



# Geology 100 Lecture Syllabus

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**Student Office Hours:** MW 10-11 am; T 3:30-4:30 pm or by appointment

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## Welcome

Geology is like a detective story and my goal is to teach you about the questions you can ask in order to understand the way that the Earth works. A detective learns things through observation and deductive reasoning. You will become Earth detectives, learning how to observe and think about processes and forces acting on the Earth and to critically evaluate the evidence in support of those processes. I hope that you will learn the ways in which we, as humans, can change the face of the Earth and how we can make decisions that may prevent detrimental changes from taking place. You will also learn ways in which forces bigger than all of us and out of our control shape the Earth as we know it and how they shaped the Earth billions of years ago. Geology is scientifically unique because it draws on our knowledge of the physical, chemical, mathematical and biological world to help us to say something about the world we live on. Therefore, no matter what your background, you have something to contribute to the class. This is part of the reason many of the people who study geology find it so fascinating.

## Course Overview: *what will I need?*

**Textbook:** An Introduction to Geology; written by Chris Johnson, Matthew D. Affolter, Paul Inkenbrandt, Cam Mosher, Salt Lake Community College – 2017.  
<http://opengeology.org/textbook/>

**Mineral Kit:** You must purchase a mineral kit at the bookstore. It should be about \$10.00.

**Computer:** You will need access to a computer and the internet throughout this course and there are many labs available across campus. You will also need access to a word processing program, such as Word. You have free access to Word through Office 365. Login to your BearMail to access Office 365 <https://www.unco.edu/current-students/>. You will be asked to complete most assignments as a Word document. You will upload assignments through Canvas. I will ask that it is in a format that I can open (.doc, .docx, Google Docs), or I will be unable to accept the document and you will receive no points for the assignment. I am happy to answer general questions about technology, but cannot function as technical support. You may contact Information Management and Technology for more help <https://www.unco.edu/information-management-technology/>.



## The Classroom: *how will it work?*



Documents and assignments related to the class will all be posted on Canvas <https://www.unco.edu/canvas/>. I recommend looking around on the course site to locate all the items you will need, and setting your notifications as you prefer (*did you know you can get text message notifications via Canvas?*). Each week will have a different module. Any updates/announcements will be made through Canvas and your bears.unco.edu email. Please make sure you check Canvas and your bears.unco.edu email regularly. <https://www.unco.edu/current-students/>. You can even access Office 365 from Canvas! I will strive to respond to emails within 24 hours, but may not do so on weekends. I will generally give you an entire week to complete assignments. Plan on checking Canvas at the beginning of the week so you can anticipate what will be due and plan accordingly. I am happy to help you on assignments (see page 4), but if you wait to contact me until the day of the deadline I may be unable to assist you and your grade may suffer consequently. Please don't wait until the last minute.

## The Classroom: *what will I do?*

Geology 100 has two basic components, a lecture and a laboratory. The laboratory and lecture sections are scheduled at separate times in separate rooms and you **MUST** attend both lecture and lab sections in order to be successful within the class.

### Lecture



The lectures provide important information and explanations of key concepts found within the text. You will be asked to be an active participant and will be expected to talk with your peers and engage in Kahoot! and other activities. Good note taking, attendance, keeping up with reading and assignments, and a positive learning attitude generally are sufficient requisites for success in this class. If you are doing all of these things and are still experiencing difficulties, see me for help. Often a small adjustment in your approach can make a big difference. Don't wait until it is too late!

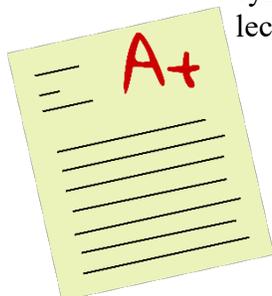
### Lab



The lab component of geology 100 is designed for you to develop a deeper understanding of concepts by experiencing phenomena directly, apply concepts to new situations and solve authentic problems, develop thinking skills (critical, quantitative, qualitative), develop experimental skills (e.g., design, observation, and use of equipment), practice working in groups, and develop an appreciation for research in the field. ALL geology 100 labs are in Ross Hall of Science Room# 3250 (third floor of Ross in the south wing of the building).

## UNC Letter Grade System\*:

Your final grade will be equally weighted (50/50) on your separate lecture and laboratory grades. Your performance in both is important! You will receive a separate syllabus for lab. Your lecture grade will consist of: 1) lecture assignments (30%), 2) lecture quizzes (30%), 3) a midterm (15%), and 4) a final exam (25%).



Letter	GPA	Percentage
A	4.000	93.0 – 100
A-	3.667	90.0 – 92.9
B+	3.334	87.0 – 89.9
B	3.000	83.0 – 86.9
B-	2.667	80.0 – 82.9
C+	2.334	77.0 – 79.9
C	2.000	73.0 – 76.9
C-	1.667	70.0 – 72.9
D+	1.334	67.0 – 69.9
D	1.000	63.0 – 66.9
D-	0.667	60.0 – 62.9
F	0	0 – 59.9

\*If you are near the cut off between letter grades, I have the discretion to round up or down depending on factors such as class participation

## Schedule:

Week	Date	Lecture Topic	Lecture Assignment	Reading Assignment
1	1/13/2020	Introduction and Continental Drift	Plate Tectonics Activity Assigned Friday	Ch. 1
2	1/20/2020	Internal Structure of Earth and Plate Tectonics	Plate Tectonics Activity Due Friday	Ch. 2
3	1/27/2020	Earthquakes	Lecture Quiz 1	Ch. 9
4	2/3/2020	Introduction to Silicate Minerals	Google Earth Volcanoes Assigned Friday	Ch. 3
5	2/10/2020	Volcanoes and Volcanic Rocks		Ch. 4
6	2/17/2020	Metamorphism and Metamorphic Rocks		Ch. 6
7	2/24/2020	Weathering and Erosion	Google Earth Volcanoes Due Friday	Ch. 5
8	3/2/2020	Rivers and Flooding	Midterm Friday	Ch. 11
9	3/9/2020	Landslides and Mass Wasting	Soils Assignment Assigned Friday	Ch. 10
—	3/16/2020	<i>Spring Break</i>		
10	3/23/2020	Sedimentary Rocks and Relative Age	<i>Lecture Quiz 2</i>	Ch. 7
11	3/30/2020	Absolute Dating and Geologic Time	Soils Assignment Due Friday	TBA
—	4/4/2020	<i>Field Trip 04/04/2020: Reserve a Spot</i>		
12	4/6/2020	Past Climate Record and Fossil Record	Switch Energy Assignment Assigned Friday	Ch. 8
13	4/13/2020	Water Resources and Management		TBA
14	4/20/2020	Energy Resources and Climate Change	Lecture Quiz 3	Ch. 16
15	4/27/2020	Climate Change	Switch Energy Assignment Due Friday	Ch. 15
—	5/6/2020	<i>Final: May 6th</i>	10:45am – 1:15pm	—

## Student Support

### *What should I do to be successful in this course?*

- Complete all assignments. Students who complete every assignment fully generally receive a C or better. If you have incomplete or missing assignments, you may not pass the course.
- Be proactive about seeking help and clarity—this is one of the most important things you can do.
- Expect to put time into this course. For a three credit course such as this, it is expected that you should dedicate two hours of time out of class for every one hour in class. That means six hours of time outside of class per week for this course alone.
- Practice good study skills <http://www.unco.edu/university-101/study-skills/>.
- Keep track of all the assignment due dates—there are a lot of them! Use the calendar in Canvas, check Canvas regularly.
- Tutorial Services (TS) provides free peer-led tutoring services and academic skills sessions to UNC students enrolled in undergraduate-level courses. TS is located in the lower level of Michener Library (L-149), in the Division of Student Success. Call TS at 970-351-1904 or visit <https://www.unco.edu/tutoring/>.
- If you are struggling on writing assignments, visit the Writing Center: (970) 351-2056 <https://www.unco.edu/writing-center/>.
- If you want to give me anonymous feedback about the course, slip a note in my mailbox (Earth and Atmospheric Sciences main office lounge in Ross 3235).



### *What should I do if I need help?*

- You will likely run into situations where you are confused by concepts, assignments, or what is expected of you. I want you to get the help you need to be successful in this course and beyond.
- You can visit me in my office hours to discuss anything you are confused about, including course concepts, assignments, expectations, questions about grading, or challenges you are having in the course. If you feel more comfortable, bring a classmate or friend. Since this is an online course, I can arrange a Zoom meeting as well.
- If my available office hours don't work for you, you can call (XXX-XXX-XXXX) or email me to figure out another time that works for both of us. You can also ask questions through email or leave me a message and I'll get back to you. I am admittedly easiest to reach via email or my office hours.
- If my office door is open, you are welcome to come in. There are times outside of my designated office hours I may have to ask you to come back at a different time or schedule an appointment.



### *Additional student resources*

- Some students may be aware of factors that adversely affect their learning, and will be familiar with requesting accommodations. Others may not know they can ask for accommodation to improve their success. It is the policy and practice of the University of Northern Colorado to create inclusive learning environments. If there are aspects of the instruction or design of this course that present barriers to your inclusion or to an accurate assessment of your achievement (e.g. time-limited exams, inaccessible web content, use of videos without captions), please communicate this with your professor and contact Disability Resource Center (DRC) to request accommodations. Office: (970) 351-2289, Michener Library L-80. Students can learn more about the accommodation process at <https://www.unco.edu/disability-resource-center/>.
- If you don't qualify for DRC support, there are still things you can do to be proactive about seeking what you need. Students face both academic and personal issues while at UNC. Sometimes, personal issues become intense and may interfere with school performance and personal happiness. The Counseling Center provides a place for students to talk about issues or concerns that are important to them. Counseling services are free to UNC students. Call (970) 351-2496 or visit <https://www.unco.edu/counseling-center/> to find out more. Additionally, the Student Outreach and Support (SOS) office fosters student development, engagement, and success by assisting students during difficult circumstances which may include medical, mental health, personal or family crisis, illness or injury. SOS can help communicate with me issues that may arise and coordinate additional resources for you. Visit <http://www.unco.edu/dean-of-students/offices-resources/student-outreach-support/>.



## Policies and Additional Information

**Late Policy:** Assignments, Discussions, Quizzes, and Exams must be done by the deadline assigned through Canvas. After this time, the assignment will close and you will not be able to access it. If you have an excusable absence or other circumstance, you may contact Student Outreach and Support <http://www.unco.edu/dean-of-students/offices-resources/student-outreach-support/>. I will work with SOS and you to discuss appropriate action. Without an excusable absence, I will not accept late work.

**Extra Credit:** No extra credit will be given so please do not ask.

**Academic Integrity:** One of the student responsibilities at UNC is to act in accordance with commonly accepted standards of academic conduct. You are expected to practice academic honesty in every aspect of this course. Students who engage in academic misconduct are subject to grading consequences with regard to this course and/or university disciplinary procedures through the Office of Community Standards and Conflict Resolution. If you are found to be cheating or plagiarizing, you will receive a zero for the assignment in question. Depending upon the nature of the infraction, you may also receive a grade of F for the course and be referred to the University for disciplinary action. Texting (or with other methods/technology) questions and answers is cheating. Copying work is cheating. Do your own work and write things in your own words.

**Statement on Equity and Inclusion:** The University of Northern Colorado embraces the diversity of students, faculty, and staff, honors the inherent dignity of each individual, and welcomes their unique perspectives, behaviors, and world views. In this course, people of all races, religions, national origins, sexual orientations, ethnicities, genders and gender identities, cognitive, physical, and behavioral abilities, socioeconomic backgrounds, regions, immigrant statuses, military or veteran statuses, size and/or shapes are strongly encouraged to share their rich array of perspectives and experiences. Course content and campus discussions will heighten your awareness to each other's individual and intersecting identities. If you would like to report an incident or learn more about identity-based discrimination/harassment, please visit [www.unco.edu/institutional-equity-compliance](http://www.unco.edu/institutional-equity-compliance). If you are perceived to inflict an oral or physical threat or altercation to someone based on any of the above criteria, you will be asked to leave and we may take official action through the Office of Community Standards and Conflict Resolution. If you have a nickname, or a preferred pronoun that is different from what may be assumed, please let your instructor know and they will do their best to follow your preferences.

**Sexual Misconduct:** The University of Northern Colorado is committed to providing a safe learning environment for all students that is free of all forms of discrimination and sexual harassment, including sexual assault, domestic violence, dating violence, and stalking. If you (or someone you know) has experienced or experiences any of these incidents, know that you are not alone. UNC has staff members trained to support you in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, helping with legal protective orders, and more.

Please be aware all UNC faculty and most staff members are "responsible employees," which means that if you tell a faculty member about a situation involving sexual harassment, sexual assault, dating violence, domestic violence, or stalking, they must share that information with the Title IX Coordinator, Larry Loftin. Larry or a trained staff member in the Office of Institutional Equity and Compliance (OIEC) will contact you to let you know about accommodations and support services at UNC as well as your options for pursuing a process to hold accountable the person who harmed you. You are not required to speak with OIEC staff regarding the incident; your participation in OIEC processes are entirely voluntary.

If you do not want the Title IX Coordinator notified, instead of disclosing this information to your instructor, you can speak confidentially with the following people on campus and in the community. They can connect you with support services and help explore your options now, or in the future.

- UNC's Assault Survivors Advocacy Program (ASAP): 24 Hr. Hotline 970-35-4040 or [www.unco.edu/asap](http://www.unco.edu/asap)
- UNC Counseling Center: 970-351-2496 or [www.unco.edu/counseling](http://www.unco.edu/counseling)
- UNC Psychological Services: 970-351-1645 or [www.unco.edu/cebs/psych\\_clinic](http://www.unco.edu/cebs/psych_clinic)

If you are a survivor or someone concerned about a survivor, or if you would like to learn more about sexual misconduct or report an incident, please visit [www.unco.edu/sexual-misconduct](http://www.unco.edu/sexual-misconduct) or contact the Office of Institutional Equity and Compliance (970-351-4899). OIEC is located on the third floor of the University Center in room 3060.



**Student Conduct Code:**

<http://unco.smartcatalogiq.com/2013-2014/Undergraduate-Catalog/Undergraduate-Information-and-Policies/Student-Resources/Student-Engagement-and-Dean-of-Students-Office-of/Student-Conduct-Code>

**Student Rights and Responsibilities:**

<http://www.unco.edu/dean-of-students/offices-resources/student-rights-responsibilities/>

**Student Support:**

Research shows that college students experience food insecurity at higher rates than the American household rate, and that food insecurity can negatively impact academic performance and persistence. In recognition of this problem, UNC offers assistance to students facing food insecurity through an on- campus food pantry. The Bear Pantry is located in University Center 2166, and is open for regular hours throughout the semester. Please visit [www.unco.edu/bear-pantry](http://www.unco.edu/bear-pantry) for more information.

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is also urged to contact Student Outreach and Support (SOS) for assistance. SOS can assist students during difficult circumstances which may include medical, mental health, personal or family crisis, illness or injury. SOS can be reached at [sos@unco.edu](mailto:sos@unco.edu) or via phone at 970-351-2796.

## LAC and gTP Curriculum:

The Colorado Commission on Higher Education has approved GEOL 110 for inclusion in the Guaranteed Transfer (GT) Pathways program in the GT-SC2 category. For transferring students, successful completion with a minimum C- grade guarantees transfer and application of credit in this GT Pathways category. For more information on the GT Pathways program, go to <http://higherred.colorado.gov/academics/transfers/gtpathways/curriculum.html>.

**LAC6 Student Learning Outcomes:**

1. Explain the fundamental concepts within the scientific field of study at the introductory level.
2. Explain relevance of the science content to real world topics affecting humanity.
3. Evaluate the quality of evidence in a scientific argument
4. Select or Develop a Design Process. a. Select or develop elements of the methodology or theoretical framework to solve problems in a given discipline.
5. Analyze and Interpret Evidence. a. Examine evidence to identify patterns, differences, similarities, limitations, and/or implications related to the focus.
6. Analyze and Interpret Evidence. b. Utilize multiple representations to interpret the data.
7. Draw Conclusions. a. State a conclusion based on findings.
8. Interpret Information. a. Explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words).
9. Represent Information. a. Convert information into and between various mathematical forms (e.g., equations, graphs, diagrams, tables, words).

**GT Pathways Content Criteria:**

1. Develop foundational knowledge in specific field(s) of science.
2. Develop an understanding of the nature and process of science.
3. Demonstrate the ability to use scientific methodologies.
4. Examine quantitative approaches to study natural phenomena.
5. Perform hands-on activities with demonstration and simulation components playing a secondary role.
6. Engage in inquiry-based activities.
7. Demonstrate the ability to use the scientific method.
8. Obtain and interpret data, and communicate the results of inquiry.
9. Demonstrate proper technique and safe practices.



A UNC SLOs, GT Pathways SLOs/Competencies	B Course Learning Outcomes and/or Course Content	C Assessment Method
1. Explain the fundamental concepts within the scientific field of study at the introductory level. (UNC)	Fundamental concepts include topics related to abiotic factors of earth systems (rain, wind, temperature, soil, pollution, climate change, and earth materials). Material is presented throughout the course in the form of classroom lectures, labs, online activities, primary literature readings and group projects.	Exam questions, laboratory experiments, data collection methods, group projects, and weekly quizzes
2. Explain relevance of the science content to real world topics affecting humanity. (UNC)	Describe impacts of natural and anthropogenic climate change and its effects on society. Describe how minerals and rocks provide economic resources. Understand the problems associated with energy and energy distribution.	Group project, in-class activities, and data collection
3. Evaluate the quality of evidence in scientific argument. (UNC)	Evaluate the quality of evidence supporting an energy transition by exploring the differences between traditional and alternative sources	Exam questions and laboratory exercises
4. Select or Develop a Design Process. a. Select or develop elements of the methodology or theoretical framework to solve problems in a given discipline. (GTP IA4.)	Select and design experiments to show how earth scientists make predictions concerning natural disasters	Laboratory exercises
5. Analyze and Interpret Evidence. a. Examine evidence to identify patterns, differences, similarities, limitations, and/or implications related to the focus. (GTP IA5.)	Identify and analyze seismic, volcanic, and tectonic patterns and synthesize information to understand how to predict these types of events	Laboratory exercises and in-class activities
6. Analyze and Interpret Evidence. b. Utilize multiple representations to interpret the data. (GTP IA5.)	Be able to use flowcharts and spreadsheets to understand complex processes and arrive at a scientific conclusion.	Laboratory exercises
7. Draw Conclusions. a. State a conclusion based on findings. (GTP IA6.)	Be able to make conclusions based off of physical observations of the night sky and earth/sun relationships	In-class activities and exam questions
8. Interpret Information. a. Explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words). (GTP QL 1.)	Use data sets to group data and show how variables can how can variables affect the outcome of an experiment	Laboratory exercises
9. Represent Information. a. Convert information into and between various mathematical forms (e.g., equations, graphs, diagrams, tables, words). (GTP QL 2.)	Develop tables on spreadsheets with mathematical formulas, then graph that data. This is done with meteorological, geological, and astronomical based formulas.	Group projects, exam questions, laboratory exercises, and in-class activities

