Geology 201: Physical Geology I (4 credits), Fall 2020

Instructor: Deron Carter
Questions: email carterd@linnbenton.edu
Office hours:, Monday 1-2, Wednesday 3-4 pm or by appointment on Zoom
CRNS: 23767 and 23768
Class meeting times on Zoom: Wednesdays 10-11:50 am (23767) or 1-2:50 pm (23768)

Welcome to Geology!

In this course we will cover a range of geology topics that include Earth's formation, plate tectonics, natural hazards and resources, minerals and rocks, and mountain building. The class is designed to maximize your interaction with the material, engage and incorporate your own life experiences, and inspire your respect for the stewardship of the planet.

Upon the completion of the course a student will be able to meet these ***course learning outcomes*:**

- Describe the process of scientific inquiry in the context of plate tectonic theory.
- Solve quantitative problems resulting from plate tectonic processes
- Classify and identify important Earth materials
- Use plate tectonic theory to explain geologic processes that occur on and below the surface of Earth

As your instructor, I am committed to finding the most effective ways to engage *all students* with the material to help you to learn. My class format and teaching methods are all designed to help you build your understanding of the material, then kick it around and ask questions of me and your fellow students so you can strengthen it. Through readings and online lectures, all of which you access at your own pace at home, you will begin the process each week of learning the new material. During the week, you will refine and strengthen that understanding through *active learning* with other peers, completing assignments designed to apply material from lectures, get you to think about the best ways you learn, and assess your learning in quizzes.

Why this model? Studies on learning show that students best learn science through active engagement and not just lecture. My personal hope is that you get a lot out of this class, but it will require your time, preparation, and preparedness. If you are ever struggling in this class, reach out. I want to help! *Welcome.*

Class Format

Each week follows the same format (except for week 1 and week 11):

- Sunday-Tuesday: Watch video lectures and read the textbook at your own pace, and complete the weekly module guide (due Wednesday 10:00 am)
- Wednesday: Attend Zoom class session (10-11:50 am if you are registered for 23367, or 1-2:50 pm for 23368) with completed worksheet and engage with other students and myself.
- Thursday-Sunday: Complete and submit weekly module assignment, review course material, and take the weekly module quiz. (due Sunday 11:59 pm)

Prerequisites

Math 075, or skills to do arithmetic, basic algebra, graph reading, and unit conversions. This is an introductory science course, and no previous geology or science background is needed for success.

Learning Resources

- **Textbook:** Physical Geology (2nd edition), by Steven Earle, BC Open Textbook. The textbook is a free, open-educational resource, available at: https://opentextbc.ca/physicalgeology2ed/.
- **Earth Rocks! Video Series**: by Katryn Weise available at: https://www.youtube.com/playlist?list=PLrhG2NtyHAZuPW5HP3cyenGGTUqUhumeQ
- **Moodle.** This is our online class hub: you will review the syllabus, submit assignments, take quizzes and exams, and track your grade. Textbook and video links are also posted here.
- **Moodle mobile app.** This is a free app for your phone or mobile device and you will use it to take photos of some of your assignments to upload to Moodle.

Grading (subject to change)

- 10 Modules Guides (4 pts each) = 40 pts (13%)
- 10 Module Assignments (Labs, Discussion Posts, Report) = 120 pts (40%)
- 10 Module Quizzes (10 pts each) = 100 points (33%)
- Final Exam = 30 pts (10%)
- Road Checks = 10 pts (3%)

Total = 300 points

Grading Scale

A = 100-90%
B = 89-80%
C = 79-70%
D = 69-60%
F = 59% and below

Incomplete grade (IN) will only be considered if a student has talked to me in advance, and a signed agreement between the student and myself is completed. IN grade are assigned only if the student has a good reason for making the request, has only the minority of coursework to complete, and has scored a C or better on work that has been submitted.

This class consists of 10 modules. Each module consists of:

Module Guides: Each week you will complete a worksheet based on the content covered in the readings and video lectures. Worksheets are graded on completeness and thoughtfulness of answers. They do not need to be 100% correct to receive full credit, but must be your own work. They are always due on Wednesday at 10:00 am.

Weekly Zoom class meetings: We meet Wednesday on Zoom at 10-11:50 am or 1-2:50 pm, depending on which section you registered for. You will bring your completed worksheet to this meeting, and review it in small groups, and then ask me questions. This will give you the opportunity to ask your peers and instructor questions about what didn't make sense, and teach others about what you have learned. We will also use some of this time to complete engaging in-class activities to help you learn material more deeply. These sessions will not be lecture focused.

Module Assignments: Each week you will complete one module assignment. These assignments are varied and include discussion posts and replies, lab activities, and a report. Detailed instructions for the assignments are found in Moodle. Assignments are always due at 11:59 pm on Sunday.

Module quizzes: Module quizzes are due Sunday by 11:59 pm and include 10 multiple-choice questions. Please review and study before taking the quizzes.

Road check: The last 5-10 minutes of Wednesday class, you will complete a weekly road check. Road checks give you an opportunity to reflect on what you have learned, what you still need to learn, and how you will achieve this. They will also give you an opportunity to provide me feedback about how the course is going.

Comprehensive final exam: The final exam covers all 10 modules and is open note and book, but must be completed individually. The final exam will be open Monday of finals week and close at 3 pm on Wednesday of finals week.

Campus Resources

If you have any questions relating to COVID-19 and the college, financial aid, accessing the library, or need help meeting basic needs (like food and rent), please contact me, or visit: https://www.linnbenton.edu/about-lbcc/college-services/safety/covid19/faq-students.php.

LBCC is committed to inclusiveness and equal access to higher education. If you have approved accommodations through the **Center for Accessibility Resources (CFAR)** and would like to use your accommodations in this class, please talk to your instructor as soon as possible to discuss your needs. If you believe you may need accommodation but are not yet registered with CFAR, please visit the CFAR website at www.linnbenton.edu/cfar for steps on how to apply for services or call 541-917-4789.

Statement of Inclusion

To promote academic excellence and learning environments that encourage multiple perspectives and the free exchange of ideas, all courses at LBCC will provide students the opportunity to interact with values, opinions, and/or beliefs different than their own in safe, positive and nurturing learning environments. LBCC is committed to producing culturally literate individuals capable of interacting, collaborating and problem-solving in an ever-changing community and diverse workforce. LBCC is an equal opportunity educator and employer.

Honor Code Considerations: This class is highly collaborative; however, there are expectations for individual work as well. If it is ever unclear to you, please ask. Any cheating, plagiarism, etc., may result in a zero and possible recommendation to the administration for further consequences.

A Final Note:

I am here to help you learn. I want *all* students to succeed in this class. Only you can do the learning, but expect me to be available for help during class and office hours and to facilitate the learning process.

Thanks, Deron

G201 Course Schedule. Subject to Change.

Week	Topic	Reading and Videos linked in Moodle	Work Due Submit in Moodle
1	Class introductions and Earth's Origin	Videos: ● Earth's Formation ● Density ● Rock Cycle Reading: Ch. 1 and 22	Module Guide (due Sunday 11:59 pm) Discussion Post 1 (due Sunday 11:59 pm) Quiz 1 (due Sunday 11:59 pm) .
2	Earth's Interior	Videos: ● Earth's layers and isostasy ● Journey to the Center of the Earth Reading: Ch. 9	Module Guide (due Wed 10 am) Lab: Earth's Interior and Seismic Waves (due Sunday 11:59 pm) Quiz 2 (due Sunday 11:59 pm)
3	Plate tectonics	Videos: ● Continental Drift ● Plate tectonics basics ● Plate tectonics and global impacts ● Paleomagnetism ● Hot spots Reading: Chapter 10	Module Guide (due Wed 10 am) Lab: Using GoogleEarth to Visualize Plate Boundaries (due Sunday 11:59 pm) Quiz 3 (due Sunday 11:59 pm)
4	Earthquakes and hazards	Videos: ● Earthquakes Reading: Chapter 11	Module Guide (due Wed 10 am) Discussion Post 2 (due Sunday 11:59 pm) Quiz 4 (due Sunday 11:59 pm)
5	Geologic Structures: Faults and Folds	Videos: ● Folds and faults ● Mountain building Reading: Chapter 12	Module Guide (due Wed 10 am) Lab: Geologic Structures (Sunday 11:59 pm) Quiz 5 (due Sunday 11:59 pm)
6	Minerals and mineral resources	Videos: ● Inside minerals ● Mineral identification ● Minerals Addendum Reading: Chapter 2	Module Guide (due Wed 10 am) Lab: Mineral Identification (Sunday 11:59 pm) Quiz 6 (Sunday 11:59 pm)

7	Igneous rocks and magma	Videos: ● Igneous rocks ● Plutons ● Magma viscosity Reading: Chapter 3	Module Guide (due Wed 10 am) Lab: Identifying Igneous Rocks (due Sunday 11:59 pm) Quiz 7 (due Sunday 11:59 pm)
8	Weathering and sedimentary rocks	Videos: ● Weathering and sedimentation ● Sedimentary rocks Reading: Ch 5 and 6	Module Guide (due Wed 10 am) Lab: Sedimentary Rocks (due Sunday 11:59 pm) Quiz 8 (due Sunday 11:59 pm)
9	Volcanoes and hazards	Videos: ● Magma viscosity ● Volcanoes Reading: Chapter 4	Module Guide (due Wed 10 am) Report: Exploring Volcanic Features of the US (due Sunday 11:59 pm) Quiz 9 (due Sunday 11:59 pm)
10	Metamorphism and metamorphic rocks	Videos: ● Metamorphism ● Identifying metamorphic rocks Reading: Chapter 7	Module Guide (due Wed 10 am) Metamorphic Rocks Lab (due Sunday 11:59 pm) Quiz 10 (due Sunday 11:59 pm)
11	Final Exam		**Final Exam on Moodle: Opens 7 am on 12/7** **Closes 3:00 pm on 12/9**