



**MACQUARIE**  
University

# **Macquarie School of Education**

## **Faculty of Arts**

### **2023**

# **Secondary Teacher Education**

## **Undergraduate Student Guide**

### **Bachelor of Science and Bachelor of Education (Secondary)**

Students commencing in 2023 are advised to retain the 2023 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 Macquarie School of Education Communications

Macquarie School of Education

Our people

Professional Experience

## Welcome from the Director

Congratulations on considering a career in education! As a teacher, you have the unique opportunity to nurture, inspire and influence students to be curious, resilient and brave in their learning. Our Teacher Education 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 enrich and 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.

Secondary teaching is a rewarding career which lets you use your knowledge and passion for specific subjects to inspire and enrich the lives of others. 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 2023.

Read this *Guide* in conjunction with the current [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 Handbook.

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

Information in this guide is accurate at the time of publication.

## Course Guidance

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 Handbook before seeking advice.

Full information regarding academic advice and course guidance is available here:

<https://students.mq.edu.au/support/study/course-guidance>

Students should submit their requests via [AskMQ](#).

**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:

**R**esilient

**R**eflexive in their teaching practice

**R**esponsive to children, colleagues, parents, professionals and communities

**R**eady to learn, and

**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 NESA minimum standards

All courses for becoming a teacher in New South Wales are accredited with NESA, the NSW Education Standards Authority. NESA has set minimum academic standards for people studying to be teachers.

The standards are:

- a minimum of three Band 5 HSC results, including one in English; **or**
- an approved comparable measure, which at Macquarie University is to pass a full year of study.

Students are able to start a teaching course at Macquarie University even if they do not meet the “three Band 5 HSC results” minimum, but they then need to pass a full year of university (80 credit points) to continue into their ‘how to teach’ studies.

In practical terms this means that at Macquarie University, teacher education students study aspects of the sociology, history and philosophy of education (EDST1000) and educational psychology about how people learn (EDST1010) in Year 1 of their course. Those units of study are important preparation for becoming a teacher. Students following a full-time pattern of study also complete other Year 1 studies (six other units) according to their course requirements.

Units of study about curriculum content and how to teach it (pedagogy) are then offered in our MQU undergraduate teacher education courses from Year 2 onwards. Year 2 unit of study in the secondary teaching courses is **EDST2000**. **This unit of study have strict pre-requisites** because of the [NESA requirements](#). To enrol in this unit of study, **students expecting to complete their studies in four years need to have 80 credit points by the end of Year 1. Some students may be eligible for a special approval waiver** if they do not have 80 credit points.

The 80 credit point pre-requisite for EDST2000 can only be waived if a student meets the other NESA requirements: a minimum of three Band 5s in the HSC, including English. A formal [special approval application](#) on the basis of HSC results would need to be submitted *after* your Year 1 Session 2 results are released, and not before. Applications will be subject to special approval review.

Students who are *not* eligible for a waiver to take EDST2000 in Session 1 of Year 2 would have to take those units in Session 1 of Year 3 of their course. Students should plan their studies carefully for a timely completion of their course given the circumstances, for example, they may need to take extra units in the other part of their double degree in Year 2 Session 1, if possible, to make room for EDST2000 in Year 3 Session 1. Students in this situation may apply for [Course Guidance](#) if they need help to plan their studies.

### 1.2.2 EDST2999 - Literacy and Numeracy Test for Initial 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). In New South Wales, Teacher Education Students must meet the standard of the LANTITE test prior to commencing their final professional experience placement.

At Macquarie we require our Teacher Education Students to have sat both LANTITE tests and to have their results indicating they successfully met the standard in both literacy and numeracy *before being eligible to enrol in EDST3010*. This means **completing both tests no later than the end of the second year** of your course. We recommend undertaking these tests early in your candidature, preferably by the end of the first year of your studies.

The LANTITE test is coordinated by Australian Council for Educational Research (ACER) (see link below). To record your LANTITE results at Macquarie University you need to enrol in the unit EDST2999 LANTITE. This is a 0 credit point unit with no associated coursework. EDST2999 is available to enrol in for Session 1 or Session 3. See the course guidance plans below, which indicate when to enrol into this unit. All information regarding LANTITE is available on EDSTCOMM (under 'Full year' in iLearn).

Information about the test and how to register is available on the [ACER](#) website.

### 1.2.3 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 (under 'Full year' in iLearn).

## 1.3 Workload and Planning

A 10 credit point unit requires a *minimum* study time commitment of 10 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. Thus, students are reminded it is ultimately their responsibility to be familiar with both their degree requirements and the requirements of NESA.

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## 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 [1.2.2 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  |
|---|--|
| <b>Biology</b>                                | <ul style="list-style-type: none"> <li>Biology</li> <li>Human Biology</li> </ul>   |
| <b>Chemistry</b>                              | <ul style="list-style-type: none"> <li>Chemistry</li> </ul>  |
| <b>Earth and Environmental Sciences (EES)</b> | <ul style="list-style-type: none"> <li>Earth and Environmental Sciences</li> </ul> <p><b>Note:</b> To meet NESA requirements to teach EES, you must include at least one unit in Biology or Human Biology in your studies</p>  |
| <b>Mathematics</b>                            | <ul style="list-style-type: none"> <li>Mathematics</li> </ul> <p><b>Note:</b> 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 must add MATH1000 to their study plan by submitting an Enrolment Support form via AskMq. The unit must be completed prior to starting the major.</p>  |
| <b>Physics</b>                                | <ul style="list-style-type: none"> <li>Astronomy and Astrophysics</li> <li>Physics</li> </ul> <p><b>Note:</b> 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"> <li><b>PHYS1020 Electric and Magnetic Interactions</b></li> <li><b>PHYS2010 Classical and Quantum Oscillations and Waves.</b></li> <li><b>PHYS2020 Electromagnetism and Relativity</b></li> <li><b>PHYS2030 The Structure of Matter</b></li> </ul> <p><b>Note:</b> Students who do not meet the HSC prerequisites for <b>PHYS1010</b> (HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or <b>MATH1000</b> or MATH130 or WFMA003 or WFMA0003] or <b>MATH1010</b> [(HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or MATH130 or <b>MATH1000</b> or WFMA003 or WFMA0003 or WMAT123 or WMAT1000] may seek to enrol in <b>MATH1000 Introduction to Mathematical Modelling</b>. This unit is an elementary unit designed for Engineering, Mathematics and Physics students</p> |

| First Subject | Teaching | Major |
|---------------|----------|-------|
|---------------|----------|-------|

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 submit an Enrolment Support form via AskMq to make room for MATH1000 in their program and for advice on an alternative study plan. Due to the offering patterns in the degree, students requiring this prerequisite unit will be unable to complete this degree in four years.

## 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<br>OR<br>Human Biology           | <a href="#">Chemistry</a>                        | Biology and Chemistry<br>Both first teaching subjects                        |
| Biology<br>OR<br>Human Biology           | <a href="#">Earth and Environmental Sciences</a> | Biology and Earth and Environmental Sciences<br>Both first teaching subjects |
| Biology                                  | <a href="#">Mathematics</a>                      | Biology first teaching subject<br>Mathematics second teaching subject        |
| Human Biology                            | Mathematics                                      | Biology first teaching subject<br>Mathematics second teaching subject        |
| Chemistry                                | <a href="#">Biology</a>                          | Biology and Chemistry<br>Both first teaching subjects                        |
| Chemistry                                | <a href="#">Human Biology</a>                    | Biology and Chemistry<br>Both first teaching subjects                        |
| Chemistry                                | Mathematics                                      | Chemistry first teaching subject<br>Mathematics second teaching subject      |
| Earth and Environmental Science          | Biology  | Earth and Environmental Sciences and Biology<br>Both first teaching subjects |
| Mathematics                              | Biology  | Mathematics and Biology<br>Both first teaching subjects                      |
| Mathematics                              | Human Biology                                    | Mathematics and Biology<br>Both first teaching subjects                      |
| Mathematics                              | Chemistry  | Mathematics and Chemistry<br>Both first teaching subject                     |
| Mathematics                              | <a href="#">Physics</a>                          | Mathematics/Physics<br>Both first teaching subjects                          |
| Mathematics                              | <a href="#">Statistical Modelling</a>            | Mathematics first teaching subject   |
| Physics OR<br>Astronomy and Astrophysics | Mathematics                                      | Mathematics/Physics<br>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 unit availability in the 2023 Handbook. This is subject to change, and some units may not be offered every year or may be discontinued. Please check current requirements in the online Handbook before enrolling each year.

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

*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 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 1.2.2 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 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: |   |    |                         |   |    |
| FOSE1015  | Statistical Concepts for Science  | 10 | FOSE/STAT               | 1000 Level Option Set   | 10 |
| OR  |   |    |                         |   |    |
| 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 1.2.2 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 AskMq. 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 must add MATH1000 to their study plan by submitting an Enrolment Support form via AskMq.

Please check current requirements in the online 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                                  | 10  | MATH1020                       | Calculus and Linear Algebra II  | 10 |   |
|  | OR   |   |                                |   |    |   |
| 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 LANTITE   |  | Ensure that you have met the standard for both literacy and numeracy by the end of your second year of study. See paragraph 1.2.2 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  | 10 |   |
|  |  |   |                                | OR  |    |   |
|  |  |   | 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.

| 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:<br>FOSE1015 Statistical Concepts for Science<br>OR<br>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 1.2.2 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<br>OR<br>CHEM260   | Physical Chemistry 1<br>OR<br>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 NESAs subject content requirements to teach Biology and Earth and Environmental Science as first teaching subjects.

Please check current requirements in the online 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:<br>FOSE1015 Statistical Concepts for Science<br>OR<br>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 1.2.2 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 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 (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 must add MATH1000 to their study plan by submitting an Enrolment Support form via AskMq. The unit must be completed prior to starting the major.

Please check current requirements in the online 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 1.2.2 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   |  |    | 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 |
| 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.

## 2.6 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 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:<br>FOSE1015 Statistical Concepts for Science<br>OR<br>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 1.2.2 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 Life Processes<br>OR<br>BIOL2410 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 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:<br>FOSE1015 Statistical Concepts for Science<br>OR<br>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 1.2.2 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<br>OR<br>BIOL2230  | Genetics<br><br>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 must add MATH1000 to their study plan by submitting an Enrolment Support form via AskMq. The unit must be completed prior to starting the major.

Please check current requirements in the online 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<br>OR<br>MATH1015 | Calculus and Linear Algebra I<br>OR<br>Calculus and Linear Algebra I (Advanced) | 10 | MATH1020<br>OR<br>MATH1025  | Calculus and Linear Algebra II<br>OR<br>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 <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 1.2.2 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<br>OR<br>MATH2110  | Vector Calculus and Complex Analysis<br>OR<br>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 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:<br>FOSE1015 Statistical Concepts for Science<br>OR<br>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 1.2.2 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<br>OR<br>BIOL2210      | Ecology<br>OR<br>Life Processes   | 10                              |
| BIOL2110  | Genetics  | 10 |                                 |   | ENVS3241<br>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) |                                 |
| 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** must 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 who do not meet the prerequisite for MATH1010 must add MATH1000 to their study plan by submitting an Enrolment Support form via AskMq.

Due to the offering patterns in the degree, students requiring this prerequisite unit will be unable to complete this degree in four years. Please seek Course Guidance via Ask Mq if you need assistance planning this unit.

| Unit   | Prerequisite   |
|--|--|
| PHYS1010<br>Modern Mechanics                         | (HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or <b>MATH1000</b> or MATH130 or WFMA003 or WFMA0003   |
| MATH1010<br>Calculus and Linear Algebra              | (HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or MATH130 or <b>MATH1000</b> or WFMA003 or WFMA0003 or WMAT123 or WMAT1000  |
| MATH1015<br>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<br>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 must add MATH1000 to their study plan by submitting an Enrolment Support form via AskMq. The unit must be completed 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 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<br>OR                            | 10 | MATH1020                           | Calculus and Linear Algebra II<br>OR  | 10 |
| MATH1015  | Calculus and Linear Algebra I (Advanced)                       |    | MATH1025                           | Calculus and Linear Algebra II (Advanced)   |    |
| STAT1371  | Statistical Data Analysis                                      | 10 | STAT1170<br>OR<br>STAT1378         | Introductory Statistics<br><br>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 <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 1.2.2 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  | Applied Statistics<br>OR                                       | 10 | STAT2114                           | Design of Surveys and Experiments<br>OR   | 10 |
| STAT2173  | Introduction to Probability                                    |    | STAT2372                           | Probability   |    |
| 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 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 must add MATH1000 to their study plan by submitting an Enrolment Support form via AskMq. The unit must be completed prior to starting the major.

Please check current requirements in the online 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<br>Calculus and Linear Algebra I (Advanced)                 |   | MATH1025                           | OR<br>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 1.2.2 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 |

## 2.8.4 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 must add MATH1000 to their study plan by submitting an Enrolment Support form via AskMq. The unit must be completed prior to starting the major.

Please check current requirements in the online 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<br>OR                            | 10  | MATH1020  | Calculus and Linear Algebra II<br>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:<br>FOSE1015 Statistical Concepts for Science<br>OR<br>STAT1170 Introductory Statistics |  | 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 |   |
| BIOL2110   | Genetics   | 10  | BIOL2410 Ecology<br>OR<br>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.

## 2.8.5 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 must add MATH1000 to their study plan by submitting an Enrolment Support form via AskMq. The unit must be completed 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.

| 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)   |    |   |
| 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: |  | 10  | FOSE/STAT 1000 Level Option Set II |   | 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 1.2.2 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  | 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.

## 2.8.6 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 must add MATH1000 to their study plan by submitting an Enrolment Support form via AskMq. The unit must be completed prior to starting the major.

Please check current requirements in the online 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<br>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 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 |   |
| CHEM2401                        | Physical Chemistry 1   | 10  | CHEM2201                           | Analysis and Measurement  | 10 |   |
| CHEM2601                        | OR<br>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.

Students who do not meet the prerequisite for MATH1010 must add MATH1000 to their study plan by submitting an Enrolment Support form via AskMq. The unit must be completed prior to starting the major.

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<br>Modern Mechanics                         | (HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or <b>MATH1000</b> or MATH130 or WFMA003 or WFMA0003   |
| MATH1010<br>Calculus and Linear Algebra              | (HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or MATH130 or <b>MATH1000</b> or WFMA003 or WFMA0003 or WMAT123 or WMAT1000  |
| MATH1015<br>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 must add MATH1000 to their study plan by submitting an Enrolment Support form via AskMq. The unit must be completed prior to starting the major.

Please check current requirements in the online 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<br>OR                            | 10  | MATH1020                        | Calculus and Linear Algebra II<br>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 |   | 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<br>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 |   |
| 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

### 2.10.1 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.

Students who do not meet the prerequisite for MATH1010 must add MATH1000 to their study plan by submitting an Enrolment Support form via AskMq. The unit must be completed prior to starting the major.

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<br>Modern Mechanics                         | (HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or <b>MATH1000</b> or MATH130 or WFMA003 or WFMA0003   |
| MATH1010<br>Calculus and Linear Algebra              | (HSC Advanced Mathematics Band 4 and above or Extension 1 Band E2 and above or Extension 2) or MATH130 or <b>MATH1000</b> or WFMA003 or WFMA0003 or WMAT123 or WMAT1000  |
| MATH1015<br>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 must add MATH1000 to their study plan by submitting an Enrolment Support form via AskMq. The unit must be completed prior to starting the major.

Please check current requirements in the online 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<br>OR                            | 10  | MATH1020                           | Calculus and Linear Algebra II<br>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<br>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 \_\_\_\_\_

| 2023 S1 | 2023 S2 | 2023 S3 |
|---------|---------|---------|
|         |         |         |
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|         |         |         |
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| 2024 S1 | 2024 S2 | 2024 S3 |
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|         |         |         |
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| 2025 S1 | 2025 S2 | 2025 S3 |
|         |         |         |
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|         |         |         |
|         |         |         |
| 2026 S1 | 2026 S2 | 2026 S3 |
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