Syllabus is Subject to Change
depending on Covid conditions

GEL 50: Physical Geology
Winter Quarter 2022

Prof. Nicholas Pinter (npinter@ucdavis.edu)
Office: 3113 Earth and Physical Sciences Bldg.
Office Hours: M 1:00 – 2:00 pm; R 1:00 – 2:00pm *(in person, but available by Zoom)*
or by appointment made in advance

Teaching Asst.: Nora Soto Contreras (ndsoto@ucdavis.edu). Office Hours TBD

Course description: This course will introduce you to the breadth of geosciences. Geology is a rigorous science aimed at understanding the history and functioning of our planet and a broad range of practical applications that depend on this understanding. The Earth, as you will learn, is unique within our solar system, and much can be learned about the history of our planet and other planets from looking at the rock record. In this course, you will learn about fundamental geologic processes and features, and you will learn skills including three-dimensional thinking and understanding deep, geological time.

Schedule: Class meets Tuesdays and Thursdays, 10:30 – 11:50 am, 55 Roessler

Grading:

Midterm 1: Tuesday, Jan. 25 in class (worth 25% of total grade)
Midterm 2: Tuesday, Feb. 15 in class (worth 25%)
In-class/homework activities: 20% of grade
Final exam: Tuesday, March 15, 1:00-3:00 p.m. (worth 30%) *Final is comprehensive*

Bring a Scantron form to each exam**.** NO EARLY EXAMS OR MAKEUP EXAMS.

Textbook: Understanding Earth 8th Edition, 2019. *A used copy of the 7th edition may be acceptable. (Users of the previous edition MUST be careful to read the correct TOPIC for each week, as chapter numbers change.)*

Students are expected to complete assigned readings by the dates listed in this syllabus and to take concise, well organized notes. The textbook is an important supplement to the lecture material. Exams will draw from both lecture and textbook materials, including some information included in one but not the other source.

I strongly recommend putting in at least 2 hours of study time for every classroom hour: 1) read the book and take notes on your reading; 2) answer the study questions; 3) review and summarize your class notes, looking for how concepts are connected; and 4) answer the lecture study questions. This time spent working with the information helps to move it from short term to long-term memory. *Experience shows that most grades on the "A" side of the curve go to students who attend all lectures and complete these 4 hours per week outside of class.*

In-class/homework activities: Several short activities will be completed during lecture time and as short homework assignments. These activities will not be announced in advance and may occur either at the beginning or end of lecture. Each student's lowest activity grade will be automatically dropped; no other activity grades will be adjusted regardless of excused absences, etc.

Class resources (on Canvas**):** Several types of resources and other information will be posted on the class Canvas page. Prior to the due date for each textbook assignment, several **reading comprehension and study** questions will be posted. These reading study questions *will be removed after the due date and time* for each reading. In addition, after each class, several **lecture study questions** will be posted and will remain on Canvas. Exams will be significantly (but not completely) drawn from both the reading and lecture study questions.

Field Trip(s): No field trips are required for GEL 50 (lecture). But, geology is a science best learned and appreciated in the field. Students in the GEL 50L lab will do a mandatory field trip, with an overnight option for selective students. We will attempt to provide an additional trip option for students in the GEL 50 lecture.

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Class Schedule, Topics, and Assignments

		Due
W1: 1/4-6	**Class mechanics and Introduction**	
T	Class mechanics & Introduction *by ZOOM*	
R	Deep time and history of the earth *by ZOOM*	*Canvas Assignment 1*
W2: 1/11-13	**Earth Dynamics 1**	
T	Structure of the earth & plate tectonics	Chap. 1
R	Plate tectonics	
W3: 1/18-20	**Earth Dynamics 2**	
T	Plate tectonics and hazards: EQs, tsunami, and more	Chap. 2
R	New perspectives on earth dynamics: Isostasy	

Tuesday, 1/25 EXAM 1

W4: 1/27	**Earth Materials**	
R	Minerals and Rocks	Chap. 3
W5: 2/1-3	**Volcanoes and Volcanic Rocks**	
T	Volcanic activity and hazards on earth	Chap. 4 *(Igneous Rocks)*
R	Volcanoes and volcanic rocks	
W6: 2/8-10	**Sedimentary Systems**	
T	Erosion, transport, and deposition of sediment	Chap. 6
R	Sedimentary rocks of the earth	

(Fri., Feb. 11: Deadline for GEL 50L students to sign up for optional 2-day version of field trip)

Tuesday, 2/15 EXAM 2

W7: 2/17	**Applications of Geoscience 1**	
R	Geology and water	Chap. 18 *(Stream Transport)*
W8: 2/22-24	**Applications of Geoscience 2**	
T	Coasts and coastal processes	Chap. 19
R	Deserts and wind	

(Sat., Feb. 26: GEL 50L field trip; for students enrolled in lab only [Space-available for others]; Feb. 27 add-on by application)

W9: 3/1-3	**Applications of Geoscience 3**	
T	Glaciers and glaciation	Chap. 15
R	Forensic geology: Geologists in court *(Optional reading in Canvas)*	
W10: 3/8-10	**Conclusions**	
T	Planetary geology	Chap. 20
R	Summary and review	