COURSE OUTLINE

ENS103 Earth's Surface Processes

School: School of Science, Technology and Engineering

2026 | Trimester 1

UniSC Sunshine Coast
UniSC Moreton Bay

BLENDED LEARNING

Most of your course is on campus but you may be able to do some components of this course online.

Please go to unisc.edu.au for up to date information on the teaching sessions and campuses where this course is usually offered.

1. What is this course about?

1.1. Description

Studies related to planet Earth impact most aspects of modern life. They are fundamental not only to the field of Earth Science but also to environmental science, ecology, environmental management and natural resource management. In this course you are introduced to the various environmental systems at the Earth's surface, including the lithosphere, hydrosphere, biosphere and atmosphere. This course emphasises problem solving by helping you develop scientific reasoning skills and apply them to the investigation of natural surficial environments.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
BLENDED LEARNING			
Learning materials – Pre-recorded conceptual videos and associated activity	1hr	Week 1	12 times
Laboratory 1 – On campus laboratory class	2hrs	Week 1	12 times
Seminar – On campus seminar	1hr	Week 1	3 times

1.3. Course Topics

- The Earth System and Geological time
- Principles of stratigraphy
- Geological processes at Earth's surface
- Plate tectonics: fundamental concepts, focussing on plate margins
- Rocks and rock-forming minerals
- Geological evolution of the Sunshine Coast region
- Physical, geochemical and biological characteristics of sediments
- Soils: their formation, sampling and laboratory analysis

2. What level is this course?

100 Level (Introductory)

Engaging with discipline knowledge and skills at foundational level, broad application of knowledge and skills in familiar contexts and with support. Limited or no prerequisites. Normally, associated with the first full-time study year of an undergraduate program.

3. What is the unit value of this course?

12 units

4. How does this course contribute to my learning?

COURSE LEARNING OUTCOMES On successful completion of this course, you should be able to...		GRADUATE QUALITIES Completing these tasks successfully will contribute to you becoming...
1	Demonstrate and apply theoretical and practical knowledge of geological processes and principles to regional and global contexts	Knowledgeable
2	Use practical techniques and templates to collect and organise geological information e.g. observation, sampling, laboratory testing, recording	Knowledgeable
3	Solve problems in Earth Science by:Analysing and interpreting geological informationIntegrating findings to identify rocks and soils, and constructing geological histories supported by evidence, e.g. diagrams, maps, calculations, observations	Creative and critical thinker Empowered
4	Communicate in scientific writing (workbook, reports)	Empowered

5. Am I eligible to enrol in this course?

Refer to the UniSC Glossary of terms for definitions of “pre-requisites, co-requisites and anti-requisites”.

5.1. Pre-requisites

Not applicable

5.2. Co-requisites

Not applicable

5.3. Anti-requisites

Not applicable

5.4. Specific assumed prior knowledge and skills (where applicable)

Not applicable

5.5. Microcredential Information

Not applicable

6. How am I going to be assessed?

6.1. Grading Scale

Standard Grading (GRD)

High Distinction (HD), Distinction (DN), Credit (CR), Pass (PS), Fail (FL).

6.2. Details of early feedback on progress

The first task (laboratory workbook) is designed to not only examine your knowledge but also to gauge your progress in understanding geological concepts and basic scientific observation skills; draft feedback on the second and third tasks will be available from the course co-ordinator prior to submission.

6.3. Assessment tasks

DELIVERY MODE	TASK NO.	ASSESSMENT PRODUCT	INDIVIDUAL OR GROUP	WEIGHTING %	WHAT IS THE DURATION / LENGTH?	WHEN SHOULD I SUBMIT?	WHERE SHOULD I SUBMIT IT?
All	1	Practical / Laboratory Skills	Individual	30%	50 - 100 words per activity: total 500 words	Week 6	In Class
All	2	Quiz/zes	Individual	30%	90 minutes	Week 8	Online Test (Quiz)
All	3	Report	Group	40%	2500 words	Week 12	Online Submission

All - Assessment Task 1: Laboratory workbook

GOAL:	To apply knowledge of geological processes and principles in practical ways and develop laboratory and problem solving skills.
PRODUCT:	Practical / Laboratory Skills
AUTHORSHIP STATEMENT:	
FORMAT:	The lab workbook records activities done duringpractical sessions and is 30% of your assessment.(a) Laboratory Sessions wks 1,2,5,6 (20%)1. Your tutor will set you problem-solving activities related to the material covered in the learning materials and supported by the relevant chapters of the text book (total of 5 geological scenarios). .2. You discuss the problems during tutorials and write your final 50 -100- word solution on one or two pages in your workbook.3. Each solution requires evidence to support it, e.g. diagrams, maps, calculations.(b)Laboratory Sessions 3 and 4 (10%)1. In each of the Weeks 3-4, you will participate in practical sessions in which you systematically observe, describe and record information about rocks in the workbook templates. You also learn how to accurately identify and classify rocks, and analyse data about them. 2. In the rock practicals, you describe and classify 12 common rock types from the Sunshine Coast and hinterland regions. You use a tabular format and approximately 50 words per rock sample. This includes (where possible) recording the minerals that constitute them.Written feedback will be provided on the information you record in your workbook.
CRITERIA:	

No.		Learning Outcome assessed
1	demonstrate and apply theoretical and practical knowledge of geological processes and principles to regional and global contexts	1
2	use practical techniques and templates to collect and organise geological information, e.g. observing, sampling, laboratory testing, describing, recording, classifying	2
3	solve problems in Earth Science by: analysing and interpreting geological information integrating your findings to identify rocks and soils, and constructing geological histories supported by evidence, e.g. diagrams, maps, calculations, observations	3
4	communicate in scientific writing in the form of a workbook (terminology, units, labeling of diagrams, English expression	4

GENERIC SKILLS:	

All - Assessment Task 2: Point Arkwright field trip quiz

GOAL:	To examine the capacity of students to apply practical and problem solving skills to construct a geological history and understand environmental processes within a local field area.
PRODUCT:	Quiz/zes
AUTHORSHIP STATEMENT:	
FORMAT:	You are required to complete a quiz on the field trip to Point Arkwright examining the geological features, rock types, and landscape evolution of the rock platform exposed northwards for about 500 metres. Details of the potential examined content will be provided via Canvas. The quiz comprises 30 multiple choice questions randomly presented from a larger pool. You will be given 90 minutes to complete the quiz. Note that because this study provides an introduction to several different aspects of geology, considerable guidance and explanation are provided on the field trip about the geological features that can be observed i.e. the rock types; the manner in which they have formed; the original sedimentary depositional environment; igneous activity and deformation that occurred after the sediments hardened; current weathering and erosional processes. The field trip provides an important introduction to required field skills and making geological / environmental observations but there is also substantial web-based information provided via the course Canvas site (comprising maps, field locations, photographs, diagrams, descriptions, and explanations) so that you can revisit the field study virtually.
CRITERIA:	

No.		Learning Outcome assessed
1	use practical techniques and templates to collect and organise geological information, e.g. observation, recording, sketching	2
2	analysing and interpreting critical geological information (structures, field relationships, relative timing of events)	3
3	integrating your findings to interpret the ancient environments and understand the geological history for the visited site supported by evidence, e.g. key findings, diagrams, maps, calculations	3

GENERIC SKILLS:	Problem solving, Applying technologies, Information literacy

All - Assessment Task 3: Final soil report

GOAL:	To work in groups to produce a soil report that integrates information collected about soil and sediment samples taken from the length and breadth of the Mooloolah River catchment
PRODUCT:	Report
AUTHORSHIP STATEMENT:	
FORMAT:	You work in a group of four to write a scientific report that uses class data from the analysis of soil samples taken from the Mooloolah River catchment. The samples have been analysed and described during the practical sessions, using different analytical techniques. You are provided with the class results for each sample. You are to integrate all the results to create a class dataset (e.g. in a spreadsheet or in tables). The report is to be in the standard format of Introduction, Methods, Results, and Discussion.Introduction Methods- describe the analytical techniques that you have applied to the samples.Results- present the integrated results from the practical sessions and generate a cohesive model of the surficial stratigraphy of the Mooloolah River catchment.Discussion- focus on the lithological, geochemical and biological characteristics of the soil / sediment samples and variations in these factors.
CRITERIA:	

No.		Learning Outcome assessed
1	demonstrate and apply theoretical and practical knowledge of soil geological processes and principles to a local context	1
2	use practical techniques and templates to organise geological information into a dataset	2
3	solve problems in Earth Science by: analyzing and interpreting the class dataset, integrating these data to construct a stratigraphic soil map supported by evidence, e.g. diagrams, maps, calculations, observations	3
4	communicate in scientific writing in the form of a group report (report structure, English expression, terminology, presentation of soil map – labels, stratigraphic map conventions, font size)	4

GENERIC SKILLS:	

7. Directed study hours

A 12-unit course will have total of 150 learning hours which will include directed study hours (including online if required), self-directed learning and completion of assessable tasks. Student workload is calculated at 12.5 learning hours per one unit.

8. What resources do I need to undertake this course?

Please note: Course information, including specific information of recommended readings, learning activities, resources, weekly readings, etc. are available on the course Canvas site– Please log in as soon as possible.

8.1. Prescribed text(s) or course reader

You need regular access to the resource(s) below. Many texts are available as ebooks through the Library at no additional cost.

REQUIRED?	AUTHOR	YEAR	TITLE	EDITION	PUBLISHER
Recommended	Stephen Marshak	2019	Earth: Portrait of a Planet	6	W. W. Norton

8.2. Specific requirements

Not applicable

9. How are risks managed in this course?

Risk assessments have been performed for all laboratory classes and a moderate level of health and safety risk exists. Moderate risks are those associated with laboratory work such as working with chemicals and hazardous substances. You will be required to undertake laboratory induction training and it is also your responsibility to review course material, search online, discuss with lecturers and peers and understand the health and safety risks associated with your specific course of study and to familiarise yourself with the University's general health and safety principles by reviewing the online induction training for students, and following the instructions of the University staff

10. What administrative information is relevant to this course?

10.1. Assessment: Academic Integrity

Academic integrity is the ethical standard of university participation. It ensures that students graduate as a result of proving they are competent in their discipline. This is integral in maintaining the value of academic qualifications. Each industry has expectations and standards of the skills and knowledge within that discipline and these are reflected in assessment.

Academic integrity means that you do not engage in any activity that is considered to be academic fraud; including plagiarism, collusion or outsourcing any part of any assessment item to any other person. You are expected to be honest and ethical by completing all work yourself and indicating in your work which ideas and information were developed by you and which were taken from others. You cannot provide your assessment work to others. You are also expected to provide evidence of wide and critical reading, usually by using appropriate academic references.

In order to minimise incidents of academic fraud, this course may require that some of its assessment tasks, when submitted to Canvas, are electronically checked through Turnitin. This software allows for text comparisons to be made between your submitted assessment item and all other work to which Turnitin has access.

10.2. Assessment: Additional Requirements

Eligibility for Supplementary Assessment

Your eligibility for supplementary assessment in a course is dependent of the following conditions applying:
(a) The final mark is in the percentage range 47% to 49.4%; and
(b) The course is graded using the Standard Grading scale

Eligibility for Supplementary Assessment Your eligibility for supplementary assessment in a course is dependent of the following conditions applying: The final mark is in the percentage range 47% to 49.4% The course is graded using the Standard Grading scale You have not failed an assessment task in the course due to academic misconduct

10.3. Assessment: Submission penalties

Late submissions may be penalised up to and including the following maximum percentage of the assessment task's identified value, with weekdays and weekends included in the calculation of days late:
(a) One day: deduct 5%;
(b) Two days: deduct 10%;
(c) Three days: deduct 20%;
(d) Four days: deduct 40%;
(e) Five days: deduct 60%;
(f) Six days: deduct 80%;
(g) Seven days: A result of zero is awarded for the assessment task.

The following penalties will apply for a late submission for an online examination:
Less than 15 minutes: No penalty
From 15 minutes to 30 minutes: 20% penalty
More than 30 minutes: 100% penalty

10.4. Links to relevant University policy and procedures

For more information on Academic Learning & Teaching categories including:

- Assessment: Courses and Coursework Programs
- Review of Assessment and Final Grades
- Supplementary Assessment
- Central Examinations
- Deferred Examinations
- Student Conduct
- Students with a Disability

For more information, visit https://www.usc.edu.au/explore/policies-and-procedures#academic-learning-and-teaching

10.5. Student Charter

UniSC is committed to excellence in teaching, research and engagement in an environment that is inclusive, inspiring, safe and respectful. The Student Charter sets out what students can expect from the University, and what in turn is expected of students, to achieve these outcomes.

10.6. General Enquiries

For course-specific questions, contact your teaching staff or Course Coordinator.

For other enquiries or to access support, please contact Student Central:

- UniSC Student Central
- UniSC Adelaide Student Central