SYLLABUS FOR GEOLOGY 9 – SPRING 2018

Class Meetings: MW 4:30-6:35 in PHY75

Instructor: **Dr. David Tinker**
Contact info: e-mail david.tinker@reedleycollege.edu
Websites: see Canvas *for official class information* and https://sites.google.com/view/**tinkergeology** *for archived class materials*
Office Hours: by request, after class in PHY75

Textbook: There is no required text for this course.
Useful references include: Earth: An Introduction to Physical Geology (12th Edition), Tarbuck and Lutgens. Pearson, 2017; Physical Geology (online textbook link https://opentextbc.ca/geology/), Earle, 2015.

Course Objectives: Geology 9 is a survey course in Earth science. The goal of the course is to introduce the science behind structures and processes that affect humans every day. This is an introductory, general education course in geology appropriate for science majors and non-science majors. The curriculum is aligned with the requirements for secondary school teachers.

Student Learning Outcomes (SLOs)

1. **Demonstrate a knowledge of and recognize the processes that explain natural phenomena**
   - **a.** Understand the materials that make up the earth: minerals, major rock types, their geologic environments, and the rock cycle
   - b. Understand basic geologic processes that shape the earth's surface: land features produced from erosional processes of water, wind, and ice.
   - **c.** Understand the theory of plate tectonics and how tectonic plate interactions produce geologic environments and their associated rock types (igneous, sedimentary, and metamorphic)
   - **d.** Understand how earth history is deciphered: geologic dating techniques, uniformitarianism vs. catastrophism, the geologic time scale
   - **e.** Understand the atmospheric processes that govern the earth's climatic patterns, weather systems, moisture, clouds, and precipitation
   - **f.** Understand earth's place in the universe: solar system and beyond the solar system and laws that govern the universe: universal gravitation, Kepler's laws of planetary motion

2. **Apply methodologies of science when approaching a problem**
   - a. Apply the various steps in the scientific method that lead to an accurate understanding of earth processes and modern astronomy explained in lecture and the textbook

3. **Apply logical quantitative and qualitative reasoning in solving problems or analyzing arguments**
   - **a.** Understand man's place in earth's history and how man has impacted the earth's spheres.

Suggested Supplies: calculator; ruler; protractor; pencil; different-colored pens (e.g., one blue, one red)

Attendance: Attendance in lecture and lab is mandatory. The student will be dropped automatically if she/he misses the first day of class, without contacting the instructor. If a student misses more than 25% of the lectures/labs, without contacting the instructor with a valid excuse, they will also be dropped. Always inform the instructor ahead of time if you know you have to miss an exam; a missed exam with no prior warning will count as a zero grade. Unexplained, missed classes will not excuse missed homework assignments. If a student is disruptive (including using cell-phones, interrupting the instructor continuously) he or she may be asked to leave the lecture/lab and recorded as "absent."

Cancelled Classes: If for some reason a class is cancelled, an official yellow cancellation form will be posted on the door of the classroom. Every effort will be made to inform the students via Canvas, or on the Reedley College Website in a timely manner.

Late Adds: The last day to add this class in person is January 26. The last day to add this class using Webadvisor is January 28. Please be aware that these are firm deadlines; mistakes such as forgetting to use an add code will not be forgiven. Any student who adds this class late forfeits the opportunity to complete assignments that were submitted before his or her add date.

Grading :

Quizzes	(15 %)	Quizzes will not be announced. There will be roughly one quiz per week. They will generally be given at the end of a lecture period. They may contain content from the current lecture or the previous lecture. Understanding "Preparation Questions" is a good way to prepare for quizzes. A missed quiz will be entered as a zero grade. There are no make-ups. The two lowest quiz grades will be dropped.
Exams	(40 %)	Exams will be given on the posted dates. There will be no make-up exams. There will be no way (after an exam) to arrange a make-up. All exams, including the cumulative final, will be weighted equally. The lowest exam score will be dropped when the final grades are calculated.
Lab Exercises	(20 %)	Lab exercises will be collected at the end of each lab period. There will be no make-ups for missed lab exercises.
Homework	(10 %)	There will be one homework assignment each week. The assignments are designed to reinforce ideas from the chapters and to help you prepare for exams. The assignments will be due at the beginning of class each Wednesday. No late work will be accepted.
Essays	(15 %)	Three essays will be required. A grading rubric will be provided these essays, and they will be due at the beginning of the class period on the posted dates. No late work will be accepted.

General Grading Break-down : **A** 90-100%, **B** 80-89%, **C** 70-79%, **D** 60-69%, **F** 0-59%

Please be aware of the following rules:

- Tardiness, leaving early, or sleeping during lectures will result in a partial or full absence being recorded. Students need to sign the sign-in sheet within the first 10 minutes of class. Students considered absent will forfeit their points for the day.
- Fraudulent behavior during exams is graded with a (0) zero.
- Copying of any class work is considered fraudulent behavior for both the copier and the originator and points (10-100%) may be deducted from both the copier and the originator. DO NOT HAND IN IDENTICAL HOMEWORK.
- No late work will be accepted (without prior discussion of validated, extenuating circumstances).
- No extra credit will be given. You need to work consistently from the beginning.
- It is expected that you will not use your cell phones during class. Please silence your phone during lectures so as not to disturb the class. No cell phones or other electronic device will be allowed during exams.

If you have a verified need for an academic accommodation (especially in labs) or materials in alternate media (i.e., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact the Disabled Student Services as soon as possible.

With this statement on my course syllabus, I am **referring** each of my enrolled students in need of academic support to **tutorial services**. Referral reason: Mastering the content, study skills, and basic skills of this course is aided by the use of trained peer tutors

Tentative course outline:

Week		Lecture Topic	Lab Exercise	Essays
1 (1/8-1/12)	M	Introduction to Geology	The Earth's Spheres	
	W	Plate Tectonics	Plate Motion	
2 (1/15-1/19)	M	NO CLASS- Martin Luther King, Jr. Day		
	W	Minerals	Silicate Minerals	
	F	Last Day to Drop Classes (for refund)		
3 (1/22-1/26)	M	Igneous Processes, Pt. 1	Nonsilicate Minerals	
	W	Igneous Processes, Pt. 2	The Rock Cycle	
	F	Last Day to Register/Drop Deadline (to avoid a "W")		
4 (1/29-2/2)	M	Volcanoes	Igneous Rocks	
	W	Weathering and Soils	Soils	
5 (2/5-2/9)	M	Sedimentary Rocks	Sedimentary Rocks	
	W	MIDTERM 1		
	F	Pass/No Pass Deadline		

6 (2/12-2/16)	**M**	**Metamorphic Rocks**	**Metamorphic Rocks**	
	W	**Geologic Time**	**Relative Age Dating**	**Essay 1 Due**
7 (2/19-2/22)	**M**	**NO CLASS- Washington Day observance**		
	W	**Geologic Structures**	**Block Diagrams**	
8 (2/25-3/2)	**M**	**Earthquakes**	**Locating an Epicenter**	
	W	**Earth's Interior**	**Refraction Lab**	
9 (3/5-3/9)	**M**	**Ocean Crust**	**Aerial Photo Interpretation**	
	W	**Mountain Building**	**Topographic Maps**	
	F	**LAST DAY TO DROP <u>WITH A "W"</u>**		
10 (3/12-3/16)	**M**	**Mass Wasting**	**Angle of Repose**	
	W	**Running Water**	**Stream Processes**	
11 (3/19-3/23)	**M**	**Groundwater**	**Groundwater and Subsidence**	
	W	**MIDTERM 2**		
(3/26-3/30)	**SPRING BREAK**			
12 (4/2-4/6)	**M**	**Glaciers**	**Glacial Features**	
	W	**Deserts**	**Dryland Landforms**	**Essay 2 Due**
13 (4/9-4/13)	**M**	**Shorelines**	**Coastal Landforms**	
	W	**Global Climate Change**	**Evidence of Climate Cycles**	
14 (4/16-4/20)	**M**	**Weather Patterns**	**El Nino**	
	W	**Ocean and Atmosphere Circulation**	**Density of Seawater**	
15 (4/23-4/27)	**M**	**Earth's Evolution**	**Climate Change**	
	W	**Energy and Mineral Resources**	**Ore Minerals**	
16 (4/30-5/4)	**M**	**Mineral Resources of CA**	**Economic Resources**	
	W	**MIDTERM 3**		
17 (5/7-5/11)	**M**	**The Solar System**	**Patterns in the Solar System**	**Essay 3 Due**
	W	**The Earth-Moon System**	**The Moon**	
18 (5/14-5/18)	**M**	**FINAL**		