



LEVEL 3 Earth and Space Science

3ESS

What is this course about?

This is a science course covering both practical and theoretical concepts of Earth and Space systems. It includes topics in ocean, atmosphere and astronomy. This is suited to students wishing to study courses such as environmental science, marine biology, climate science and geography.

What sorts of things will I do?

We started the year with astronomy (not astrology!), and each student will pick a topic related to space that intrigues them, from exoplanets to solar flares to the theory of Panspermia! We will learn much about the relationship between space and our planet as we explore meteorites and their impact on Earth by researching impact craters and modeling crater impacts in the lab. We will then return to Earth to focus on our precious oceans and atmosphere where we will explore the essential balance between these systems that regulate our climate by examining how we can care for them better. We will aim to have practical and theoretical experiences throughout the year.

Significant Learning

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- Engage with the iterative process of Earth and space science investigation through innovation, problem solving, inquiry, collaboration, and evaluation
- Recognise how different approaches can be used in Earth and space science investigations
- Consider mātauranga Māori and Pacific knowledges alongside Earth and space science in contexts that relate to Aotearoa New Zealand and the Pacific
- Identify interrelationships between Earth and space science practices, technological advances, mātauranga Māori, and the practical advancement of science knowledge
- Recognise that Earth and space science ideas are developed through critical and creative thinking, regulated by evidence
- Recognise that Earth and space science ideas are communicated using language, symbols and texts specific to Earth and space science
- Consider how the values and needs of a society can influence the focus of science endeavours
- Use Earth and space science understanding to critique claims or predictions made in communicated information

Nga Rau o Te Whariki o ASHS

Rangatiratanga (self-determination) supports ākonga to achieve. Thinking and meaning-making are promoted. Learning is meaningful and connected.

To experience success, students will have opportunities to develop their learning dispositions through:

Engagement:

- Use of inquiry approaches to direct learning
- Consider multiple perspectives on controversial topics to help formulate and understand their personal perspectives
- Student agency is encouraged by utilising tuakana to guide teina. This includes modelling, guidance, and practice opportunities

Managing self:

- Overcome roadblocks in learning by building resilient behaviours
- Use peer-to-peer evaluation, inquiry-based learning, and input into assessment design to support the development of characteristics of leadership of self

Learning relationships:

- Use of ako and tuakana-teina to lead learning activities.
- Engage in feedback loops that are purposeful, constructive, and acknowledge effort and achievement.

What standards can I enter?

Your teacher will work with the whole class and with you to devise a learning programme that is responsive to your strengths, interests, and one that sets you up to aim high and achieve your potential.

NCEA	Standard Number	Name of standard	Assessment mode	Credits (W/R)	Time frame
3	91415	Investigate an aspect of astronomy	Internal	4 credits R	Term 1
3	91410	Carry out an independent practical Earth and Space Science investigation	Internal	4 credits R	Term 1 - 2
3	91411	Investigate a socio-scientific issue in an Earth and Space Science context	Internal	4 credits R	Term 3
3	91413 AND/OR 91414	Demonstrate understanding of processes in the ocean system AND/OR Demonstrate understanding of processes in the atmosphere system	External	4 credits each R/W	NZQA Exam Timetable TBC
Optional internal - recommended as an alternative to externals.					
3	91412	Investigate the evidence related to dating geological event(s)	Internal	4 credits	Term 3

Key for Credits column:

R - UE reading literacy **W** - UE writing literacy

Scholarship Opportunity

In this subject area - Scholarship opportunity looks like:

- Joining and engaging the Scholarship Google classroom
- Attending and engaging in externally offered Webinars
- Doing further reading beyond the demands of the core 3ESS course

Depending on student interest, we may negotiate one workshop a term.

Frequently asked questions

Are there any further assessment opportunities (reassessments) for standards assessment in this course?

It is unlikely there will be further assessment opportunities. Students are encouraged to discuss appropriate submission dates with their teacher so they are able to take responsibility for their learning and turn in work when they are ready. Students should be aware that taking longer than the recommended time to complete the assessment may result in reduced credits from the course.

What stationery do I need?

The usual basic stationary and:

- an appropriate device such as a laptop or tablet that can allow internet use and either use of Google apps in a browser (laptop) or through the apps (for tablets)
- to supplement your record of learning on Google apps please purchase an exercise book no smaller than a 1B5
- pens, highlighters, pencils and a ruler for diagrams and graphing

What about homework and workbooks?

We extensively use google classroom, google apps, other online sites and therefore please ensure students bring an appropriate device to access these applications. You will be provided with an ESA Learning Workbook as part of the course fees to help with internals and preparation for external assessments.

Can I get University Entrance in this subject?

Yes. This is a university approved subject. University Entrance is possible by completing the four internals offered.

How much 'space' will we learn about?

We aim to co-construct the course to encompass students' interests, however it is important that students recognise we study space in relation to us (humans) and in order to better understand how our Earth works. We will spend quite a bit of time examining the relationship between Earth and other celestial bodies.