

# GEOL 1110L Physical Geology Lab syllabus

Spring 2021

Section 501, 1 credit

Tuesday 8:15 am - 10:15 am, VAHS 108

Section 502, 1 credit

Tuesday 12:45 pm - 2:45 pm, VAHS 108

**PROFESSOR:** Dr. Ben Burnett

**E-MAIL:** [burnettben@unm.edu](mailto:burnettben@unm.edu)

**OFFICE HOURS:** Tuesday 11:45-12:45 and 2:45-4:00 in VAHS 108 or *by Zoom appointment - please email*

Physical Geology Lab is the laboratory component of Physical Geology. You will learn to identify rocks and minerals in hand samples, work with topographic maps, geologic maps, and geologic cross-sections, and apply stratigraphic principles to explore geologic time.

## Student Learning Outcomes

1. Use physical properties to identify mineral specimens.
2. Describe, classify, and identify igneous, sedimentary, and metamorphic rocks and their textures.
3. Utilize the principles of stratigraphy to provide an explanation of the geologic history portrayed in a photograph or cross-section.
4. Explain how contour lines are used to represent topography, use map scales to measure distances on the ground, and construct topographic profiles.
5. Identify landforms from images and topographic maps.
6. Interpret geologic maps and construct geologic cross-sections.
7. Acquire and communicate scientific data, ideas, and interpretations through written, oral, or visual means. Examples may include creating and describing graphs, maps and photos.
8. Apply critical thinking skills such as inductive, deductive, and mathematical reasoning to solve geological problems.

**TEXTBOOK:** **None**, but may help to have: Earth: Portrait of a Planet, by Stephen Marshak.

**UNM Learn CLASS PAGES:** Log in at: <https://learn.unm.edu> with your UNM CIRT username and password to access this site. It holds the syllabus, schedule, lecture outlines and graphics, and your grades (posted confidentially). Exams and problems will be given there.

**CLASS CONDUCT:** Class will begin on time and end on time. Bring a **pencil** and keep an eye out for emails with any additional instructions for each lab. Safety is a top priority: make sure you follow all lab procedures carefully. Respect the equipment, samples, glassware and of course, your peers and instructor. Absence from more than 2 classes without medical or other documented legitimate excuse may result in being dropped from the class, but **if you decide not to take the course you must drop it yourself.**

**COVID-19 CONSIDERATIONS:** Do not come to class if you feel sick, have a fever or unexpected breathing issues. Contact the university and your professors immediately. We must all wear masks or similar face coverings at all times during class.

You have the ability to prevent the spread of COVID-19 and to preserve the health of fellow students, your instructor, staff and the community by following UNM health protocols. The UNM Provost Administrative Directive on Mandatory Student Face Covering and Symptom Reporting of July 9, 2020 requires that all students on UNM-Main and UNM branch campuses wear face masks in the face-to-face classroom and on

campus unless they have a specific mask accommodation (confidentially documented with the Accessibility Resource Center). UNM Provost Administrative Directive is consistent with Governor Lujan Grisham's [Public Health Emergency Order](#) as amended, and the [Public Health Order of the New Mexico Health Secretary](#). It also requires daily participation in symptom screening through covidscreen, which will be sent via UNM e-mail.

*Acceptable masks and mask wearing in class:* A two-layer mask that covers the nose and mouth and that is cleaned regularly is acceptable. A face shield is not sufficient protection. It is vital that you wear your mask correctly, covering your nose and mouth. Removing your mask for an extended period to eat or drink in class violates the Provost Administrative Directive and endangers others.

*Mask Wearing Accommodation:* Individuals with a documented disability or diagnosis may seek accommodation with the UNM Accessibility Resource Center (ARC) (<https://arc.unm.edu/>). Individuals do not need to reveal private information to an instructor. ARC will require documentation of health requirements, which will be kept confidential. The instructor will be informed only of any need for accommodation.

*Consequences of not wearing a mask properly:* Unless you have an ARC-approved accommodation, if you don't wear a mask, or if you do not wear a mask properly by covering your nose and mouth, you will be asked to leave class. If you fail to wear a mask properly on more than one occasion, you can expect to be dropped from the class. If you insist on remaining in the classroom while not wearing a mask (without an ARC-determined accommodation), class will be dismissed for the day to protect others and you will be dropped from the class immediately.

This class may move to remote delivery at any time to preserve the health and safety of the students, instructor and community. Please check your UNM email or the Announcements page for this class on [learn.unm.edu](http://learn.unm.edu) regularly for updates about our class and please check <https://bringbackthepack.unm.edu> regularly for general UNM updates.

**GRADING:** Grading will be weighted as below:

Weekly labs (14 labs):	70%
Practical exam (rock and mineral identification):	10%
Participation/Attendance:	20%

- **Late work**

- turned in before graded labs are returned** -10%
  - turned in after graded labs are returned** -50%

- **No extra credit is given** (i.e. no one will have a chance to earn points that everyone does not have). The way to get "extra credit" is to do your best on the regular work!
- **Lab replacement:** a lab replacement field trip or self-guided fieldtrip will be offered in April. No additional make-up options will be available except for documented absences.

**ACCOMMODATIONS:** The University of New Mexico strives to be compliant with the ADA (Americans with Disabilities Act), which prohibits discrimination in the offering of programs and services on the basis of disability. The UNM committee on disabilities notes that disabled students should inform their instructor of special needs as soon as possible to ensure that those needs are met in a timely fashion.

## **Additional resources:**

We are currently living through one of the most challenging times in living memory, and you may be experiencing a lot of stress and anxiety. Fortunately, as a UNM student you have access to a wide range of resources designed to help students succeed in their academics and in their personal lives.

UNM-Valencia has a **Learning Center** that offers a wide range of tutoring options. Many of the larger classes at UNM-V have assigned tutors that are familiar with the class materials. GEOL 1110 is a small class and doesn't currently have an assigned tutor, but you can get help from other tutors with a science background. Check out the Learning center website here:

<https://valencia.unm.edu/campus-resources/the-learning-center/learning-center.html>

or make an appointment here: <https://esurvey.unm.edu/opinio/s?s=131505>

UNM also offers counseling and other mental health resources. Sometimes you just need to talk to someone who can help you process the events in your life and improve your mental state. Many of these resources can be accessed online. <https://shac.unm.edu/services/mental-health/index.html>

The UNM Office of Equal Opportunity (OEO) contains a wide range of resources that can help you succeed and keep our campus free from discriminatory acts and sexual violence. If you have witnessed or survived sexual discrimination or assault or a hate crime, the OEO website has reporting options and professionals who can answer your questions. <https://oio.unm.edu/>

The OEO also coordinates with UNM's Accessibility Resource Center where students can request accommodations for disabilities. <https://arc.unm.edu/>

A more complete listing of UNM resources related to diversity, safety and health and COVID-19 can be found here: <https://oio.unm.edu/resources/index.html>

**\*\*\*PLEASE BE SURE TO REMAIN IN EMAIL CONTACT FOR UPDATES AND NOTICES THROUGHOUT THE CLASS \*\*\***

See next page for class schedule

Last updated 1/15/2021		GEOL 1110 Physical Geology, Spring 2021 Ben Burnett		
		Tentative SCHEDULE		GEOL 1110L
Week	Section	Lecture Topics	Reading in <u>Earth, Portrait of a Planet</u>	Lab
19-Jan	Our Island in Space	What is science? Universe to Core - Journey to the center of the Earth	Preface, Ch. 1, 2	Quantitative Geoscience
26-Jan		Plate tectonics	Ch. 3, 4	Topo maps
2-Feb	Earth Materials	Minerals and Igneous rocks	Ch. 5, 6 Interlude A	Plate tectonics
9-Feb		Sediments, sedimentary rocks and metamorphic rocks	Ch. 7, 8 Interludes B, C	Mineral properties
16-Feb	Tectonic Activity on a Dynamic Planet	Finish rocks, begin Volcanoes	Ch. 9	Mineral identification
23-Feb		Review for exam <b>MIDTERM EXAM 1 on Feb 25</b>		Igneous Rocks
2-Mar		Earthquakes Seismic layering and mountain building	Interlude D Ch. 11	Sedimentary Rocks
9-Mar		History before history	Interlude E Ch. 12, 13	Metamorphic rocks
16-Mar		Spring break		
23-Mar	Earth Resources	Energy and mineral resources	Ch. 14, 15	Relative and numerical dating
30-Mar	Earth Surface Processes	Hydrologic cycle, review for exam <b>MIDTERM EXAM 2 on April 1</b>	Interlude F	Seismology
6-Apr		Mass movements and erosion by streams	Ch. 16, 17	Geologic maps
13-Apr		Oceans and groundwater	Ch. 19, parts of 18	Groundwater
20-Apr		Atmosphere, Climate	Ch. 20, parts of 21, 22	Surficial geology
27-Apr		Climate continued, Global change and human impacts	Ch. 23	Climate Change
4-May		Global change and human impacts	Ch. 23	Practical examination
11-May			<b>REVIEW AND FINAL EXAM</b> Final exam on Tuesday May 11 10:30-12:30	