Earth Processes

Last Updated: Tue, 12/16/2025

Course prefix: EAS

Course number: 2600

Section: NZ

CRN (you may add up to five):
33342

Instructor First Name: Ellery

Instructor Last Name: Ingall

Semester: Spring

Academic year: 2026

Course description:

I am super excited to have the opportunity to teach this class and meet all of you. New Zealand is paradise of fantastic geology. You don't need to take my word for it, even the United Nations has designated an area north of Dunedin as the Waitaki Whitestone UNESCO Global Geopark. In addition to covering the basics of Earth Science, a goal of this class is to increase your interest and awareness of the geology as you explore New Zealand.

Course learning outcomes:

This class will familiarize students with fundamental principles of earth science and will show how these principles relate to practical issues encountered in your life and future possible careers. The interrelationships between plate tectonics, rock and mineral types, geologic structures and hazards, and natural resources such as ground and surface water are emphasized. The following specific topics will be explored.

Plate tectonics (Chapter 2)

Glaciers – (Chapter 15)

Minerals (Chapter 3)

Igneous Rocks (Chapter 4)

Volcanoes (Chapter 5)

Sedimentary Rocks (Chapter 6)

Metamorphic Rocks (Chapter 7)

Deformation (Chapter 8)

Clocks in Rocks Geologic History (Chapter 9)

Earthquakes (Chapter 10)

Earth's Interior (Chapter 11)

Climate Systems – (Chapter 12)

Weathering and Mass Wasting – Surface Processes (Chapter 16)

Groundwater – Hydrologic Cycle (Chapter 17)

Surface Water- Stream Transport (Chapter 18)

Deserts and Coastlines and Oceans (Chapter 19)

Required course materials:

Text: *Understanding Earth by* Grotzinger and Jordan (8^{th} Edition)

(ISBN 978-1319055325). If you enjoy having a book to read as your favorite way to learn, you can find ebook version of this text on web. I am guessing you do not want to buy and carry around a heavy book on this adventure. I try to cover all the information I find interesting and important in my lectures. The powerpoint slides of my lectures will be available on Canvas. And I am fine if you want to use your laptop or tablet for note taking in class.

Canvas: Lecture slides will be posted on Canvas. I typically show a number of geologically oriented videos, which I cannot post on Canvas due to copyright restrictions. Many slides are just pictures of various earth features that are only fully explained in lecture. Thus, the posted materials (although super useful) are not a substitute for attending class.

Old exams will be posted on Canvas. In recent years I have given exams through Canvas and I have not figured out a way to post them. However, questions on older exams are largely the same as those I have used on Canvas. I will likely orient a few questions toward New Zealand for obvious reasons. I may also add a few short answer or essay questions for this small class.

Grading policy:

Grading:	Lecture	75%
	Laboratory	25%

For the lecture part of the class, there will be 3 exams. Each exam will count 30% toward the grade in the lecture part of the class. The remaining 10% will be based on class attendance. The class will meet 23 times. To get a perfect attendance score I expect your participation in 20 class sessions. This leaves 3 flexible sessions for illness or other issues. The exams will likely be a mix of multiple choice, short answer and matching questions. Depending on computer access and speed I hope to give the exams through the quiz function in Canvas, so you will need your laptop on exam days and you will always need your laptop for the lab.

Grades will be calculated using the following ranges:

90-100%	A
80-89.9%	B
70-79.9%	C
60-69.9%	D
less than 59.9%	F

As a 2000 level class mid-term grades of satisfactory or unsatisfactory must be reported. An exam average score below 69.9 will receive a mid-term grade of unsatisfactory. Given the compressed schedule of this class I am guessing we will get through two (and maybe all three) exams before the reporting deadline.

Likely Exam Days: January 15

January 29

February 11

Attendance policy:

The class will meet 23 times. To get a perfect attendance score I expect your participation in 20 class sessions. This leaves 3 flexible sessions for illness or other issues.

Academic honesty/integrity statement:

Students are expected to maintain the highest standards of academic integrity. All work submitted must be original and properly cited. Plagiarism, cheating, or any form of academic dishonesty will result in immediate consequences as outlined in the university's academic integrity policy.

Core IMPACTS statement(s) (if applicable):

This is a Core IMPACTS course that is part of the STEM area.

Core IMPACTS refers to the core curriculum, which provides students with essential knowledge in foundational academic areas. This course will help students master course content, and support students' broad academic and career goals.

This course should direct students toward a broad Orienting Question:

- How do I ask scientific questions or use data, mathematics, or technology to understand the universe?

Completion of this course should enable students to meet the following Learning Outcome:

- Students will use the scientific method and laboratory procedures or mathematical and computational methods to analyze data, solve problems, and explain natural phenomena.

Course content, activities and exercises in this course should help students develop the following Career-Ready Competencies:

- Inquiry and Analysis
- Problem-Solving
- Teamwork