

General Science 106: Principles of Phy. Sci.: Earth Science (4 credits), Fall 2020

CRN: 22613

Instructor: Ben Stanley

Email: stanleb@linnbenton.edu

Office Hours: Wednesday 3-4 pm, or available by appointment

Office: <https://linnbenton.zoom.us/j/92291039442>, Password: GS106

Virtual time and days (not required): 3 pm-4 pm on M/Tu

Classroom: <https://linnbenton.zoom.us/j/95281063246>, Password: GS106

Virtual time and days (**required**): 8:30-10:20 am W

Classroom: <https://linnbenton.zoom.us/j/91978685675>, Password: GS106

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.

Learning Resources

- **Textbook:** Foundations of Earth Science, by Lutgens, 8th Edition, ISBN: 9780134184814.
- **Moodle.** This is our online class hub: you will check grades, review syllabus and powerpoints, and submit homework assignments. Textbook, labs, and video links are also posted here.

Plan for the term due to COVID-19:

There is only one required class time (Wednesday 8:30-10:20 am), though I do plan to record my lectures on Monday and Tuesday as listed above. If you are able to attend the lecture recording times, I encourage you to do so, but all lectures will be recorded and posted to Moodle afterward. The Wednesday session will be our lab time and also time to ask questions and do some short active learning exercises. I will be available to help, and you may also work in groups with other students via Zoom if you desire. I will also be available via Zoom during office hours or by appointment.

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.

Grading (subject to change)

| | | |
|--|----------------|-------|
| 2 exams (50 pts each) = | 100 pts | 24.4% |
| Final exam (100 pts) = | 100 pts | 24.4% |
| Labs (15 pts each, lowest score is dropped) = | 120 pts | 29.2% |
| Reading Quizzes (15 pts each, lowest score is dropped) = | 90 pts | 22.0% |
| Total = | 410 pts | |

Grading Scale

A = 100-90% (410-369 points)

B = 89-80% (368-328 points)

C = 79-70% (327-287 points)

D = 69-60% (286-246 points)

F = below 60% (below 246 points)

Testing: Tests are taken individually via Moodle, and are closed note and book unless otherwise noted. Once tests are graded they cannot be made up. Exam 1 covers weeks 1-3. Exam 2 covers weeks 4-6. These exams will be available for 24 hours and will replace the lecture on that Monday. The final exam is comprehensive and will be available starting Monday (12/14) at 6 am and will close Wednesday (12/16) at midnight.

Lab exercises: Labs will be held via Zoom on Wednesdays. Lab reports are due by the following Monday. Labs cannot be made up but I drop your lowest score. Labs will be submitted via Moodle. **If you miss more than 3 labs you will fail the course due to the lab focused nature of this course.**

Reading Quizzes: Open note/Open book quizzes (taken on Moodle) are taken on Mondays, open starting at 6 am for 24 hours. The quiz is designed to demonstrate your completion of text reading. Each Reading quiz will check your understanding of the material from the previous week. You have two tries for every quiz and unlimited time, but the 24 hour deadline is firm. I will drop your lowest score.

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.

Other due to COVID-19:

The college has an amazing [FAQ](#) page about how the term will work (and how to access basic needs resources, such as food and rent if you need them).

If you do not have access to a computer, call the LBCC library at 541-917-4630. If you do not have internet access, there are many [options](#).

A note on Zoom: I know not everyone will be able to participate in the lecture recordings, but I hope many of you will. (It is okay if you have kids at home or pets!) Zoom uses your computer (or phone) camera and audio, so you can see me and other students. In this time of isolation, Zoom can really connect us and help to develop a class community. To get started with Zoom, all you need to do is go [here](#), and sign in with your LBCC email and password. This will create your Zoom account automatically. Your first use of Zoom will require a one-time download. The Zoom mobile app works similarly.

Changes to the Syllabus

I reserve the right to change the contents of this syllabus due to unforeseen circumstances. You will be given notice of relevant changes in class, through a Moodle Announcement, or through LBCC e-mail.

Note: Changes are much more likely to occur this term due to troubleshooting new solutions for labs and activities in a science classroom. I will do my best to not change things around too much, but please be warned and flexible if things do need to change. My expectations for you are highly relaxed due to the many changes and I ask for the same in return.

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

Due dates every week:

- Labs are due the following Monday at 11:59 pm
- Reading Quizzes/Exams taken on Mondays - open starting at 6 am for 24 hours. Each Reading Quiz will check your understanding of the material from the previous week. Exam 1 covers weeks 1-3. Exam 2 covers weeks 4-6. The final exam is comprehensive

| Week | Reading | Monday | Tuesday | Wednesday |
|---------------|--|--|---|------------------------------------|
| 1 (9/28) | Introduction, Ch. 1 (except 1.3) | Processes of Science; Earth Systems | Minerals and Resources | Lab 1: Minerals |
| 2 (10/5) | Ch. 2 | Rock types RQ 1 | The Rock Cycle | Lab 2: Rock Types |
| 3 (10/12) | Ch. 5.3-5.6, 7.1-7.7 | Plate Tectonics RQ 2 | Volcanoes | Lab 3: Plate Tectonics |
| 4 (10/19) | Ch. 7.8-7.9 7.12 | Exam 1 | Volcanic Hazards | Lab 4: Volcanic Explosivity |
| 5 (10/26) | Ch. 6.1-6.6 | Seismology; Earthquakes and Tectonics RQ 3 | Earthquake Hazards; The "Big One" | Lab 5: Seismic- Eruption |
| 6 (11/2) | Ch. 3.3-3.12 | Hydrologic Cycle; Erosion by Streams RQ 4 | Depositional Landforms and Flooding | Lab 6: Stream Tables |
| 7 (11/9) | Ch. 9.2-9.7 | Exam 2 | Seawater Composition; Seafloor Features | NO CLASS: VETERAN'S DAY |
| 8 (11/16) | Ch. 11.1- 11.8 | Atmospheric Composition, Structure, and Heating RQ 5 | Past Climate Records; Human-Caused Global Warming | Lab 8: Climate Change |
| 9 (11/23) | Ch. 12.2- 12.4, 12.6, 15.3-15.7 | Cloud Formation; Rain-Shadow Effect RQ 6 | The Solar System | Lab 9: Weather |
| 10 (11/30) | Ch. 16 | Life Cycles of Stars RQ 7 | Galaxies and the Big Bang | Lab 10: Astronomy |
| Finals | | Final exam will be available during Finals week (12/14-12/16) | | |