

General Science 106: Earth Science (4 credits), Spring 2021

Instructor: Jeremy Randolph-Flagg

Office: NA

Email: randolj@linnbenton.edu

Class Times: Monday & Wednesday 9:00 am - 9:50 am

CRN: 41474

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 of 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.

Remote Teaching Schedule

This term instead of doing in person lectures and labs the class is of course conducted online. Attendance on Zoom is mandatory and will count towards your final grade.

Mondays will be a normal class period on Zoom. I will lecture on the topics of the week and there will be discussion and activities to reinforce the main ideas.

Wednesdays will be lab days. I give you any info you need and then put students into breakout rooms to work on the week’s lab and answer questions as needed. Labs will typically take longer than the one hour period we have for class so I strongly encourage starting before Wednesday’s class and coming to the lab session with an idea of what you need help on.

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.
- **Moodle.** This is our online class hub: you will check grades, review syllabus and powerpoints, and submit assignments. Textbook and video links are also posted here.
- **Calculator.** Any type will do for this class.
- **Google Earth Pro** - You'll need to download Google Earth Pro (it's free) to a computer that you have access to in order to complete some labs in this class. If you have trouble accessing Google Earth Pro reach out to the instructor.

Grading (subject to change)

- 2 Tests (50 points each and 25 points)= 75 points
- Comprehensive Final Exam = 75 points
- Labs (15 points each) = 120 points
- Write-ups (10 points each) = 70 points
- Quizzes (10 Points each) = 90 points
- Participation (1 pt each day) = 16 pts

Grading Scale

A = 100-90%

B = 89-80%

C = 79-70%

D = 69-60%

F = 59% and below

Exams: Will be Mondays of Week 5 and Week 8. All exams will be administered online.

Final Exam: This exam is comprehensive, covering Weeks 1 - 10.

Lab exercises: Labs will be due each week on Thursday at 11:59 pm. Thursday's class period is primarily dedicated to working on the week's lab. I drop your lowest lab grade from your final grade.

Write - Ups: Every non-test week you will also complete a small short-answer style assignment worth 10 pts on what we covered that week. Write-ups are due on Thursday at 11:59 pm.

Quizzes:

Quizzes generally close Friday at 11:59 pm. Quizzes are multiple choice, scored out of 10, and you have one attempt. Quizzes are based on the weekly readings from the textbook and supplemental lecture recordings. I drop your lowest quiz grade from your final grade.

Weekly Schedule:

Here is a recommended Weekly Schedule

Monday	Tuesday	Wednesday	Thursday	Friday
Attend Class (9:00 - 9:50)	Get started on Lab	Attend Class (9:00 - 9:50) Complete Lab	Write-Up	Complete Readings/ Watch lecture videos Quiz

Schedule

* Unless otherwise indicated all assignments are due at 11:59 pm on due date

Dates	Week	Topics	Assignments (due dates in parentheses)
3/29 - 4/2	1.	Class Introduction, Earth History, Maps	Assignment #1 (3/30) Lab 1 - Maps (3/31) Write-Up #1 (4/1) Quiz - Tectonics (4/2)
4/5 - 4/9	2.	Earth Structure, Plate Tectonics	Lab 2 - Plate Tectonics (4/7) Write-Up #2 (4/8) Quiz - Earthquakes and Volcanoes (4/9)
4/12 - 4/16	3.	Earthquakes, Volcanoes	Lab 3 - Earthquakes (4/14) Write-Up #3 (4/15) Quiz - Rocks (4/16)
4/19 - 4/23	4.	Rocks: Sedimentary, Igneous, Metamorphic, Rock Cycle	Lab 4 - Rocks (4/21) Write - Up #4 (4/22) Study For Midterm
4/26 - 4/30	5.	Midterm 1 Water Properties	Midterm 1: Solid Earth (4/26) Quiz - Water (4/27) Quiz - Streams and Rivers (4/30)
5/3 - 5/7	6.	Ground and Surface Water	Lab 5 - Stream Table (5/5) Write-Up #5 (5/6)
5/10 - 5/14	7.	Atmospheric Processes	Lab 6 - Atmosphere (5/12) Write-Up #6 (5/13) Study For Midterm
5/17 - 5/21	8.	Midterm 2 Our Solar System	Midterm 2: Hydrologic Cycle (5/17) Quiz - Solar System (5/18) Quiz - Outer Space (5/21)
5/24 - 5/28	9.	Principles of Astronomy, Outer Space	Lab 8 - Astronomy (3/4) Write Up #8 (3/5) Quiz - Climate Change
5/31- 6/4	10.	Climate Change	Lab 9 - Climate Change (3/11) Study For Final
3/15 - 3/17		Finals Week	Final