SYLLABUS FOR GEOLOGY 9 – SPRING 2022

Lecture: MW 5:00-6:15 MS204 Lab: W 6:30-8:20 PHY76

Instructor: Dr. David Tinker
E-mail: david.tinker@reedleycollege.edu
Websites: class materials will be uploaded to Canvas
Online Office Hours: TBD; by appointment

Textbook: The ***required text*** for this class will be the Laboratory Manual in Physical Geology, American Geosciences Institute, edited by Vincent S. Cronin.

Additional resources: 1) online text An Introduction to Geology (https://opengeology.org/textbook), Johnson, et al., 2017; and 2) online text Physical Geology, 2nd edition, Earle, 2019 (https://opentextbc.ca/physicalgeology2ed/).

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.

Attendance and Drop Policy: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. 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."

1. To earn participation points, you must attend lecture and actively participate.

Canceled Classes: If for some reason a class is canceled, 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 28. The last day to add this class using Webadvisor is January 30 (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.

Drop Deadline: The last day to drop this class for a full refund is January 21. The last day to drop this class in person, to avoid a "W" on your transcript, is January 28 (this deadline is January 30 online, if you have full access to Webadvisor). The last day to drop this class, to avoid having your current letter grade appear on your transcript, is March 11.

Pass/No Pass Grading: The last day to change the grade reporting format to or from a letter grade to Pass/No Pass is February 11.

Grading:

Participation (20 %): All students will be expected to answer (and ask) questions in class. Meaningful responses to questions will earn students participation points. These points cannot be made up.

Daily Assignments (15 %): There will be Canvas assignments that you should complete **before** each lecture period. These assignments are designed to get you familiar with vocabulary, so we can focus on more interesting ideas in class. Late assignments will not be accepted. The five lowest assignments scores will be dropped when your final grade is calculated.

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. Labs missed because of mask issues will be scored as zeros. The two lowest assignment scores will be dropped.

Quizzes (20 %): There will be one quiz per week, beginning in the second week of the course. These quizzes will be short, written assignments that reinforce information presented in the previous week's notes. There are no make-ups. The three lowest quiz grades will be dropped when your final grade is calculated.

Exams (15 %): There will be three midterm exams. These exams will ask you to apply concepts discussed in the class. The lowest midterm exam score will be dropped when your final grade is calculated.

Final Exam (5 %): The final exam is required. It will be a cumulative exam that will be completed online on the day scheduled for the final.

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 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.

Diversity Statement:

Respect for Diversity: It is my intent that students from all diverse backgrounds and perspectives be well served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength and benefit. It is my intent to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally or for other students or student groups. In addition, if any of our class meetings conflict with your religious events, please let me know so that we can make arrangements for you.

Tentative course outline:

Week 1 (Jan. 10-Jan.14)

Monday: Introduction to Geology; Rocks and the Rock Cycle
Wednesday: Plate Tectonics
Lab: Plate Tectonics

Week 2 (Jan. 17-Jan. 21)

Monday: No Class- Martin Luther King, Jr. Day
Wednesday: Minerals
Lab: Minerals

Week 3 (Jan. 24-Jan. 28)

Monday: Igneous Rocks, part 1
Wednesday: Igneous Rocks, pt. 2
Lab: Fractional Crystallization; Igneous rock classification

Week 4 (Jan. 31-Feb. 4)

Monday: **Midterm 1**
Wednesday: Sedimentary Rocks, pt. 1
Lab: Weathering and Erosion

Week 5 (Feb. 7-Feb. 11)

Monday: Sedimentary Rocks, pt. 2
Wednesday: Metamorphic Rocks, pt. 1
Lab: Sedimentary Rocks

Week 6 (Feb. 14-Feb. 18)

Monday: Metamorphic Rocks, pt. 2
Wednesday: Geologic Time
Lab: Metamorphic Rocks; Geologic Time

Week 7 (Feb. 21-Feb.25)

Monday: No Class- Lincoln's Birthday
Wednesday: The Solar System
Lab: Kepler's Laws

Week 8 (Feb. 28-Mar. 4)

Monday: Earth History
Wednesday: Topographic Maps Crustal Deformation
Lab: Topographic Maps Crustal Deformation

Week 9 (Mar. 7-Mar. 10)

Monday: **Midterm 2**
Wednesday: Crustal Deformation Earthquakes
Lab: Crustal Deformation and Earthquakes

Week 10 (Mar. 13-Mar. 17)

Monday: Earthquakes
Wednesday: The Earth's Interior
Lab: Earthquakes

Week 11 (Mar. 20-Mar. 24)

Monday: Mass Wasting
Wednesday: Surface Water
Lab: Surface Water

Week 12 (Mar. 27-Mar. 31)

Monday: Groundwater
Wednesday: Glaciers
Lab: Glaciers

Week 13 (Apr. 4-Apr. 8)

Monday: **Midterm 3**
Wednesday: Deserts
Lab: Deserts and Aerial Photos

Week 14 (Apr. 18-Apr. 22)

Monday: Coastlines
Wednesday: Climate Change
Lab: Coastlines

Week 15 (Apr. 25-Apr. 29)

Monday: Weather Patterns
Wednesday: Weather Patterns
Lab: Extreme Weather

Week 16 (May 2-May 6)

Monday: Weather
Wednesday: Atmospheric Circulation
Lab: Weather/circulation

Week 17 (May 9-May13)

Monday: Nonrenewable Energy
Wednesday: Renewable and Clean Energy
Lab: Mineral Resources

Week 18 (May 16-May 20)

Final Exam