

# **GEL 50: Introduction to Physical Geology Syllabus (external version) Spring Quarter 2021**

## **Instructor:**

Prof. Sarah Stewart (she/her/hers)  
Office hours: Fridays 10:00-10:50 (in gather.town; links in canvas)

Lecture Teaching Assistant: Nathalie Niepagen  
Zoom office hours: (information in canvas)

## **Lectures:**

Mon/Wed/Fri: 11:00-11:50 am, via Zoom  
The lectures will be recorded. Lecture Zoom links and recordings are available through the Zoom menu in Canvas.

## **Important Dates:**

1. Midterm 1: Friday, April 23 (in class via canvas)
2. Midterm 2: Wednesday, May 19 (in class via canvas)
3. Final Exam: Wednesday, Jun 9, 1-3 pm (in zoom via canvas)

## **GEL 050—Physical Geology (3)**

Lecture—3 hour(s). Prerequisites: High school physics and chemistry. The Earth, its materials, its internal and external processes, its development through time by sea-floor spreading and global plate tectonics. Students with credit for GEL 001 or the equivalent may receive only 2 units for GEL 050.

**GE credit:** Science and Engineering, Scientific Literacy.

## **Course Goals:**

This is a foundational course in physical geology.

In this course, you will

- practice applying quantitative skills and scientific reasoning to understand scientific problems and concepts;
- practice and improve your reading and writing skills to learn and explain scientific concepts;
- create links between concepts to appreciate the diversity of geologic processes on Earth;
- build the skills to be a lifelong learner, informed citizen, and geoscience enthusiast.

## **Overview:**

Geology can be thought of as the CSI-science of the earth: we use all sorts of tools from physics, chemistry, biology and mathematics and a range of observations to piece

together what is happening on the earth today and what has happened in the past.

The physical geology course is the first rigorous introduction to a variety of data and concepts that provide the foundation for all types of geologic study. Learning this foundational knowledge is what will eventually allow you to decipher the tectonic history of a terrane of rocks or figure out the inner workings of volcanoes.

In this course we will focus on a variety of geological systems and processes, how they work generally and how they differ in different geologic settings. Emphasis will be placed on how different types of observations of the rocks and laboratory experiments make it possible to figure out how the systems work, what processes are occurring and how these are preserved in the rock record.

**Required Textbook:**

Understanding Earth, 8<sup>th</sup> Edition, by Grotzinger and Jordan  
(7<sup>th</sup> edition is OK)

There is a reading document on the course web site that goes over how to use the textbook to prepare for lecture, and effectively identify important information and extract it from the textbook.

For each chapter, the course web site will have a list of study questions to focus your reading. It is helpful to read questions for each chapter **before** doing the reading.

**Grading:**

In-class questions & feedback	5 %
Weekly Assignments:	20 %
Midterm 1:	25 %
Midterm 2:	25 %
Final Exam:	25 %

**Weekly Assignments**

These are weekly homework assignments that will be posted at the beginning of the quarter. Check the canvas syllabus for assignment deadlines. They are intended to help prepare you for the exams. Homework is submitted online via canvas.

**Exams:**

These are multiple-choice exams administered through canvas. Expect to see graphs and figures from the book and lectures and questions from the homework. Exams are cumulative. Examples questions from previous exams are available on canvas.