of the Program Director and acceptance by an appropriate supervisor, elect to replace two or four units of research training courses ([SCI8101 Science in Practice](#), [SCI8102 Research Skills](#),

SCI8103 Research Fundamentals and Ethics and/or STA8170 Statistics for Quantitative Researchers) with one or two 2-unit research project courses (MSC8001 Research Project I and MSC8002 Research Project II).

Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
Year 1, Semester 1							
REN8101 Environment, Society and Sustainability					1	1	Enrolment is not permitted in REN8101 if REN1201 has been previously completed.
CLI8204 Global Environmental Systems					1	1	
Year 1, Semester 2							
REN8202 Conservation for Sustainable Futures					1	2	Enrolment is not permitted in REN8202 if REN2200 has been previously completed.
ECO8012 Methods for Sustainable Development					1	2	
Year 2, Semester 1							
Either the following two courses for the Research Training Track							
STA8170 Statistics for Quantitative Researchers ^{<#}	2	1			2	1,2	Enrolment is not permitted in STA8170 if S TA2300 or STA1003 has been previously completed.
SCI8103 Research Fundamentals and Ethics [#]	2	1			2	1	Pre-requisite: Students must be enrolled in one of the following programs: MSCN or M SCR or MCTN or MADS or GCSC or GDSI or DPHD or its equivalent. Enrolment is not permitted in SCI8103 if SCI4405 has been previously completed.
or the following course for the Research Project Track (if approved instead of Research Training Track)							
MSC8001 Research Project I [*]	2	1			2	1	Pre-requisite: Students must be enrolled in one of the following Programs: MCTN or M COP or MCTE or MSCN or MCCO or MADS or have the approval of their program coordinator
Year 2, Semester 2							
CLI8205 Climate and Sustainability					2	2	
REN3302 Sustainable Resource Use	2	2			2	2	
Year 3, Semester 1							
CLI3301 Climate and Environment Risk Assessment					3	1	
Approved Course [^]					2	1	
Year 3, Semester 2							
REN3301 Biodiversity and Conservation	3	2			3	2	
REN8203 Sustainability Science					3	2	Pre-requisite: REN8101 or REN8202 or REN3302 or REN3301 or CLI8204 or CLI8205 or ECO8011
Year 4, Semester 1							
AGR8001 Food Security in the 21st Century	4	1			4	1	
ECO8011 Global Issues in Sustainability					4	1	
Year 4, Semester 2							
Either the following two courses for the Research Training Track							
SCI8102 Research Skills [#]					4	2	

Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
SCI8101 Science in Practice [#]					4	2	
or the following course for the Research Project Track (if approved instead of Research Training Track)							
MSC8002 Research Project II [*]	4	2			4	2	Pre-requisite: MSC8001

Footnotes

- < If STA2300 has been completed previously, contact the Program Director to choose an alternative course to STA8170.
Instead of the Research Training Track, students may seek permission to do the Research Project Track and replace these courses with [MSC8001](#) (2 units) and [MSC8002](#) (2 units).
* Two unit course
^ Students can choose one of the following approved courses: [SCI3302 Industry Placement](#), [CLI8001 Climate Risk](#), [AGR3304 Soil Science](#), [ENV3105 Hydrology](#) or other approved course approved by the Program Director.

Recommended Enrolment Pattern - Mathematics and Statistics specialisation Full-time (4 Semesters, S1 entry)

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.

Students are required to submit a proposed enrolment pattern to the Program Director for approval if it differs from the one below.

Students may, with approval of the Program Director and acceptance by an appropriate supervisor, elect to replace two or four units of research training courses ([SCI8101 Science in Practice](#), [SCI8103 Research Fundamentals and Ethics](#), [CSC8411 Independent Studies in Computing/Mathematics/Statistics B](#) or [CSC8002 Big Data Management](#)) with one or two 2-unit research project courses ([MSC8001 Research Project I](#) and [MSC8002 Research Project II](#)).

Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
Year 1 Semester 1							
STA8170 Statistics for Quantitative Researchers ^{<}	1	1			1	1,2	Enrolment is not permitted in STA8170 if STA2300 or STA1003 has been previously completed.
ENM2600 Advanced Engineering Mathematics	1	1			1	1	Pre-requisite: ENM1600 or Students must be enrolled in one of the following Programs: GCEN or METC or MENS or GDNS or MEPR or MSCN
MAT3201 Operations Research 2 ⁺	1	1			1	1	Pre-requisite: MAT1200 or MAT2200 or Students must be enrolled in one of the following Programs: MSCN or GDSI
STA8005 Multivariate Analysis for High-Dimensional Data ^{\$+}	1	1			1	1	Pre-requisite or Co-requisite: STA8170 or STA2300 or STA1003
Year 1 Semester 2							
STA8190 Advanced Statistics B [^]					1	2	
CSC2410 Computational Thinking with Python	1	2			1	2	
MAT2200 Operations Research 1 ⁺	1	2			1	2	Pre-requisite: MAT1102 or ENM1600 or equivalent or approval from the examiner. Enrolment is not permitted in MAT2200 if MAT1200 has been previously completed.

Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
MAT3103 Mathematical Modelling and Dynamical Systems^{+@}	1	2			1	2	Pre-requisite: MAT2100 or MAT2500 or ENM2600
Year 2 Semester 1							
Approved Course	2	1			2	1	
Approved Course	2	1			2	1	
Either the following two courses for the Research Training Track							
SCI8101 Science in Practice[#]					2	1	
SCI8103 Research Fundamentals and Ethics[#]	2	1			2	1	Pre-requisite: Students must be enrolled in one of the following programs: MSCN or MSCR or MCTN or MADS or GCSC or GDSI or DPHD or its equivalent. Enrolment is not permitted in SCI8103 if SCI4405 has been previously completed.
or the following course for the Research Project Track (if approved instead of Research Training Track)							
MSC8001 Research Project I⁺⁺	2	1			2	1	Pre-requisite: Students must be enrolled in one of the following Programs: MCTN or M COP or MCTE or MSCN or MCCO or MADS or have the approval of their program coordinator
Year 2 Semester 2							
Approved Course	2	2			2	2	
Approved Course	2	2			2	2	
Either the following two courses for the Research Training Track							
CSC8411 Independent Studies in Computing/Mathematics/Statistics B[#]	2	2			2	2	Pre-requisite: Students must be enrolled in one of the following Programs: MSCN or MCTN
CSC8002 Big Data Management[#]	2	2			2	2,3	Pre-requisite or Co-requisite: (CSC1401 or CSC5020) and (STA2300 or STA1003 or STA8170) or equivalent program and statistical knowledge and skills
or the following course for the Research Project Track (if approved instead of Research Training Track)							
MSC8002 Research Project II⁺⁺	2	2			2	2	Pre-requisite: MSC8001
Approved Courses: choose four of the following (at least one has to be at level 8)							
STA2301 Distribution Theory^{\$}	2	1			2	1	Pre-requisite: (STA2300 or STA1003 or equivalent) and (MAT1102 or ENM1600)
STA3300 Experimental Design^{\$}	2	1			2	1	Pre-requisite: STA2300 or STA1003 or equivalent or approval of examiner
STA8180 Advanced Statistics A[^]					2	1	
MAT2409 High Performance Numerical Computing	2	1			2	1	Pre-requisite: (CSC2410 or CSC1401) and (MAT1102 or ENM1600) or Students must be enrolled in one of the following Programs: MPIT or MCOT or MCTE
MAT3105 Harmony of Partial Differential Equations^{+@}	2	1			2	1	Pre-requisite: ENM2600 or MAT2100 or MAT2500
MAT8180 Mathematics/Statistics Complementary Studies A[^]	2	1			2	1	

Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)		
	Year	Sem	Year	Sem	Year	Sem	
STA2302 Statistical Inference					2	2	Pre-requisite: STA2301
STA3301 Statistical Models ^{\$}	2	2			2	2	Pre-requisite: STA3300 or approval of examiner or Students must have completed STA8170 and be enrolled in one of the following Programs: GCSC or GDSI or MSCN or MADS or MSCR or DPHD.
MAT8190 Mathematics/Statistics Complementary Studies B [^]	2	2			2	2	
MAT3104 Mathematical Modelling in Financial Economics ⁺	2	2			2	2	Pre-requisite: (STA2300 or STA1003 or equivalent) and (MAT2100 or MAT2500 or ENM2600)

Footnotes

- < If STA2300 has been completed previously, contact the Program Director to choose an alternative course to STA8170.
- + Recommended courses for students wanting to teach mathematics.
- * The on-campus offering of this course is offered in odd years only.
- \$ Unavailable in on-campus mode in 2022
- ^ This is a topics based course. Students should select a topic from the course specification and email the examiner prior to enrolment to receive enrolment approval.
- @ The on-campus offering of this course is offered in even years only.
- # Instead of the Research Training Track, students may seek permission to do the Research Project Track and replace these courses with [MSC8001](#) (2 units) and [MSC8002](#) (2 units).
- ++ Two unit course

Recommended Enrolment Pattern - Sport and Exercise specialisation Full-time (4 Semesters) S1 or S2 entry

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.

Students may, with approval of the Program Director and acceptance by an appropriate supervisor, elect to replace two or four units of research training courses ([SCI8101 Science in Practice](#), [SCI8102 Research Skills](#), [SCI8103 Research Fundamentals and Ethics](#) and/or [STA8170 Statistics for Quantitative Researchers](#)) with one or two 2-unit research project courses ([MSC8001 Research Project I](#) and [MSC8002 Research Project II](#)).

Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
Year 1, Semester 1								
SES8005 Advanced Exercise Physiology [^]	1	1	1	1			M	
SES8003 Advanced Motor Control and Learning [^]	1	1	1	1			M	
SES8006 Advanced Exercise Programming and Rehabilitation [^]	1	1	1	1			M	
SES8008 Advanced Anatomy and Physiology [^]	1	1	1	1			M	
Year 1, Semester 2								
SES8007 Advanced Exercise Assessment and Delivery [^]	1	2	1	2			M	
PSY3250 Sport and Exercise Psychology					1	2		Pre-requisite: PSY1010 or Students must be enrolled in one of the following programs: GDSI or MSCN
SES8001 Advanced Biomechanics [^]	1	2	1	2			M	
SES3206 Strength Training and Conditioning [^]	1	2	1	2			M	Pre-requisite: SES2103 and SES2104 or Students must

Course	Year of program and semester in which course is normally studied						Residential school	Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (ONL)			
	Year	Sem	Year	Sem	Year	Sem		
								be enrolled in the following Program: MSCN
Year 2, Semester 1								
One elective course from the approved course list above or as approved by the Program Director								
SES1101 Growth, Development and Lifespan	2	1			2	1		
Either the following two courses for the Research Training Track								
STA8170 Statistics for Quantitative Researchers ^{<#}	2	1			2	1,2		Enrolment is not permitted in STA8170 if STA2300 or STA1003 has been previously completed.
SCI8103 Research Fundamentals and Ethics [#]	2	1			2	1		Pre-requisite: Students must be enrolled in one of the following programs: MSCN or MSCR or MCTN or MADS or GCSC or GDSI or DPHD or its equivalent. Enrolment is not permitted in SCI8103 if SCI4405 has been previously completed.
or the following course for the Research Project Track (if approved instead of Research Training Track)								
MSC8001 Research Project I [*]	2	1			2	1		Pre-requisite: Students must be enrolled in one of the following Programs: MCTN or MCOP or MCTE or MSCN or MCCO or MADS or have the approval of their program coordinator
Year 2, Semester 2								
SES2203 Physical Activity and Health	2	2			2	2		
SES1103 Nutrition and Exercise	2	2	2	2			M	
Either the following two courses for the Research Training Track								
SCI8102 Research Skills [#]					2	2		
SCI8101 Science in Practice [#]					2	2		
or the following course for the Research Project Track (if approved instead of Research Training Track)								
MSC8002 Research Project II [*]	2	2			2	2		Pre-requisite: MSC8001

Footnotes

- ^ The on-campus offering of this course is only available at the Ipswich campus.
- < If STA2300 has been completed previously, contact the Program Director to choose an alternative course to STA8170.
- # Instead of the Research Training Track, students may seek permission to do the Research Project Track and replace these courses with [MSC8001](#) (2 units) and [MSC8002](#) (2 units).
- * Two unit course