SYLLABUS FOR GEOLOGY 9 – SPRING 2020

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

Instructor: **Dr. David Tinker**
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Websites: class materials will be uploaded to Canvas
Office Hours: by request, after class in PHY75

Textbook: There is no required text for this course. Useful references include: An Introduction to Geology (online textbook; link https://opengeology.org/textbook), Johnson, et al., 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 prospective teachers.

Student Learning Outcomes (SLOs)

1. Explain and apply the scientific method to problem solving across numerous disciplines.
2. Differentiate among the major Earth systems and describe how the systems are interconnected. Earth's systems include the hydrologic cycle, rock cycle, plate tectonics cycle, solar system, geologic time, weather and climate.
3. Describe basic physical properties of minerals and rocks and use appropriate methods to identify common minerals and rocks.
4. Utilize the plate tectonics theory to explain the distribution of Earth's major topographic features and the distribution of volcanoes and seismic activity.
5. Describe the forces and processes that shape the earth's surface and their effects over geologic time.
6. Describe and explain the controls of Earth's weather and climate.
7. Demonstrate a fundamental understanding of the significant role played by oceans in controlling Earth's weather, climate and biological systems.
8. Be able to explain and critique theories for the origin of the solar system and the universe.
9. Communicate complex course concepts effectively in writing and diagrams.

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 31. The last day to add this class using Webadvisor is February 2 (for this, you must have full access to Webadvisor). 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 may not be announced. There will be roughly one quiz per week. They will generally be given at the beginning of a lecture period. A missed quiz will be entered as a zero grade. There are no make-ups. The two lowest quiz grades will be dropped.
Exams	(30 %)	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 mid-term exams will be weighted equally. The lowest exam score will be dropped when the final grades are calculated.
Final Exam	(10 %)	The final exam is required. It will be a cumulative, written exam given in class at the posted final time period.
Lab Exercises	(25 %)	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. No late work will be accepted.
Essays	(10 %)	Two essays will be required. A grading rubric will be provided these essays, and the essays 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. Use of your cell phone will result in a partial or full absence being recorded, and you will forfeit the points awarded for work completed that day. Please silence your phone during lectures so as not to disturb the class.

- No cell phones or other electronic devices 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 (1/13 and1/15)	M	Introduction to Geology	The Rock Cycle	
	W	Plate Tectonics	Plate Motion/Earth's Size?	
2 (1/22)	M	No Class- Martin Luther King, Jr. Day		
	W	Minerals, part 1	Mineral Structures	
	F	Last Day to Drop Classes (for refund)		
3 (1/27 and 1/29)	M	Minerals, part 2	Diagnostic Properties of Minerals	
	W	Igneous Processes, Pt. 1	Fractional Crystallization	
	F	Last Day to Register/Drop (to avoid a "W")		
4 (2/3 and 2/5)	M	Igneous Processes, Pt. 2	Igneous Rocks	
	W	Weathering and Erosion	Weathering Lab	
5 (2/10 and 2/12)	M	Sedimentary Rocks	Sedimentary Rocks	
	W	MIDTERM 1		
6 (2/17 and 2/19)	M	No Class- Washington's Day		
	W	Sedimentary Structures	Depositional Environments	
	F	Last day to change to or from the Pass/No-pass grading basis		
7 (2/24 and 2/26)	M	Metamorphic Rocks	Metamorphic Rocks	
	W	Geologic Time	Relative Age Dating	Essay 1 Due
8 (3/2 and 3/4)	M	Earth History, part 1	Solar System Lab	
	W	Earth History, part 2	Paleomagnetism	
9 (3/9 and 3/11)	M	Crustal Deformation	Block Diagrams	
	W	MIDTERM 2		

	F	**LAST DAY TO DROP <u>WITH A "W"</u>**		
10 (3/16 and 3/18)	**M**	**Earthquakes**	**Locating an Epicenter**	
	W	**Earth's Interior**	**Refraction Lab**	
11 (3/23 and 3/25)	**M**	**Mass Wasting**	**Angle of Repose**	
	W	**Running Water**	**Meander Evolution**	
12 (3/30 and 4/1)	**M**	**Groundwater**	**Groundwater and Subsidence**	
	W	**Coastlines**	**Shoreline Modification**	
4/6-4/10	**Spring Break**			
13 (4/13 and 4/15)	**M**	**Deserts**	**Desert Landforms/Topographic Maps**	
	W	**Midterm 3**		
14 (4/20 and 4/22)	**M**	**Glaciers**	**Mountain Glaciers/Topographic Maps**	
	W	**Global Climate Change**	**Paleoclimate Lab**	**Essay 2 Due**
15 (4/27 and 4/29)	**M**	**Extreme Weather**	**El Niño**	
	W	**Energy and Resources, pt. 1**	**Ore Minerals**	
16 (5/4 and 5/6)	**M**	**Energy and Resources, pt. 2**	**Nonmetallic Minerals**	
	W	**Global Circulation, pt. 1**	**Atmospheric Circulation**	
17 (5/11 and 5/13)	**M**	**History of California**	**Density of Seawater**	
	W	**The Earth-Moon System**	**Kepler's Laws and Tidal Forces**	
18 (5/18)	**M**	**FINAL**		