**Geology 203: Historical Geology, Spring 2018**

Instructor: Deron Carter

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Office hours: M 12-1 and 2:30-3, T 10-11, W 11:30-12 and 2:30-3, or by appointment

CRN: 41674

Class meeting times: Monday and Wednesday 10-11:20, Friday 10-11:50 in MH 108

**Welcome to Geology!**

In this course we will explore how we know what we know about Earth’s history, and learn how life shapes Earth and how the Earth has shaped life.. This class is not about memorizing the names of 100 different rocks and how to distinguish them. Instead, it’s about a way of looking at the world around you and learning how to be confident in your observations and interpretations of that world.

Course Goals:

* To better understand the natural world. The knowledge you build in this course will encourage you to become more curious about how the Earth works.
* To have a general knowledge of science so you can make more informed decisions as a contributing member to society.
* To develop and improve life-long skills such as problem solving, critical thinking, oral communication, and group work. I hope that the skills you learn and refine in this class will carry over into your other classes and your personal life.

**Course Description**

A study of Earth and fundamental geologic principles as interpreted through the fossil and rock record. Topics include fossils and stratigraphic principles, geologic time and age dating, mountain building, global change, and the geologic history of the North American continent. Laboratory component highlights rocks, fossils, and geologic maps. Field trips highlight topics discussed. Geology courses do not need to be taken in sequence. Prerequisite: Math 75. Counts as Physical Science Perspective for AS/OSU degrees and Science with Lab for AAOT degree. Articulates as GEO 203 at OSU.

**Course Learning Outcomes**

**At the end of the course, as student will be able to:**

* Solve quantitative problems relating to geologic time.
* Apply geochronological methods to determine a sequence of geologic events.
* Use geologic cross sections and maps to describe geologic structures.
* Summarize biological and geological changes to Earth over time.

**Learning Resources**

* **Textbook:** The Changing Earth by Monroe and Wicander (7th edition, but older edition is OK!), Cengage publishing. A copy is available at the LBCC library for 2-hour checkout.
* **G203 Course packet**, by Deron Carter. Please bring to class with you everyday.
* **Moodle.** This is our online class hub: you will check grades, review syllabus and powerpoints, and submit some assignments.
* **Calculator.** Any type will do for this class, but only non-graphing calculators (no phones) can be used on exams. I will provide a set for exams.

**Grading (subject to change)**

* 2 Exams with individual and group portions = 200 points
* Comprehensive Final Exam = 150 points
* Labs (10 points each) = 90 points
* Reading Quizzes (10 points each) = 60 points
* Homework (5 points each) = 25 points
* In-class reflections (1 point each) = 15 points
* Field Trip or article review = 10 points

**Total = 550 points**

**Grading Scale**

A = 100-90% (550-495 points)

B = 89-80% (494-440 points)

C = 79-70% (439-385 points)

D = 69-60% (384-330 points)

F = 59% and below (329 points or less)

**Exams:** The two exams will be administered as a 2-stage “pyramid” tests. You will have a set period of time to take the exam, turn it in, then retake the exam with a group of students in the class (graded 85% for the "solo" effort and 15% for the "group" effort). Your group score cannot lower your grade. If you know you will be absent on an exam day let me know ahead of time to schedule a make up. Once exams are returned they cannot be made up.

**Final Exam**: This exam is comprehensive and will be completed individually; no “pyramid” format.

**Lab exercises:** Labs have three parts: a prelab, in-class lab work. All materials are found in your lab manual. Prelabs are due at the beginning of each lab. Lab reports are due the following lab period. Late assignments are not accepted, but your lowest lab score is dropped.

**Reading Quizzes.** Much of class will be devoted to discussion and active learning. To make this work everyone must be prepared when coming to class, so it is important that everyone read the assigned readings before we discuss them. I provide reading guides on our Moodle site to help you focus on what is important in the text. You may use your Reading Guides during the quiz and the quiz will cover just the information in the Reading Guides. You may not use your books or class notes on the quizzes. There are no make ups, but your lowest quiz is dropped. **Reading guides must be printed from Moodle and completed in your own hand writing.** Please see me with any concerns.

**Homework.** On non-reading quiz days you will have a short homework assignment due at the beginning of class. These assignments give you an opportunity to interact with geology outside of class. All assignments are posted on Moodle. These assignments are graded on a completion basis, and late assignments are not accepted, but I drop your lowest homework.

**Reflections.** On non-lab and exam days we will use the last five minutes of class for you to reflect on what you have learned, and address parts of the material that are still “muddy” to you. You will record these reflections on an index card or piece of paper. Each is worth 1 point.

**Field Trip:** We will have an all-day field trip to the Oregon Coast on Sunday, April 28, departing and returning to LBCC 8:00 am and 5:00 pm. You may drive your own vehicle; some transportation is provided for those that cannot. You will need to bring a lunch, water, clipboard, pencils, and have shoes that can get wet/muddy, and a rain coat. If you cannot attend you must let me know ahead of time, and complete an article review.

### Campus Resources

Many resources such as the Library, Student Help Desk (for computers and software) Learning Center, the Writing Desk, and Family Connections, are available to you as a student. They are described on the LBCC website.

Any student who has difficulty affording groceries or food, or who lacks a safe and stable place to live, is urged to contact a **Student Resource Navigator in the Single Stop Office (T-112):** Amanda Stanley, stanlea@linnbenton.edu, 541-917-4877. The navigator can connect students to resources. Furthermore, please talk with your instructor if you are comfortable doing so. This will enable them to provide any resources that they may have.

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.

**Your responsibilities:**

1. A huge amount of the learning in this course happens in real time, during class. Come ready to participate and work. Long lectures will be rare occurrences in this class, so you should be prepared to be active throughout the class.

2. If you absolutely MUST be absent, please let me know ahead of time. You may or may not be able to make up the work done in class.

3. I expect you to check the Moodle website regularly to stay updated with current class information and due dates.

4. Respect your instructors and your classmates, and we will return the favor. Respect includes creating an environment conducive to learning, which means being on time, staying for the entire class, turning off cell phones, listening, and contributing.

5. **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.

**My responsibility:**

I am here to help you learn. I want each and every student 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.

***A FINAL NOTE:*** I sincerely believe that each of us can be a resource in this course. I hope you will ask questions, initiate discussion, and take an active part in the class and your learning. In this way, I think we will all learn more! ***Thanks, Deron***

**COURSE SCHEDULE (Subject to Change)**

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| --- | --- | --- | --- |
| Week and Reading | Monday | Wednesday | Friday |
| 1  syllabus | NO CLASS  LBCC in service | Class introductions | **Prelab due**  Lab: Geologic timeline |
| 2  Ch. 1 | **Reading Quiz 1**  Rocks and Minerals | **Homework 1**  Rocks and minerals | **Prelab due**  Lab: Rock cycle |
| 3  Ch. 17.1-17.8 | **Reading Quiz 2**  Relative and Absolute dating | **Homework 2**  Relative and absolute dating | **Prelab due**  Lab: Geologic dating techniques |
| 4  Ch. 7, 17.9 | **EXAM 1**  Covers weeks 1-3 | **Reading Quiz 3**  Sedimentary environments | **Prelab due**  Lab: Sedimentary environments |
| 5  Ch. 2 | **Homework 3**  Stratigraphic correlation | **Reading Quiz 4**  Plate tectonics | **Prelab due**  Lab: Stratigraphy and correlation |
| 6  Evolution of minerals, on Moodle | Plate tectonics | **Homework 4**  Early Earth | **Prelab due**  Lab: Panama Passageway |
| 7  Biodiversity crisis, Moodle | **EXAM 2**  Covers weeks 1-6 | **Reading Quiz 5**  History of life and mass extinctions | **Prelab due**  Lab: Fossils |
| 8  Causes of mass extinction, Moodle | **Reading Quiz 6**  Causes of mass extinctions | **Homework 5**  Overview of the 5 great mass extinctions | **Prelab due**  Lab: The day the Mesozoic died |
| 9  Thawing permafrost video, Moodle | NO CLASS  MEMORIAL DAY | **Homework 6**  Life’s effect on Earth: biogeochemical cycles | **Prelab due**  Lab: Dinosaur footprints |
| 10  Conservation of Biodiversity, Moodle | Earth’s effect on life: Horse evolution and adaptive radiation | **Reading Quiz 7**  The sixth extinction  Earth’s geologic future? | **Prelab due**  Lab: Geologic record of climate change |
| Final  6/11 | **FINAL EXAM**  **Covers weeks 1-10**  8:00-9:50 am  MH 108 |  |  |