General Science 106: Principles of Phy. Sci.: Earth Science (4 credits), Fall 2019

Instructor: Dr. Ben Stanley
Office: MH 111
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Office hours: M and W 2:30-3:30 pm, or by appointment
CRN: 23770
Class meeting times: M 10:00-11:50 am, W and F 10:00-11:20 am in MH 114

Welcome to Earth Science!

In this course we will explore how the various Earth "systems" made up of rocks, gases, and water interact to form our beautiful Earth, provide us with resources, and create disasters. 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

Introduces non-science majors to the Earth Sciences, including geology, meteorology, and astronomy. Includes a laboratory component. No previous science background required. No prerequisite. Counts as Physical Science Perspective for AS/OSU degrees and Science with Lab for AAOT degree.

Course Learning Outcomes

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

- Identify and classify igneous, sedimentary, and metamorphic rocks.
- Describe the formation of landforms in the context of plate tectonic theory.
- Describe the components and processes of the hydrologic system.
- Describe the components and processes of the atmospheric system, including weather and climate.
- Describe objects that make up the Solar System and universe, and explain the effects of the relative positions of the Earth, Sun, and Moon.

Learning Resources

- **Textbook:** Foundations of Earth Science, by Lutgens, 8th Edition, ISBN: 9780134184814.
- **GS106 Course packet**, by Deron Carter. Please bring to lab days.
- **Moodle.** This is our online class hub: you will check grades, review syllabus and powerpoints, and submit homework assignments. Textbook and video links are also posted here.

Grading (subject to change)

2 mid-term exams (50 points each) =	100 points	23.86%
Final exam (100 points) =	100 points	23.86%
Labs (10 points each, lowest score is dropped) =	80 points	18.60%
Online Reading Quizzes (10 points each) =	90 points	20.93%
In-class quizzes (10 points each, lowest score is dropped) =	60 points	13.95%
Total =	**430 points**	

Grading Scale

A = 100-90% (430-387 points)
B = 89-80% (386-344 points)
C = 79-70% (343-301 points)
D = 69-60% (300-258 points)
F = below 60% (below 258 points)

Mid-term Exams: Exam 1 covers weeks 1-3. Exam 2 covers weeks 4-6. The two mid-term exams will be administered as a 2-stage “pyramid” tests. You will have a set period of time to take the exam individually, turn it in, then retake the exam with a group of students in the class (graded 80% for the "solo" effort and 20% for the "group" effort). Your group score cannot lower your grade, meaning if you do better solo that will be your entire 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. You will be allowed one 3x5” note card (front and back).

Lab exercises: Labs occur each week. You will generally have enough time to complete the exercises on lab day; however, you may always turn it in at the beginning of the next class. Late labs are not accepted after that next class. Labs cannot be made up, but I drop your lowest score. **If you miss more than 3 labs you will fail the course due to the lab focused nature of this course.**

Online Reading Quizzes: Open note/Open book quizzes (taken online) are due by 9:30 am each week. The quiz is designed to demonstrate your completion of text reading. Completing the reading will enable you to take part in class activities with the baseline knowledge needed. You have two tries for every quiz and unlimited time, but the deadline is firm. Quizzes will not be made up or reopened; take your quiz early!

In-class quizzes. Most weeks we will have a short in-class quiz on Wednesday (unless there is an exam that day), covering previous material in class. These “low stakes” quizzes are designed to help you practice and prepare for the “higher stakes” exams. Your lowest quiz grade is dropped. If you know you will be absent on a quiz day, please let me know before hand to schedule a make up.

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 the **Roadrunner Resource Center (T-112):** www.linnbenton.edu/rcc. 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. **Be prepared** for class by completing the reading and taking the online reading quiz.
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. **Actively participate** in class. Ask questions when you are confused and stop me if there is a topic that wasn't covered completely.
4. **Check the Moodle** website regularly to stay updated with current class information and due dates.
5. **Be on time**, stay for the entire class, listen, and contribute. If you are absent, please let me know as soon as possible.
6. **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.

Thanks, Ben

COURSE SCHEDULE (subject to change):
Due dates or holidays in bold face

Week	Monday	Wednesday	Friday
1	Class introduction **Lab: Scientific Inquiry and Volcanic Eruptions**	Earth Systems Process of Science Reading: Intro. To Earth Sci.	Mineral Identification Reading: Ch. 1
2	**Lab: Minerals**	**Wk 2 Reading Quiz due*** **Quiz 1** Minerals and Resources Reading: Ch. 1	Rock Types Reading: Ch. 2
3	**Lab: Rock Types**	**Wk 3 Reading Quiz due** **Quiz 2** Rock cycle Reading: Ch. 2	Plate boundary types Reading: Ch. 5.3-5.6
4	**Lab: Plate Tectonics**	**Wk 4 Reading Quiz due** **EXAM 1**	Seismology Earthquakes and tectonics Reading: Ch. 6.1-6.4
5	**Lab: Seismic-Eruption**	**Wk 5 Reading Quiz due** **Quiz 3** Earthquake hazards The "Big One" Reading: Ch. 6.5	Hydrologic Cycle Erosion by Streams Reading: Ch. 3.1, 3.3-3.7
6	**Lab: Stream Tables**	**Wk 6 Reading Quiz due** **Quiz 4** Depositional Landforms and Flooding Reading: Ch.3.8-3.10	Seawater composition Seafloor Features Reading: Ch. 9.1-9.5
7	**NO CLASS** **VETERAN'S DAY**	**Wk 7 Reading Quiz due** **EXAM 2**	Past climate records Human-caused global warming Reading: Ch. 11.5-11.7
8	**Lab: Climate Change**	**Wk 8 Reading Quiz due** **Quiz 5** Atmospheric composition, structure, and heating Reading: Ch. 11.1-11.4	Cloud Formation Rain-Shadow Effect Reading: Ch. 12.1-12.4
9	**Lab: Weather**	**Wk 9 Reading Quiz due** **Quiz 6** The Solar System Reading: Ch. 15.3-15.6	**NO CLASS** **LBCC Closed** **Thanksgiving Holiday**
10	**Lab: Astronomy**	**Wk 10 Reading Quiz due** **Quiz 7** Life cycles of Stars Reading: Ch. 16.2-16.4	The Big Bang and our Universe Reading: Ch. 16.1, 16.6
Finals	**FINAL EXAM 12/09** **8:00-9:50 am** **MH 114**		

Reading Quizzes are submitted on Moodle by 9:30 am on the due date.