



MACQUARIE
University

Macquarie School of Education

Faculty of Arts

2022

Secondary Teacher Education

Undergraduate Student Guide

Bachelor of Science and Bachelor of Education (Secondary)

Students commencing in 2022 are advised to retain the 2022 Student Guide and to refer to it in each subsequent year of study

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Important Links

Macquarie University Handbook

NSW Education Standards Authority (NESA)

Australian Institute for Teaching and Learning Leadership (AITSL)

EDSTCOMM Department of Educational Studies Undergraduate Communications

Macquarie School of Education

Our people

Professional Experience

Welcome from the Director

Welcome to the Macquarie University Teacher Education Program. The program includes discipline studies in Education, units covering subject content requirements for secondary teaching, curriculum studies, and a professional experience component. The sequence of units that you will study has been carefully designed to provide you with an excellent preparation for the secondary classroom. From time to time, there are also a variety of other activities on offer that will allow you to broaden your experience in teacher education.

A particular feature of the Macquarie program is the focus on integrating theory and practice throughout your academic studies and the concurrent School Experience Program. These activities will afford you an excellent opportunity to develop a reflective stance on your classroom practice so that it is fully informed by the latest developments in educational theory and research-based evidence.

As you progress through your studies, I encourage you to view yourself not simply as a university student, but as a Teacher Education Student who is preparing to join this challenging and rewarding profession. So, take every opportunity to fully engage in your academic work and make the most of all the opportunities presented to you during your school placements.

I wish you everything of the best as you embark on this exciting professional and personal journey!

Dr Sue Ollerhead

Director, Secondary Teacher Education Program

HOW TO USE THIS GUIDE

The information contained in this guide is for students entering the Bachelor of Science and Bachelor of Education (Secondary) in 2022.

Read this *Guide* in conjunction with the current [University Handbook](#) to be fully aware of the relevant Bachelor Degree Rules and about your course and units

In the following sections, patterns are provided to show the units which students **must complete** to satisfy the Bachelor degree and Bachelor of Education requirements. There are also units that students must take in order to satisfy prerequisites or corequisites for required units. This information can also be found in the [University Handbook](#).

It is important to refer to information in both the [University Handbook](#) and this Student Guide when planning their studies.

Information in this guide is accurate at the time of publication (date?).

Academic Advice

While care is always taken in the provision of academic advice, it is ultimately the student's responsibility to see that their program satisfies both the Bachelor Degree Rules **and** the NESA requirements.

Students are expected to have consulted this Student Guide and the [University Handbook](#) before seeking advice.

Full information regarding academic and course advisers is available on:

<https://students.mq.edu.au/support/study/academic-advisers>

Students in the Macquarie School of Education shall submit their requests via <ask.mq.edu.au>.

IMPORTANT NOTE: Students are advised to familiarise themselves with the [NESA requirements](#) for future teachers. It is the student's ultimate responsibility to understand and meet these requirements.

Credit Overload

If you wish to enrol in more than the standard number of credit points ([credit overload](#)) for a study period, you need academic approval. You must submit a [Credit Overload form](#) which will be forwarded to the Macquarie School of Education for consideration.

Please note that approval is not automatic and will depend upon your academic progress and reasons for the excess load.

SECTION 1

Teacher Education at Macquarie

1.1 The 5Rs Framework – attributes and capabilities for success

Teaching is a complex pursuit with competing demands, increasingly diverse student groups, high accountability, as well as new requirements and evidence being adopted regularly. Therefore, success in the teaching profession requires important attributes and capabilities.

At Macquarie University we aim to graduate teachers who not only have relevant discipline knowledge and teaching know-how, but who also understand and strive for those capabilities that will make teaching a sustaining career for years to come. Embedded in all our teaching courses is the Macquarie's **5R's framework** which helps develop our Teacher Education Students to be:

1. **R**esilient
2. **R**eflexive in their teaching practice
3. **R**esponsive to children, colleagues, parents, professionals and communities
4. **R**eady to learn, and
5. **R**esearch engaged

We believe that our 5Rs framework, when consciously adopted and continuously developed, leads to high quality outcomes for both teachers and students.

We make a conscious effort to equip you, our Teacher Education Students, with the tools you need to thrive so you can inspire our great minds of tomorrow.

1.2 NESA requirements: Academic standards

1.2.1 EDST2999 - Literacy and Numeracy tests for Teacher Education (LANTITE)

In order to be accredited as a teacher in Australian schools, Teacher Education Students are required to undertake a [Literacy and Numeracy Test for Initial Teacher Education](#) (the test). The LANTITE is designed to assess initial teacher education students' personal literacy and numeracy skills to ensure teachers are well equipped to meet the demands of teaching.

The unit code for LANTITE at Macquarie is EDST2999. To satisfy requirements of this zero credit point unit of study, students must meet the required standard in both the literacy and numeracy components of the LANTITE. The test is externally administrated by the Australian Council for Educational Research.

In New South Wales, Teacher Education Students (TES) must meet the standards of the test prior to commencing their final professional experience placement.

At Macquarie we require our TES to have sat both LANTITE tests and have their results indicate they successfully met the standard in both literacy and numeracy before being eligible to enrol in *EDST3010 Practice of Teaching: Classroom Management and Assessment in the Secondary School*. It is strongly recommended that students complete **both tests no later than the end of the second year** of your course to ensure you meet these requirements. We recommend undertaking these tests early in your candidature, preferably by the end of the first year of your studies.

TES who do not meet the standard for literacy or numeracy on the first attempt will have two further opportunities to sit the test/s. Further information is available at <https://teacheredtest.acer.edu.au/results/re-sit>

All information regarding LANTITE is available on [EDSTCOMM](#), our general communication platform for Teacher Education Students.

Information about the test and how to register is available on the Australian Council for Educational Research ([ACER](#)) [website](#).

1.2.2 The Teaching Performance Assessment (TPA)

To be accredited as a teacher in Australian schools, TES are required to undertake and meet the minimum standard for a Teaching Performance Assessment (TPA). The TPA is completed in the final professional experience unit **EDST4020 Practice of Teaching: Culturally and Linguistically Diverse Secondary Classrooms**.

In completing the TPA, TES must provide evidence of their proficiency in lesson planning, classroom teaching, assessment of student learning, and critical reflection on their classroom practice. All information regarding this assessment is available on [EDSTCOMM](#).

1.3 Workload and Planning

A 10 credit point unit requires a *minimum* study time commitment of 9 hours per week across all unit activities and requirements. This is typically a mix of face to face and independent work.

To complete your course in the minimum time you must complete 40 credit points per session if following a standard Session 1/Session 2 pattern of study.

1.4 Undergraduate Programs of Study

The Bachelor of Science and Bachelor of Education (Secondary) is a desirable double degree offered at Macquarie leading to accreditation as a secondary school teacher:

TES must complete 16 units in the core zone of the Bachelor of Science and 16 units in the core zone of the Bachelor of Education (Secondary) which includes units in educational theory, pedagogy, methodology and professional practice.

These programs may be completed in four years of full-time study. The option for part-time study is available.

1.4.1 Subject content requirements

In order to be accredited as a secondary school teacher in NSW, graduates must satisfy the [NESA subject content requirements](#). These minimum requirements may vary based on the teaching subject. These requirements also may differ from the requirements of the Macquarie program of study (i.e. have specific requirements which may include units outside the major or minor). Thus, students are reminded it is ultimately their responsibility to be familiar with both their degree requirements and the requirements of NESA.

SECTION 2

Bachelor of Science and Bachelor of Education (Secondary)

All TES must meet their LANTITE requirement by the end of the second year of full-time study. See section 1.2.1 *Literacy and Numeracy tests for Teacher Education Students (LANTITE)*

2.1 First Teaching Subject

Secondary Teacher Education Students (TES) must select a first teaching subject. TES shall enrol in a major that aligns to the subject you wish to teach and satisfy [NESA subject content requirements](#). *Some subject areas have specific requirements which may include units outside the major (see section 1.4.1).*

The table below outlines teaching subject areas and appropriate majors available in the Bachelor of Science and Bachelor of Education (Secondary).

First Teaching Subject	Major
Biology	<ul style="list-style-type: none"> ▪ Biology ▪ Human Biology
Chemistry	<ul style="list-style-type: none"> ▪ Chemistry
Earth and Environmental Sciences (EES)	<ul style="list-style-type: none"> ▪ Earth and Environmental Sciences <p>Note: To meet NESA requirements to teach EES, you must include at least one unit in Biology or Human Biology in your studies</p>
Mathematics	<ul style="list-style-type: none"> ▪ Mathematics <p>Note: The prerequisite for MATH1010 is (HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or MATH130 or MATH1000 or WFMA003 or WFMA0003 or WMAT123 or WMAT1000.</p> <p>Students who do not meet the prerequisite for MATH1010 should contact the Arts team via ask.mq.edu.au to arrange for space to be added to their study plan to allow them to take MATH1000 prior to starting the major.</p>
Physics	<ul style="list-style-type: none"> ▪ Astronomy and Astrophysics ▪ Physics <p>Note: TES who major in Physics or Astronomy and Astrophysics must select Mathematics as a minor to meet the pre- and co-requisites for enrolment in Essential Physics units:</p> <ul style="list-style-type: none"> – PHYS1020 <i>Electric and Magnetic Interactions</i> – PHYS2010 <i>Classical and Quantum Oscillations and Waves</i> – PHYS2020 <i>Electromagnetism and Relativity</i> – PHYS2030 <i>The Structure of Matter</i> <p>Note: Students who do not meet the HSC prerequisites for PHYS1010 (HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or MATH1000 or MATH130 or WFMA003 or WFMA0003] or MATH1010 [(HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or MATH130 or MATH1000 or WFMA003 or WFMA0003 or WMAT123 or WMAT1000] may seek to enrol in MATH1000 <i>Introduction to Mathematical Modelling</i>. This unit is an elementary unit</p>

First Teaching Subject	Major
	<p>designed for Engineering, Mathematics and Physics students whose mathematics background has not met the recommended standard for students entering these programs.</p> <p>As there is no elective space in this double degree, students will need to contact ask.mq.edu.au for assistance in making room in their program for MATH1000 and for academic advice on an alternate pattern of study. Due to the offering patterns in the degree, students requiring this prerequisite unit be unable to complete this degree in four years.</p>

2.2 Additional Science Subject

To improve employability, Secondary TES are encouraged to select an additional science subject. You will enrol in a minor that aligns to the subject you wish to teach and satisfies [NESA subject content requirements \(see section 1.4.1\)](#). The minor shall consist of four units, with no more than two units at first year level. Note: Students who major in Mathematics do not require a second teaching subject but may minor in Statistical Modelling to enhance their mathematical knowledge.

The table below outlines the appropriate major and minor study combinations available in the Bachelor of Science and Bachelor of Education (Secondary).

Academic Major	Academic Minor	Meets NESA requirements to teach
Biology OR Human Biology	Chemistry	Biology and Chemistry Both first teaching subjects
Biology OR Human Biology	Earth and Environmental Science	Biology and Earth and Environmental Science Both first teaching subjects
Biology	Mathematics	Biology first teaching subject Mathematics second teaching subject
Human Biology	Mathematics	Biology first teaching subject Mathematics second teaching subject
Chemistry	Biology	Biology and Chemistry Both first teaching subjects
Chemistry	Human Biology	Biology and Chemistry Both first teaching subjects
Chemistry	Mathematics	Chemistry first teaching subject Mathematics second teaching subject
Earth and Environmental Science	Biology	Earth and Environmental Science and Biology Both first teaching subjects
Mathematics	Biology	Mathematics and Biology Both first teaching subjects
Mathematics	Human Biology	Mathematics and Biology Both first teaching subjects
Mathematics	Chemistry	Mathematics and Chemistry Both first teaching subject
Mathematics	Physics	Mathematics/Physics Both first teaching subjects
Mathematics	Statistical Modelling	Mathematics first teaching subject
Physics OR Astronomy and Astrophysics	Mathematics	Mathematics/Physics Both first teaching subjects

2.3 Bachelor of Science and Bachelor of Education (Secondary) – Content requirements and suggested patterns of study

This section sets out suggested patterns of study for the academic major and minor combinations that will meet NESA requirements for accreditation to teach. These patterns will help show you how a program can be completed in four years full-time.

These suggested patterns have been prepared based on the available 2022 Timetable. The University timetable may change, and some units may not be offered every year or may be discontinued. Please check current requirements in the online [University Handbook](#) before enrolling **each year**.

ACADEMIC MAJORS AND MINORS IN THE BScBEd(Sec)	
MAJORS	MINORS
<ul style="list-style-type: none">▪ Astronomy and Astrophysics▪ Biology▪ Chemistry▪ Earth and Environmental Sciences▪ Human Biology▪ Mathematics▪ Physics	<ul style="list-style-type: none">▪ Biology▪ Chemistry▪ Earth and Environmental Sciences▪ Human Biology▪ Mathematics▪ Physics▪ Statistical Modelling

EDTE4330 and EDTE4340 Science in the Secondary School I and II are the required methodology units for accreditation to teach Science in NSW Secondary Schools.

EDTE4290 and EDTE4300 Mathematics in the Secondary School I and II are the required methodology units for accreditation to teach Mathematics as a first or second teaching subject in NSW Secondary Schools.

2.4 Major in Biology

2.4.1 Suggested Pattern of Study – Major in Biology with a minor in Chemistry

This pattern of study will meet [NESA subject content requirements](#) to teach Biology and Chemistry as first teaching subjects.

Please check current requirements in the online [University Handbook](#) before enrolling.

Year 1 Session 1		cp	Year 1 Session 2		cp
EDST1000	Exploring Australian Education: Social and Historical Contexts	10	EDST1010	Learning and Development: An Introduction for Educators	10
BIOL1310	Organisms to Ecosystems	10	BIOL1110	Genes to Organisms	10
CHEM1001	Foundations of Chemical and Biomolecular Sciences 1	10	CHEM1002	Foundations of Chemical and Biomolecular Sciences 2	10
To meet prerequisites for BIOL2110 and BIOL2410 you must include at least one of the following units in your studies:		10	FOSE/STAT 1000 Level Option Set		10
FOSE1015	Statistical Concepts for Science				
STAT1170	Introductory Statistics				
Year 2 Session 1			Year 2 Session 2		
EDST2999 <i>LANTITE</i> Ensure that you have met the standard for both literacy and numeracy by the end of your second year of study. See paragraph 1.2.1 for full information regarding LANTITE and its requirements					0
EDST2000	The Practice of Teaching: Inclusive Education (10 days)	10	EDST3170	Indigenous Education	10
EDUC 2620	Education: The Learner	10	BIOL2410	Ecology	10
BIOL2110	Genetics	10	BIOL2210	Life Processes	10
CHEM2401	Physical Chemistry 1	10	CHEM2201 Analysis and Measurement		10
CHEM2601	Synthesis				
Year 3 Session 1			Year 3 Session 2		
EDST3140	Introduction to the Secondary Curriculum	10	EDST3010	Practice of Teaching: Classroom Management and Assessment in the Secondary School (10 days)	10
BIOL3510	Vertebrate Biology and Behaviour	10	EDTE4330	Science in the Secondary School I	10
BIOL3640 - PACE Experience in Biological Sciences		10	BIOL3310	Invertebrate Biology and Behaviour	10
FOSE3000	Making Science Work for You and Society (CAPSTONE)	10	BIOL3410	Plant Biology	10
Year 4 Session 1			Year 4 Session 2		
EDST4010	Practice of Teaching: ICT in the Secondary School (30 days)	10	EDST4020	Practice of Teaching: Culturally and Linguistically Diverse Secondary Classrooms (30 days)	10
EDTE4340	Science in the Secondary School II	10	EDST4180	Transitioning to the Secondary Teaching Profession	10
EDST4120	Adolescent Development and Classroom Practice	10	EDST4200	Using and interpreting Educational Data	10
EDUC unit at 3000 level		10	EDUC unit at 3000 level		10

2.4.2 Suggested Pattern of Study – Major in Biology with a minor in Earth and Environmental Sciences

This pattern of study will meet [NESA subject content requirements](#) to teach Biology and Earth and Environmental Sciences as first teaching subjects

Please check current requirements in the online [University Handbook](#) before enrolling.

Year 1 Session 1		cp	Year 1 Session 2		cp	
EDST1000	Exploring Australian Education: Social and Historical Contexts	10	EDST1010	Learning and Development: An Introduction for Educators	10	
BIOL1310	Organisms to Ecosystems	10	BIOL1110	Genes to Organisms	10	
ENVS1017	The Living Environment	10	EESC1150	Planet Earth	10	
To meet prerequisites for BIOL2110 and BIOL2410 you must include at least one of the following units in your studies:		10	FOSE/STAT 1000 Level Option Set		10	
FOSE1015	Statistical Concepts for Science					
STAT1170	Introductory Statistics					
Year 2 Session 1			Year 2 Session 2			
EDST2999 LANTITE		Ensure that you have met the standard for both literacy and numeracy by the end of your second year of study. See paragraph 1.2.1 for full information regarding LANTITE and its requirements				0
EDST2000	The Practice of Teaching: Inclusive Education (10 days)	10	EDST3170	Indigenous Education	10	
EDUC 2620	Education: The Learner	10	BIOL2410	Ecology	10	
BIOL2110	Genetics	10	BIOL2210	Life Processes	10	
ENVS2266	Earth Surface Processes	10	EESC2150	Mass extinctions and the hidden history of Earth	10	
	OR			OR		
ENVS2364	Introduction to Geographic Information Science and Remote Sensing			ENVS3241		Active Environments (S3) **
Year 3 Session 1			Year 3 Session 2			
EDST3140	Introduction to the Secondary Curriculum	10	EDST3010	Practice of Teaching: Classroom Management and Assessment in the Secondary School (10 days)	10	
BIOL3510	Vertebrate Biology and Behaviour	10	EDTE4330	Science in the Secondary School I	10	
BIOL3640	PACE Experience in Biological Sciences	10	BIOL3310	Invertebrate Biology and Behaviour	10	
FOSE3000	Making Science Work for You and Society (CAPSTONE)	10	BIOL3410	Plant Biology	10	
Year 4 Session 1			Year 4 Session 2			
EDST4010	Practice of Teaching: ICT in the Secondary School (30 days)	10	EDST4020	Practice of Teaching: Culturally and Linguistically Diverse Secondary Classrooms (30 days)	10	
EDTE4340	Science in the Secondary School II	10	EDST4180	Transitioning to the Secondary Teaching Profession	10	
EDST4120	Adolescent Development and Classroom Practice	10	EDST4200	Using and interpreting Educational Data	10	
EDUC unit at 3000 level		10	EDUC unit at 3000 level		10	

** As the prerequisite for **ENVS3241 - Active Environments** is **130cp at 1000 level or above and permission by special approval**, this unit may be available to you in Y2 S3. Please contact the Department of Earth and Environmental Science for advice through ask.mq.edu.au. This unit may also be completed in Y3 S3 or Y4 S3.

2.4.3 Suggested Pattern of Study – Major in Biology with a minor in Mathematics

This pattern of study will meet [NESA subject content requirements](#) to teach Biology and a first teaching subject and Mathematics as a second teaching subject.

Note: The prerequisite for MATH1010 is (HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or MATH130 or MATH1000 or WFMA003 or WFMA0003 or WMAT123 or WMAT1000.

Students who do not meet the prerequisite for MATH1010 should contact the Arts team via ask.mq.edu.au to arrange for space to be added to their study plan to allow them to take MATH1000 prior to starting the major.

Please check current requirements in the online [University Handbook](#) before enrolling.

Year 1 Session 1		cp	Year 1 Session 2		cp
EDST1000	Exploring Australian Education: Social and Historical Contexts	10	EDST1010	Learning and Development: An Introduction for Educators	10
BIOL1310	Organisms to Ecosystems	10	BIOL1110	Genes to Organisms	10
MATH1010	Calculus and Linear Algebra I OR	10	MATH1020	Calculus and Linear Algebra II OR	10
MATH1015	Calculus and Linear Algebra I (Advanced)		MATH1025	Calculus and Linear Algebra II (Advanced)	
To meet prerequisites for BIOL2410 you must include at least one of the following units in your studies:		10	FOSE/STAT1000 Level Option Set		10
FOSE1015	Statistical Concepts for Science OR				
STAT1170	Introductory Statistics				
Year 2 Session 1			Year 2 Session 2		
EDST2999 <i>LANTITE</i>			Ensure that you have met the standard for both literacy and numeracy by the end of your second year of study. See paragraph 1.2.1 for full information regarding LANTITE and its requirements		0
EDST2000	The Practice of Teaching: Inclusive Education (10 days)	10	EDST3170	Indigenous Education	10
EDUC 2620	Education: The Learner	10	BIOL2410	Ecology	10
BIOL2110	Genetics	10	BIOL2210	Life Processes	10
MATH2010	Calculus and Linear Algebra III	10	MATH2020	Vector Calculus and Complex Analysis OR	10
			MATH2110	Mathematical Modelling and Differential Equations	
Year 3 Session 1			Year 3 Session 2 * FIVE UNITS		
EDST3140	Introduction to the Secondary Curriculum	10	EDST3010	Practice of Teaching: Classroom Management and Assessment in the Secondary School (10 days)	10
BIOL3510	Vertebrate Biology and Behaviour	10	EDTE4330	Science in the Secondary School I	10
BIOL3640	PACE Experience in Biological Sciences	10	EDTE4290	Mathematics in the Secondary School I	10
FOSE3000	Making Science Work for You and Society (CAPSTONE)	10	BIOL3310	Invertebrate Biology and Behaviour	10
			BIOL3410	Plant Biology	10
Year 4 Session 1			Year 4 Session 2		
EDST4010	Practice of Teaching: ICT in the Secondary School (30 days)	10	EDST4020	Practice of Teaching: Culturally and Linguistically Diverse Secondary Classrooms (30 days)	10
EDTE4340	Science in the Secondary School II	10	EDST4180	Transitioning to the Secondary Teaching Profession	10
EDTE4300	Mathematics in the Secondary School II	10	EDST4200	Using and Interpreting Educational Data	10
EDST4120	Adolescent Development and Classroom Practice	10			

* Students who wish to complete this degree in four years may follow this pattern of study. Application for a [credit overload](#) will be necessary in Year 3, Session 2.

Seek advice early in your program if you would prefer an alternate pattern.

2.5 Major in Human Biology

2.5.1 Suggested Pattern of Study – Major in Human Biology with a minor in Chemistry

This pattern of study will meet [NESA subject content requirements](#) to teach Biology and Chemistry as first teaching subjects.

Note: The prerequisite for MATH1010 is (HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or MATH130 or MATH1000 or WFMA003 or WFMA0003 or WMAT123 or WMAT1000.

Students who do not meet the prerequisite for MATH1010 should contact the Arts team via ask.mq.edu.au to arrange for space to be added to their study plan to allow them to take MATH1000 prior to starting the major.

Please check current requirements in the online [University Handbook](#) before enrolling.

Year 1 Session 1		cp	Year 1 Session 2		cp	
EDST1000	Exploring Australian Education: Social and Historical Contexts	10	EDST1010	Learning and Development: An Introduction for Educators	10	
BIOL1210	Human Biology	10	BIOL1110	Genes to Organisms	10	
CHEM1001	Foundations of Chemical and Biomolecular Sciences 1	10	CHEM1002	Foundations of Chemical and Biomolecular Sciences 2	10	
To meet prerequisites for BIOL2110 you must include at least one of the following units in your studies: FOSE1015 Statistical Concepts for Science OR STAT1170 Introductory Statistics		10	FOSE/STAT 1000 Level Option Set		10	
Year 2 Session 1			Year 2 Session 2			
EDST2999 LANTITE		Ensure that you have met the standard for both literacy and numeracy by the end of your second year of study. See paragraph 1.2.1 for full information regarding LANTITE and its requirements				0
EDST2000	The Practice of Teaching: Inclusive Education (10 days)	10	EDUC 2620	Education: The Learner	10	
BIOL2110	Genetics	10	EDST3170	Indigenous Education	10	
BIOL2230	Neurophysiology	10	BIOL2220	Systems Physiology	10	
CHEM2401 OR CHEM260	Physical Chemistry 1 OR Synthesis	10	CHEM2201	Analysis and Measurement	10	
Year 3 Session 1			Year 3 Session 2			
EDST3140	Introduction to the Secondary Curriculum	10	EDST3010	Practice of Teaching: Classroom Management and Assessment in the Secondary School (10 days)	10	
BIOL3120	Human Genetics and Evolutionary Medicine	10	EDTE4330	Science in the Secondary School I	10	
BIOL3210	Advanced Human Physiology	10	ANTH3022	Gender, Sexuality and Global Health	10	
BIOL3640	PACE Experience in Biological Sciences	10	FOSE3000	Making Science Work for You and Society	10	
Year 4 Session 1			Year 4 Session 2			
EDST4010	Practice of Teaching: ICT in the Secondary School (30 days)	10	EDST4020	Practice of Teaching: Culturally and Linguistically Diverse Secondary Classrooms (30 days)	10	
EDTE4340	Science in the Secondary School II	10	EDST4180	Transitioning to the Secondary Teaching Profession	10	
EDST4120	Adolescent Development and Classroom Practice	10	EDST4200	Using and Interpreting Educational Data	10	
EDUC unit at 3000 level		10	EDUC unit at 3000 level			10

2.5.2 Suggested Pattern of Study – Major in Human Biology with a minor in Earth and Environmental Sciences

This pattern of study will meet [NESA subject content requirements](#) to teach Biology and Earth and Environmental Science as first teaching subjects.

Please check current requirements in the online [University Handbook](#) before enrolling.

Year 1 Session 1		cp	Year 1 Session 2		cp
EDST1000	Exploring Australian Education: Social and Historical Contexts	10	EDST1010	Learning and Development: An Introduction for Educators	10
BIOL1210	Human Biology	10	BIOL1110	Genes to Organisms	10
ENVS1017	The Living Environment	10	EESC1150	Planet Earth	10
To meet prerequisites for BIOL2110 you must include at least one of the following units in your studies: FOSE1015 Statistical Concepts for Science OR STAT1170 Introductory Statistics		10	FOSE/STAT 1000 Level Option Set		10
Year 2 Session 1			Year 2 Session 2		
EDST2999 <i>LANTITE</i> Ensure that you have met the standard for both literacy and numeracy by the end of your second year of study. See paragraph 1.2.1 for full information regarding LANTITE and its requirements					0
EDST2000	The Practice of Teaching: Inclusive Education (10 days)	10	EDST3170	Indigenous Education	10
EDUC 2620 Education: The Learner		10	BIOL2220	Systems Physiology	10
BIOL2110 Genetics		10	EESC2150	Mass extinctions and the hidden history of Earth	10
BIOL2230 Neurophysiology		10			ENVS3241 Active Environments
Year 3 Session 1			Year 3 Session 2		
EDST3140	Introduction to the Secondary Curriculum	10	EDST3010	Practice of Teaching: Classroom Management and Assessment in the Secondary School (10 days)	10
BIOL3120 Human Genetics and Evolutionary Medicine		10	EDTE4330	Science in the Secondary School I	10
BIOL3210 Advanced Human Physiology		10	ANTH3022	Gender, Sexuality and Global Health	10
BIOL3640 PACE Experience in Biological Sciences		10	FOSE3000	Making Science Work for You and Society (CAPSTONE)	10
Year 4 Session 1			Year 4 Session 2		
EDST4010	Practice of Teaching: ICT in the Secondary School (30 days)	10	EDST4020	Practice of Teaching: Culturally and Linguistically Diverse Secondary Classrooms (30 days)	10
EDTE4340 Science in the Secondary School II		10	EDST4180	Transitioning to the Secondary Teaching Profession	10
EDST4120 Adolescent Development and Classroom Practice		10	EDST4200	Using and Interpreting Educational Data	10
EDUC unit at 3000 level		10	EDUC unit at 3000 level		10

2.5.3 Suggested Pattern of Study – Major in Human Biology with minor in Mathematics

This pattern of study will meet [NESA subject content requirements](#) to teach Biology as a first teaching subject and Mathematics as a second teaching subject

Note: The prerequisite for MATH1010 is (HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or MATH130 or MATH1000 or WFMA003 or WFMA0003 or WMAT123 or WMAT1000.

Students who do not meet the prerequisite for MATH1010 should contact the Arts team via ask.mq.edu.au to arrange for space to be added to their study plan to allow them to take MATH1000 prior to starting the major.

Please check current requirements in the online [University Handbook](#) before enrolling.

Year 1 Session 1		cp	Year 1 Session 2		cp
EDST1000	Exploring Australian Education: Social and Historical Contexts	10	EDST1010	Learning and Development: An Introduction for Educators	10
BIOL1210	Human Biology	10	BIOL1110	Genes to Organisms	10
MATH1010	Calculus and Linear Algebra I	10	MATH1020	Calculus and Linear Algebra II	10
OR			OR		
MATH1015	Calculus and Linear Algebra I (Advanced)		MATH1025	Calculus and Linear Algebra II (Advanced)	
To meet prerequisites for BIOL2110 you must include at least one of the following units in your studies:		10	FOSE/STAT 1000 Level Option Set		10
FOSE1015	Statistical Concepts for Science				
OR					
STAT1170	Introductory Statistics				
Year 2 Session 1			Year 2 Session 2		
EDST2999 <i>LANTITE</i>			Ensure that you have met the standard for both literacy and numeracy by the end of your second year of study. See paragraph 1.2.1 for full information regarding LANTITE and its requirements		0
EDST2000	The Practice of Teaching: Inclusive Education (10 days)	10	EDUC 2620	Education: The Learner	10
BIOL2110	Genetics	10	BIOL2220	Systems Physiology	10
BIOL2230	Neurophysiology	10	MATH2020	Vector Calculus and Complex Analysis	10
			OR		
			MATH2110	Mathematical Modelling and Differential Equations	
MATH2010	Calculus and Linear Algebra III	10	EDST3170	Indigenous Education	10
Year 3 Session 1			3 Session 2 * FIVE UNITS		
EDST3140	Introduction to the Secondary Curriculum	10	EDST3010	Practice of Teaching: Classroom Management and Assessment in the Secondary School (10 days)	10
BIOL3120	Human Genetics and Evolutionary Medicine	10	EDTE4330	Science in the Secondary School I	10
BIOL3210	Advanced Human Physiology	10	EDTE4290	Mathematics in the Secondary School I	10
BIOL3640	PACE Experience in Biological Sciences	10	ANTH3022	Gender, Sexuality and Global Health	10
			FOSE3000	Making Science Work for You and Society (CAPSTONE)	10
Year 4 Session 1			Year 4 Session 2		
EDST4010	Practice of Teaching: ICT in the Secondary School (30 days)	10	EDST4020	Practice of Teaching: Culturally and Linguistically Diverse Secondary Classrooms (30 days)	10
EDTE4340	Science in the Secondary School II	10	EDST4180	Transitioning to the Secondary Teaching Profession	10
EDTE4300	Mathematics in the Secondary School II	10	EDST4200	Using and Interpreting Educational Data	10
EDST4120	Adolescent Development and Classroom Practice	10			

* Students who wish to complete this degree in four years may follow this pattern of study. Application for a [credit overload](#) will be necessary in Year 3, Session 2.

Seek advice early in your program if you would prefer an alternate pattern.

2.5 Major in Chemistry

2.6.1 Suggested Pattern of Study – Major in Chemistry with a minor in Biology

This pattern of study will meet [NESA subject content requirements](#) to teach Chemistry and Biology as first teaching subjects.

Please check current requirements in the online [University Handbook](#) before enrolling.

Year 1 Session 1		cp	Year 1 Session 2		cp	
EDST1000	Exploring Australian Education: Social and Historical Contexts	10	EDST1010	Learning and Development: An Introduction for Educators	10	
CHEM1001	Foundations of Chemical and Biomolecular Sciences 1	10	CHEM1002	Foundations of Chemical and Biomolecular Sciences 2	10	
BIOL1310	Organisms to Ecosystems	10	BIOL1110	Genes to Organisms	10	
To meet prerequisites for BIOL2110 and BIOL2410 you must include at least one of the following units in your studies: FOSE1015 Statistical Concepts for Science OR STAT1170 Introductory Statistics		10	FOSE/STAT 1000 Level Option Set		10	
Year 2 Session 1			Year 2 Session 2			
EDST2999 LANTITE		Ensure that you have met the standard for both literacy and numeracy by the end of your second year of study. See paragraph 1.2.1 for full information regarding LANTITE and its requirements				0
EDST2000	The Practice of Teaching: Inclusive Education (10 days)	10	EDUC2620	Education: The Learner	10	
CHEM2401	Physical Chemistry 1	10	EDST3170	Indigenous Education	10	
CHEM2601	Synthesis	10	CHEM2201	Analysis and Measurement	10	
BIOL2110	Genetics	10	BIOL2210 OR BIOL2410	Life Processes OR Ecology	10	
Year 3 Session 1			Year 3 Session 2			
EDST3140	Introduction to the Secondary Curriculum	10	EDST3010	Practice of Teaching: Classroom Management and Assessment in the Secondary School (10 days)		
CHEM3202	Advanced Analysis and Measurement	10	EDTE4330	Science in the Secondary School I		
CHEM3801	Medicinal Chemistry	10	CHEM3601	Advanced Synthesis		
FOSE3000	Making Science Work for You and Society (CAPSTONE)		MOLS3003 - Molecular Sciences Project (PACE)			
Year 4 Session 1			Year 4 Session 2			
EDST4010	Practice of Teaching: ICT in the Secondary School (30 days)	10	EDST4020	Practice of Teaching: Culturally and Linguistically Diverse Secondary Classrooms (30 days)	10	
EDTE4340	Science in the Secondary School II	10	EDST4180	Transitioning to the Secondary Teaching Profession	10	
EDST4120	Adolescent Development and Classroom Practice	10	EDST4200	Using and Interpreting Educational Data	10	
EDUC unit at 3000 level		10	EDUC unit at 3000 level			10

2.6.2 Suggested Pattern of Study – Major in Chemistry with a minor in Human Biology

This pattern of study will meet [NESA subject content requirements](#) to teach Chemistry and Biology as first teaching subjects.

Note: Although ANTH3022 Gender, Sexuality and Global Health is offered in the Human Biology minor, it does not contribute to the NESA requirements for teaching in NSW schools. You must only select units with a BIOL prefix to meet requirements to teach.

Please check current requirements in the online [University Handbook](#) before enrolling.

Year 1 Session 1		cp	Year 1 Session 2		cp
EDST1000	Exploring Australian Education: Social and Historical Contexts	10	EDST1010	Learning and Development: An Introduction for Educators	10
CHEM1001	Foundations of Chemical and Biomolecular Sciences 1	10	CHEM1002	Foundations of Chemical and Biomolecular Sciences 2	10
BIOL2230	Neurophysiology	10	BIOL2220	Systems Physiology	10
To meet prerequisites for BIOL2110 you must include at least one of the following units in your studies: FOSE1015 Statistical Concepts for Science OR STAT1170 Introductory Statistics		10	FOSE/STAT1000 Level Option Set		10
Year 2 Session 1			Year 2 Session 2		
EDST2999 <i>LANTITE</i> Ensure that you have met the standard for both literacy and numeracy by the end of your second year of study. See paragraph 1.2.1 for full information regarding LANTITE and its requirements					0
EDST2000	The Practice of Teaching: Inclusive Education (10 days)	10	EDUC2620	Education: The Learner	10
CHEM2401	Physical Chemistry 1		EDST3170	Indigenous Education	
CHEM2601	Synthesis	10	CHEM2201	Analysis and Measurement	10
BIOL2110 OR BIOL2230	Genetics Neurophysiology	10	BIOL2220	Systems Physiology	10
Year 3 Session 1			Year 3 Session 2		
EDST3140	Introduction to the Secondary Curriculum	10	EDST3010	Practice of Teaching: Classroom Management and Assessment in the Secondary School (10 days)	10
CHEM3202	Advanced Analysis and Measurement	10	EDTE4330	Science in the Secondary School I	10
CHEM3801	Medicinal Chemistry	10	CHEM3601	Advanced Synthesis	10
FOSE3000	Making Science Work for You and Society (CAPSTONE)	10	MOLS3003 - Molecular Sciences Project (PACE)		10
Year 4 Session 1			Year 4 Session 2		
EDST4010	Practice of Teaching: ICT in the Secondary School (30 days)	10	EDST4020	Practice of Teaching: Culturally and Linguistically Diverse Secondary Classrooms (30 days)	10
EDTE4340	Science in the Secondary School II	10	EDST4180	Transitioning to the Secondary Teaching Profession	10
EDST4120	Adolescent Development and Classroom Practice	10	EDST4200	Using and Interpreting Educational Data	10
EDUC unit at 3000 level		10	EDUC unit at 3000 level		10

2.6.3 Suggested Pattern of Study – Major in Chemistry with a minor in Mathematics

This pattern of study will meet [NESA subject content requirements](#) to teach Chemistry as a first teaching subject and Mathematics as a second teaching subject

Note: The prerequisite for MATH1010 is (HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or MATH130 or MATH1000 or WFMA003 or WFMA0003 or WMAT123 or WMAT1000.

Students who do not meet the prerequisite for MATH1010 should contact the Arts team via ask.mq.edu.au to arrange for space to be added to their study plan to allow them to take MATH1000 prior to starting the major.

Please check current requirements in the online [University Handbook](#) before enrolling.

Year 1 Session 1		cp	Year 1 Session 2		cp
EDST1000	Exploring Australian Education: Social and Historical Contexts	10	EDST1010	Learning and Development: An Introduction for Educators	10
CHEM1001	Foundations of Chemical and Biomolecular Sciences 1	10	CHEM1002	Foundations of Chemical and Biomolecular Sciences 2	10
MATH1010 OR MATH1015	Calculus and Linear Algebra I (Advanced)	10	MATH1020 OR MATH1025	Calculus and Linear Algebra II (Advanced)	10
FOSE/STAT	1000 Level Option Set	10	FOSE/STAT1000	Level Option Set	10
Year 2 Session 1			Year 2 Session 2		
EDST2999 LANTITE			Ensure that you have met the standard for both literacy and numeracy by the end of your second year of study. See paragraph 1.2.1 for full information regarding LANTITE and its requirements		0
EDST2000	The Practice of Teaching: Inclusive Education (10 days)		EDUC 2620	Education: The Learner	
CHEM2401	Physical Chemistry 1	10	EDST3170	Indigenous Education	10
CHEM2601	Synthesis	10	CHEM2201	Analysis and Measurement	10
MATH2010	Calculus and Linear Algebra III	10	MATH2020 OR MATH2110	Vector Calculus and Complex Analysis Mathematical Modelling and Differential Equations	10
Year 3 Session 1			Year 3 Session 2 * FIVE UNITS		
EDST3140	Introduction to the Secondary Curriculum	10	EDST3010	Practice of Teaching: Classroom Management and Assessment in the Secondary School (10 days)	10
CHEM3202	Advanced Analysis and Measurement	10	EDTE4330	Science in the Secondary School I	10
CHEM3801	Medicinal Chemistry	10	EDTE4290	Mathematics in the Secondary School I	10
FOSE3000	Making Science Work for You and Society (CAPSTONE)	10	CHEM3601	Advanced Synthesis	10
			MOLS3003	Molecular Sciences Project (PACE)	10
Year 4 Session 1			Year 4 Session 2		
EDST4010	Practice of Teaching: ICT in the Secondary School (30 days)	10	EDST4020	Practice of Teaching: Culturally and Linguistically Diverse Secondary Classrooms (30 days)	10
EDTE4340	Science in the Secondary School II	10	EDST4180	Transitioning to the Secondary Teaching Profession	10
EDTE4300	Mathematics in the Secondary School II	10	EDST4200	Using and Interpreting Educational Data	10
EDST4120	Adolescent Development and Classroom Practice	10			

* Students who wish to complete this degree in four years may follow this pattern of study. Application for a [credit overload](#) will be necessary in Year 3, Session 2.

Seek advice early in your program if you would prefer an alternate pattern.

2.7 Major in Earth and Environmental Sciences (EES)

2.7.1 Suggested Pattern of Study – major in EES minor in Biology

This pattern of study will meet [NESA subject content requirements](#) to teach EES and Biology as first teaching subjects.

Please check current requirements in the online [University Handbook](#) before enrolling.

Year 1 Session 1		cp	Year 1 Session 2		cp		
EDST1000	Exploring Australian Education: Social and Historical Contexts	10	EDST1010	Learning and Development: An Introduction for Educators	10		
ENVS1017	The Living Environment	10	EESC1150	Planet Earth	10		
BIOL1310	Organisms to Ecosystems	10	BIOL1110	Genes to Organisms	10		
To meet prerequisites for BIOL2110 and BIOL2410 you must include at least one of the following units in your studies: FOSE1015 Statistical Concepts for Science OR STAT1170 Introductory Statistics		10	FOSE/STAT 1000 Level Option Set		10		
Year 2 Session 1			Year 2 Session 2			Year 2 Session 3	cp
EDST2999 <i>LANTITE</i> Ensure that you have met the standard for both literacy and numeracy by the end of your second year of study. See paragraph 1.2.1 for full information regarding LANTITE and its requirements					0		
EDST2000	The Practice of Teaching: Inclusive Education (10 days)	10	EDUC 2620	Education: The Learner	10		
ENVS2266	Earth Surface Processes	10	EESC2150	Mass extinctions and the hidden history of Earth	10		
ENVS2364	Introduction to Geographic Information Science and Remote Sensing	10	BIOL2410 OR BIOL2210	Ecology OR Life Processes	10		
BIOL2110	Genetics	10				ENVS3241 Active Environments	10
Year 3 Session 1			Year 3 Session 2				
EDST3140	Introduction to the Secondary Curriculum	10	EDST3010	Practice of Teaching: Classroom Management and Assessment in the Secondary School (10 days)			
EDUC unit at 3000 level		10	EDTE4330	Science in the Secondary School I	10		
ENVS3240	Environmental Change	10	ENVS3238	Environmental Quality and Assessment	10		
EESC3000	PACE in Earth and Environmental Sciences	10	FOSE3000	Making Science Work for You and Society (CAPSTONE)	10		
Year 4 Session 1			Year 4 Session 2				
EDST4010	Practice of Teaching: ICT in the Secondary School (30 days)	10	EDST3170	Indigenous Education	10		
EDTE4340	Science in the Secondary School II	10	EDST4180	Transitioning to the Secondary Teaching Profession	10		
EDUC unit at 3000 level		10	EDST4200	Using and Interpreting Educational Data	10		
EDST4120	Adolescent Development and Classroom Practice	10	EDST4020	Practice of Teaching: Culturally and Linguistically Diverse Secondary Classrooms (30 days)	10		

2.8 Major in Mathematics

2.8.1 Prerequisites for first year units – Major in Mathematics; Minor in Statistical Modelling; Minor in Physics

Students who do not meet the HSC prerequisites for **MATH1010** may seek to enrol in **MATH1000 Introduction to Mathematical Modelling**. This unit is an elementary unit designed for Engineering, Mathematics and Physics students whose mathematics background has not met the recommended standard for students entering these programs.

As there is no elective space in this double degree, students will need to contact ask.mq.edu.au for assistance in making room in their program for **MATH1000** and for academic advice on an alternate pattern of study. Due to the offering patterns in the degree, students requiring this prerequisite unit be unable to complete this degree in four years.

Unit	Prerequisite
PHYS1010 Modern Mechanics	(HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or MATH1000 or MATH130 or WFMA003 or WFMA0003
MATH1010 Calculus and Linear Algebra	(HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or MATH130 or MATH1000 or WFMA003 or WFMA0003 or WMAT123 or WMAT1000
MATH1015 Calculus and Linear Algebra I (Advanced)	(HSC Mathematics Extension 1 Band E3 and above or HSC Mathematics Extension 2) or admission to BMathSci or BAdvSc in Advanced Mathematics or BActStud or BActStudBSc or BAppFinBActStud or BActStudBProfPrac or BActStudProfPrac(Hons)
STAT1371 Statistical Data Analysis	(HSC Mathematics Extension 1 or Extension 2) or (10cp from MATH1000 or MATH1010-MATH1025 or MATH130-MATH136) or admission to BActStud or BActStudBSc or BAppFinBActStud or BActStudBProfPrac or BActStudProfPrac(Hons) or BMathSc

2.8.2 Suggested Pattern of Study – Major in Mathematics with a minor in Statistical Modelling

This pattern of study will meet [NESA subject content requirements](#) to teach Mathematics as a first teaching subject.

Note: The prerequisite for MATH1010 is (HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or MATH130 or MATH1000 or WFMA003 or WFMA0003 or WMAT123 or WMAT1000.

Students who do not meet the prerequisite for MATH1010 should contact the Arts team via ask.mq.edu.au to arrange for space to be added to their study plan to allow them to take MATH1000 prior to starting the major.

Students who do not meet the prerequisites for STAT1371 (HSC Mathematics Extension 1 or Extension 2) or (10cp from MATH1000 or MATH1010-MATH1025 or MATH130-MATH136) or admission to BActStud or BActStudBSc or BAppFinBActStud or BActStudBProfPrac or BActStudProfPrac(Hons) or BMathSc

Please check current requirements in the online [University Handbook](#) before enrolling.

Year 1 Session 1		cp	Year 1 Session 2		cp
EDST1000	Exploring Australian Education: Social and Historical Contexts	10	EDST1010	Learning and Development: An Introduction for Educators	10
MATH1010	Calculus and Linear Algebra I	10	MATH1020	Calculus and Linear Algebra II	10
MATH1015	Calculus and Linear Algebra I (Advanced)		MATH1025	Calculus and Linear Algebra II (Advanced)	
STAT1371	Statistical Data Analysis	10	STAT1170 OR STAT1378	Introductory Statistics Coding and Communications in Statistics	10
FOSE/STAT 1000 Level Option Set		10	FOSE/STAT 1000 Level Option Set II		10
Year 2 Session 1			Year 2 Session 2		
EDST2999	LANTITE Ensure that you have met the standard for both literacy and numeracy by the end of your second year of study. See paragraph 1.2.1 for full information regarding LANTITE and its requirements				0
EDST2000	The Practice of Teaching: Inclusive Education (10 days)	10	EDST3170	Indigenous Education	10
EDUC 2620	Education: The Learner	10	MATH2020	Vector Calculus and Complex Analysis	10
MATH2010	Calculus and Linear Algebra III	10	MATH2110	Mathematical Modelling and Differential Equations	10
STAT2170 OR STAT2173	Applied Statistics Introduction to Probability	10	STAT2114 OR STAT2372	Design of Surveys and Experiments Probability	10
Year 3 Session 1			Year 3 Session 2		
EDST3140	Introduction to the Secondary Curriculum	10	EDST3010	Practice of Teaching: Classroom Management and Assessment in the Secondary School (10 days)	10
MATH 3000 Level Option Set		10	EDTE4290	Mathematics in the Secondary School I	10
MATH 3000 Level Option Set		10	MATH 3000 Level Option Set		10
FOSE3000	Making Science Work for You and Society (CAPSTONE)	10	MATH3599	Professional Practice for Mathematical Sciences (PACE)	10
Year 4 Session 1			Year 4 Session 2		
EDST4010	Practice of Teaching: ICT in the Secondary School (30 days)	10	EDST4020	Practice of Teaching: Culturally and Linguistically Diverse Secondary Classrooms (30 days)	10
EDTE4300	Mathematics in the Secondary School II	10	EDST4180	Transitioning to the Secondary Teaching Profession	10
EDST4120	Adolescent Development and Classroom Practice	10	EDST4200	Using and interpreting Educational Data	10
EDUC unit at 3000 level		10	EDUC unit at 3000 level		10

2.8.2 Suggested Pattern of Study – Major in Mathematics with a minor in Physics

This pattern of study will meet [NESA subject content requirements](#) to teach Mathematics and Physics as a first teaching subject.

Note: The prerequisite for MATH1010 is (HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or MATH130 or MATH1000 or WFMA003 or WFMA0003 or WMAT123 or WMAT1000.

Students who do not meet the prerequisite for MATH1010 should contact the Arts team via ask.mq.edu.au to arrange for space to be added to their study plan to allow them to take MATH1000 prior to starting the major.

Please check current requirements in the online [University Handbook](#) before enrolling.

Year 1 Session 1		cp	Year 1 Session 2		cp	
EDST1000	Exploring Australian Education: Social and Historical Contexts	10	EDST1010	Learning and Development: An Introduction for Educators	10	
MATH1010	Calculus and Linear Algebra I	10	MATH1020	Calculus and Linear Algebra II	10	
MATH1015	OR Calculus and Linear Algebra I (Advanced)		MATH1025	OR Calculus and Linear Algebra II (Advanced)		
PHYS1010	Modern Mechanics	10	PHYS1020	Electric and Magnetic Interactions	10	
FOSE/STAT 1000 Level Option Set		10	FOSE/STAT 1000 Level Option Set II		10	
Year 2 Session 1			Year 2 Session 2			
EDST2999 LANTITE		Ensure that you have met the standard for both literacy and numeracy by the end of your second year of study. See paragraph 1.2.1 for full information regarding LANTITE and its requirements				0
EDST2000	The Practice of Teaching: Inclusive Education (10 days)	10	EDST3170	Indigenous Education	10	
EDUC 2620	Education: The Learner	10	MATH2020	Vector Calculus and Complex Analysis	10	
MATH2010	Calculus and Linear Algebra III	10	MATH2110	Mathematical Modelling and Differential Equations	10	
PHYS2010	Classical and Quantum Oscillations and Waves	10	PHYS2030	The Structure of Matter	10	
Year 3 Session 1			Year 3 Session 2			
EDST3140	Introduction to the Secondary Curriculum	10	EDST3010	Practice of Teaching: Classroom Management and Assessment in the Secondary School (10 days)	10	
MATH 3000 Level Option Set		10	EDTE4290	Mathematics in the Secondary School I	10	
MATH 3000 Level Option Set		10	MATH 3000 Level Option Set		10	
FOSE3000	Making Science Work for You and Society (CAPSTONE)	10	MATH3599	Professional Practice for Mathematical Sciences (PACE)	10	
Year 4 Session 1			Year 4 Session 2			
EDST4010	Practice of Teaching: ICT in the Secondary School (30 days)	10	EDST4020	Practice of Teaching: Culturally and Linguistically Diverse Secondary Classrooms (30 days)	10	
EDTE4300	Mathematics in the Secondary School II	10	EDST4180	Transitioning to the Secondary Teaching Profession	10	
EDST4120	Adolescent Development and Classroom Practice	10	EDST4200	Using and Interpreting Educational Data	10	
EDUC unit at 3000 level		10	EDUC unit at 3000 level		10	

2.8.3 Suggested Pattern of Study – Major in Mathematics with a minor in Biology

This pattern of study will meet [NESA subject content requirements](#) to teach Mathematics and Biology as first teaching subjects.

Note: The prerequisite for MATH1010 is (HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or MATH130 or MATH1000 or WFMA003 or WFMA0003 or WMAT123 or WMAT1000.

Students who do not meet the prerequisite for MATH1010 should contact the Arts team via ask.mq.edu.au to arrange for space to be added to their study plan to allow them to take MATH1000 prior to starting the major.

Please check current requirements in the online [University Handbook](#) before enrolling.

Year 1 Session 1		cp	Year 1 Session 2		cp
EDST1000	Exploring Australian Education: Social and Historical Contexts	10	EDST1010	Learning and Development: An Introduction for Educators	10
MATH1010	Calculus and Linear Algebra I OR	10	MATH1020	Calculus and Linear Algebra II OR	10
MATH1015	Calculus and Linear Algebra I (Advanced)		MATH1025	Calculus and Linear Algebra II (Advanced)	
BIOL1310	Organisms to Ecosystems	10	BIOL1110	Genes to Organisms	10
To meet prerequisites for BIOL2110 and BIOL2410 you must include at least one of the following units in your studies: FOSE1015 Statistical Concepts for Science OR STAT1170 Introductory Statistics		10	FOSE/STAT 1000 Level Option Set II		10
Year 2 Session 1			Year 2 Session 2		
EDST2999 <i>LANTITE</i> Ensure that you have met the standard for both literacy and numeracy by the end of your second year of study. See paragraph 1.2.1 for full information regarding LANTITE and its requirements					0
EDST2000	The Practice of Teaching: Inclusive Education (10 days)	10	EDST3170	Indigenous Education	10
EDUC 2620	Education: The Learner	10	MATH2020	Vector Calculus and Complex Analysis	10
MATH2010	Calculus and Linear Algebra III	10	MATH2110	Mathematical Modelling and Differential Equations	10
BIOL2110	Genetics	10	BIOL2410 Ecology OR BIOL2210 Life Processes		10
Year 3 Session 1			Year 3 Session 2 * FIVE UNITS		
EDST3140	Introduction to the Secondary Curriculum	10	EDST3010	Practice of Teaching: Classroom Management and Assessment in the Secondary School (10 days)	10
MATH 3000 Level Option Set		10	EDTE4290	Mathematics in the Secondary School I	10
MATH 3000 Level Option Set		10	EDTE4330	Science in the Secondary School I	10
FOSE3000	Making Science work for you and Society (CAPSTONE)	10	MATH 3000 Level Option Set		10
			MATH3599	Professional Practice for Mathematical Sciences (PACE)	10
Year 4 Session 1			Year 4 Session 2		
EDST4010	Practice of Teaching: ICT in the Secondary School (30 days)	10	EDST4020	Practice of Teaching: Culturally and Linguistically Diverse Secondary Classrooms (30 days)	10
EDTE4300	Mathematics in the Secondary School II	10	EDST4180	Transitioning to the Secondary Teaching Profession	10
EDTE4340	Science in the Secondary School II	10	EDST4200	Using and Interpreting Educational Data	10
EDST4120	Adolescent Development and Classroom Practice	10			

* Students who wish to complete this degree in four years may follow this pattern of study. Application for a [credit overload](#) will be necessary in Year 3, Session 2.

Seek advice early in your program if you would prefer an alternate pattern.

2.8.4 Suggested Pattern of Study – Major in Mathematics with a minor in Human Biology

This pattern of study will meet [NESA subject content requirements](#) to teach Mathematics and Biology as first teaching subjects.

Note: The prerequisite for MATH1010 is (HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or MATH130 or MATH1000 or WFMA003 or WFMA0003 or WMAT123 or WMAT1000.

Students who do not meet the prerequisite for MATH1010 should contact the Arts team via ask.mq.edu.au to arrange for space to be added to their study plan to allow them to take MATH1000 prior to starting the major.

Note: Although ANTH3022 Gender, Sexuality and Global Health is offered in the Human Biology minor, it does not contribute to the NESA requirements for teaching Biology in NSW schools. You must only select units with a BIOL prefix to meet requirements to teach.

Please check current requirements in the online [University Handbook](#) before enrolling.

Year 1 Session 1		cp	Year 1 Session 2		cp
EDST1000	Exploring Australian Education: Social and Historical Contexts	10	EDST1010	Learning and Development: An Introduction for Educators	10
MATH1010	Calculus and Linear Algebra I OR	10	MATH1020	Calculus and Linear Algebra II OR	10
MATH1015	Calculus and Linear Algebra I (Advanced)		MATH1025	Calculus and Linear Algebra II (Advanced)	
BIOL1210	Human Biology	10	BIOL1110	Genes to Organisms	10
To meet prerequisites for BIOL2110 and BIOL2410 you must include at least one of the following units in your studies: FOSE1015 Statistical Concepts for Science OR STAT1170 Introductory Statistics		10	FOSE/STAT 1000 Level Option Set II		10
Year 2 Session 1			Year 2 Session 2		
EDST2999 <i>LANTITE</i> Ensure that you have met the standard for both literacy and numeracy by the end of your second year of study. See paragraph 1.2.1 for full information regarding LANTITE and its requirements					0
EDST2000	The Practice of Teaching: Inclusive Education (10 days)	10	EDST3170	Indigenous Education	10
EDUC 2620	Education: The Learner	10	MATH2020	Vector Calculus and Complex Analysis	10
MATH2010	Calculus and Linear Algebra III	10	MATH2110	Mathematical Modelling and Differential Equations	10
BIOL2110	Genetics OR	10	BIOL2220	Systems Physiology	10
BIOL2230	Neurophysiology				
Year 3 Session 1			Year 3 Session 2 * FIVE UNITS		
EDST3140	Introduction to the Secondary Curriculum	10	EDST3010	Practice of Teaching: Classroom Management and Assessment in the Secondary School (10 days)	
MATH 3000 Level Option Set		10	EDTE4290	Mathematics in the Secondary School I	
MATH 3000 Level Option Set		10	EDTE4330	Science in the Secondary School I	10
FOSE3000	Making Science work for you and Society (CAPSTONE)	10	MATH 3000 Level Option Set		10
			MATH3599	Professional Practice for Mathematical Sciences (PACE)	10
Year 4 Session 1			Year 4 Session 2		
EDST4010	Practice of Teaching: ICT in the Secondary School (30 days)	10	EDST4020	Practice of Teaching: Culturally and Linguistically Diverse Secondary Classrooms (30 days)	10
EDTE4300	Mathematics in the Secondary School II	10	EDST4180	Transitioning to the Secondary Teaching Profession	10
EDTE4340	Science in the Secondary School II	10	EDST4200	Using and Interpreting Educational Data	10
EDST4120	Adolescent Development and Classroom Practice	10			

- * Students who wish to complete this degree in four years may follow this pattern of study. Application for a [credit overload](#) will be necessary in Year 3, Session 2.
Seek advice early in your program if you would prefer an alternate pattern.

2.8.5 Suggested Pattern of Study – Major in Mathematics with a minor in Chemistry

This pattern of study will meet [NESA subject content requirements](#) to teach Mathematics and Chemistry as first teaching subjects.

Note: The prerequisite for MATH1010 is (HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or MATH130 or MATH1000 or WFMA003 or WFMA0003 or WMAT123 or WMAT1000.

Students who do not meet the prerequisite for MATH1010 should contact the Arts team via ask.mq.edu.au to arrange for space to be added to their study plan to allow them to take MATH1000 prior to starting the major.

Please check current requirements in the online [University Handbook](#) before enrolling.

Year 1 Session 1		cp	Year 1 Session 2		cp	
EDST1000	Exploring Australian Education: Social and Historical Contexts	10	EDST1010	Learning and Development: An Introduction for Educators	10	
MATH1010	Calculus and Linear Algebra I	10	MATH1020	Calculus and Linear Algebra II	10	
MATH1015	OR Calculus and Linear Algebra I (Advanced)		MATH1025	Calculus and Linear Algebra II (Advanced)		
CHEM1001	Foundations of Chemical and Biomolecular Sciences 1	10	CHEM1002	Foundations of Chemical and Biomolecular Sciences 2	10	
FOSE/STAT 1000 Level Option Set		10	FOSE/STAT 1000 Level Option Set II		10	
Year 2 Session 1			Year 2 Session 2			
EDST2999 <i>LANTITE</i>		Ensure that you have met the standard for both literacy and numeracy by the end of your second year of study. See paragraph 1.2.1 for full information regarding LANTITE and its requirements				0
EDST2000	The Practice of Teaching: Inclusive Education (10 days)	10	EDST3170	Indigenous Education	10	
EDUC 2620	Education: The Learner	10	MATH2020	Vector Calculus and Complex Analysis	10	
MATH2010	Calculus and Linear Algebra III	10	MATH2110	Mathematical Modelling and Differential Equations	10	
CHEM2401	Physical Chemistry 1	10	CHEM2201	Analysis and Measurement	10	
CHEM2601	OR Synthesis					
Year 3 Session 1			Year 3 Session 2 * FIVE UNITS			
EDST3140	Introduction to the Secondary Curriculum		EDST3010	Practice of Teaching: Classroom Management and Assessment in the Secondary School (10 days)		
MATH 3000 Level Option Set		10	EDTE4290	Mathematics in the Secondary School I	10	
MATH 3000 Level Option Set		10	EDTE4330	Science in the Secondary School I	10	
FOSE3000	Making Science work for you and Society (CAPSTONE)	10	MATH 3000 Level Option Set		10	
			MATH3599	Professional Practice for Mathematical Sciences (PACE)	10	
Year 4 Session 1			Year 4 Session 2			
EDST4010	Practice of Teaching: ICT in the Secondary School (30 days)	10	EDST4020	Practice of Teaching: Culturally and Linguistically Diverse Secondary Classrooms (30 days)	10	
EDTE4300	Mathematics in the Secondary School II	10	EDST4180	Transitioning to the Secondary Teaching Profession	10	
EDTE4340	Science in the Secondary School II	10	EDST4200	Using and Interpreting Educational Data	10	
EDST4120	Adolescent Development and Classroom Practice	10				

- * Students who wish to complete this degree in four years may follow this pattern of study. Application for a [credit overload](#) will be necessary in Year 3, Session 2.

Seek advice early in your program if you would prefer an alternate pattern.

2.9 Major in Physics

2.9.1 Prerequisites for first year Physics and Mathematics units

Students who do not meet the HSC prerequisites for **PHYS1010** and **MATH1010** may seek to enrol in **MATH1000 Introduction to Mathematical Modelling**. This unit is an elementary unit designed for Engineering, Mathematics and Physics students whose mathematics background has not met the recommended standard for students entering these programs.

As there is no elective space in this double degree, students will need to contact ask.mq.edu.au for assistance in making room in their program for **MATH1000** and for academic advice on an alternate pattern of study. Due to the offering patterns in the degree, students requiring this prerequisite unit be unable to complete this degree in four years.

Unit	Prerequisite
PHYS1010 Modern Mechanics	(HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or MATH1000 or MATH130 or WFMA003 or WFMA0003
MATH1010 Calculus and Linear Algebra	(HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or MATH130 or MATH1000 or WFMA003 or WFMA0003 or WMAT123 or WMAT1000
MATH1015 Calculus and Linear Algebra I (Advanced)	(HSC Mathematics Extension 1 Band E3 and above or HSC Mathematics Extension 2) or admission to BMathSci or BAdvSc in Advanced Mathematics or BActStud or BActStudBSc or BAppFinBActStud or BActStudBProfPrac or BActStudProfPrac(Hons)

2.9.2 Suggested Pattern of Study – Major in Physics with a minor in Mathematics

This pattern of study will meet [NESA subject content requirements](#) to teach Mathematics/Physics as a first teaching subject.

Note: The prerequisite for MATH1010 is (HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or MATH130 or MATH1000 or WFMA003 or WFMA0003 or WMAT123 or WMAT1000.

Students who do not meet the prerequisite for MATH1010 should contact the Arts team via ask.mq.edu.au to arrange for space to be added to their study plan to allow them to take MATH1000 prior to starting the major.

Please check current requirements in the online [University Handbook](#) before enrolling.

Year 1 Session 1		cp	Year 1 Session 2		cp
EDST1000	Exploring Australian Education: Social and Historical Contexts	10	EDST1010	Learning and Development: An Introduction for Educators	10
PHYS1010	Modern Mechanics	10	PHYS1020	Electric and Magnetic Interactions	10
MATH1010	Calculus and Linear Algebra I	10	MATH1020	Calculus and Linear Algebra II	10
MATH1015	Calculus and Linear Algebra I (Advanced)		MATH1025	Calculus and Linear Algebra II (Advanced)	
FOSE/STAT 1000 Level Option Set		10	FOSE/STAT 1000 Level Option Set		10
Year 2 Session 1			Year 2 Session 2		
EDST2999 <i>LANTITE</i> Ensure that you have met the standard for both literacy and numeracy by the end of your second year of study. See paragraph 1.2.1 for full information regarding LANTITE and its requirements					0
EDST2000	The Practice of Teaching: Inclusive Education (10 days)	10	EDST3170	Indigenous Education	10
EDUC 2620	Education: The Learner	10	PHYS2020	Electromagnetism and Relativity	10
PHYS2010	Classical and Quantum Oscillations and Waves	10	PHYS2030	The Structure of Matter	10
MATH2010	Calculus and Linear Algebra III	10	MATH2020	Vector Calculus and Complex Analysis	10
			MATH2110	Mathematical Modelling and Differential Equations	
Year 3 Session 1			Year 3 Session 2 * FIVE UNITS		
EDST3140	Introduction to the Secondary Curriculum	10	EDST3010	Practice of Teaching: Classroom Management and Assessment in the Secondary School (10 days)	10
PHYS3010	Advanced Electromagnetism and Optics	10	EDTE4330	Science in the Secondary School I	10
FOSE3000	Making Science work for you and Society (CAPSTONE)	10	EDTE4290	Mathematics in the Secondary School I	10
PHYS3180	Condensed Matter and Statistical Physics	10	PHYS3140	Advanced Quantum Mechanics and Quantum Optics	10
			PHYS3810	PACE: Professional Experience in Physics and Astronomy (PACE)	
Year 4 Session 1			Year 4 Session 2		
EDST4010	Practice of Teaching: ICT in the Secondary School (30 days)	10	EDST4020	Practice of Teaching: Culturally and Linguistically Diverse Secondary Classrooms (30 days)	10
EDTE4300	Mathematics in the Secondary School II	10	EDST4180	Transitioning to the Secondary Teaching Profession	10
EDTE4340	Science in the Secondary School II	10	EDST4200	Using and Interpreting Educational Data	10
EDST4120	Adolescent Development and Classroom Practice	10			

- * Students who wish to complete this degree in four years may follow this pattern of study. Application for a [credit overload](#) will be necessary in Year 3, Session 2.

Seek advice early in your program if you would prefer an alternate pattern.

2.10 Major in Astronomy and Astrophysics

2.9.1 Prerequisites for first year Physics and Mathematics units

Students who do not meet the HSC prerequisites for **PHYS1010** and **MATH1010** may seek to enrol in **MATH1000 Introduction to Mathematical Modelling**. This unit is an elementary unit designed for Engineering, Mathematics and Physics students whose mathematics background has not met the recommended standard for students entering these programs.

As there is no elective space in this double degree, students will need to contact ask.mq.edu.au for assistance in making room in their program for **MATH1000** and for academic advice on an alternate pattern of study. Due to the offering patterns in the degree, students requiring this prerequisite unit be unable to complete this degree in four years.

Unit	Prerequisite
PHYS1010 Modern Mechanics	(HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or MATH1000 or MATH130 or WFMA003 or WFMA0003
MATH1010 Calculus and Linear Algebra	(HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or MATH130 or MATH1000 or WFMA003 or WFMA0003 or WMAT123 or WMAT1000
MATH1015 Calculus and Linear Algebra I (Advanced)	(HSC Mathematics Extension 1 Band E3 and above or HSC Mathematics Extension 2) or admission to BMathSci or BAdvSc in Advanced Mathematics or BActStud or BActStudBSc or BAppFinBActStud or BActStudBProfPrac or BActStudProfPrac(Hons)

2.10.2 Suggested Pattern of Study – Major in Astronomy and Astrophysics with a minor in Mathematics

This pattern of study will meet [NESA subject content requirements](#) to teach Mathematics/Physics as a first teaching subject.

Note: The prerequisite for MATH1010 is (HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or MATH130 or MATH1000 or WFMA003 or WFMA0003 or WMAT123 or WMAT1000.

Students who do not meet the prerequisite for MATH1010 should contact the Arts team via ask.mq.edu.au to arrange for space to be added to their study plan to allow them to take MATH1000 prior to starting the major.

Please check current requirements in the online [University Handbook](#) before enrolling.

Year 1 Session 1		cp	Year 1 Session 2		cp	
EDST1000	Exploring Australian Education: Social and Historical Contexts	10	EDST1010	Learning and Development: An Introduction for Educators	10	
PHYS1010	Modern Mechanics	10	PHYS1020	Electric and Magnetic Interactions	10	
MATH1010	Calculus and Linear Algebra I OR	10	MATH1020	Calculus and Linear Algebra II OR	10	
MATH1015	Calculus and Linear Algebra I (Advanced)		MATH1025	Calculus and Linear Algebra II (Advanced)		
FOSE/STAT 1000 Level Option Set		10	FOSE/STAT 1000 Level Option Set II		10	
Year 2 Session 1			Year 2 Session 2			
EDST2999 LANTITE		Ensure that you have met the standard for both literacy and numeracy by the end of your second year of study. See paragraph 1.2.1 for full information regarding LANTITE and its requirements				0
EDST2000	The Practice of Teaching: Inclusive Education (10 days)		PHYS2020	Electromagnetism and Relativity		
EDUC 2620	Education: The Learner	10	ASTR2020	Observational Astronomy	10	
PHYS2010	Classical and Quantum Oscillations and Waves	10	MATH2020	Vector Calculus and Complex Analysis OR	10	
			MATH2110	Mathematical Modelling and Differential Equations		
MATH2010	Calculus and Linear Algebra III	10	EDST3170	Indigenous Education	10	
Year 3 Session 1 * FIVE UNITS			Year 3 Session 2			
EDST3140	Introduction to the Secondary Curriculum		EDST3010	Practice of Teaching: Classroom Management and Assessment in the Secondary School (10 days)		
ASTR3010	Astrophysics of Radiation and Stars		EDTE4330	Science in the Secondary School 1		
ASTR3110	Data Science Techniques in Astrophysics		EDTE4290	Mathematics in the Secondary School I		
FOSE3000	Making Science work for you and Society (CAPSTONE)	10	ASTR3020	Extragalactic Astronomy and Cosmology	10	
PHYS3180	Condensed Matter and Statistical Physics (PACE)	10				
Year 4 Session 1			Year 4 Session 2			
EDST4010	Practice of Teaching: ICT in the Secondary School (30 days)	10	EDST4020	Practice of Teaching: Culturally and Linguistically Diverse Secondary Classrooms (30 days)	10	
EDTE4300	Mathematics in the Secondary School II	10	EDST4180	Transitioning to the Secondary Teaching Profession	10	
EDTE4340	Science in the Secondary School II	10	EDST4200	Using and Interpreting Educational Data	10	
EDST4120	Adolescent Development and Classroom Practice	10				

* Students who wish to complete this degree in four years may follow this pattern of study. Application for a [credit overload](#) will be necessary in Year 3, Session 1.

Seek advice early in your program if you would prefer an alternate pattern.

Section 3

Professional Experience Units

In the undergraduate degree programs, Professional Experience (PEX) begins in the second year of full-time study. While in schools, the Teacher Education Student (TES) works with, and is supervised by, an experienced Supervising Teacher (ST) who acts as a mentor. Students are also allocated a Tertiary Supervisor (TS) who may visit the school to meet with TES and liaise between ST and unit convenors. Full information is available on the [Professional Experience website](#).

Pattern of Professional Experience in Schools

Year of Study	Professional Experience Unit	Professional Experience Days	Session
Year 2	EDST2000 Practice of Teaching: Inclusive Education	10	S1
Year 3	EDST3010 Practice of Teaching: Classroom Management and Assessment in the Secondary School	10	S2
Year 4	EDST4010 Practice of Teaching: ICT in the Secondary School	30	S1
Year 4	EDST4020 Practice of Teaching: Culturally and Linguistically Diverse Secondary Classrooms	30	S2

Plan your own course worksheet

First teaching subject _____ (Academic Major)

Additional teaching subject or Minor Study _____

2022 S1	2022 S2	2022 S3
2023 S1	2023 S2	2023 S3
2024 S1	2024 S2	2024 S3
2025 S1	2025 S2	2025 S3

Units contributing to the Academic Minor and/or NESA second teaching subject content requirements
