

# **GEOL 1313: Introduction to Physical Geology**

**Fall 2022, CRN 13211**

**Date/Time: MW, 10:30-11:50 AM**

**Location: Physical Sciences Building, Room 208**



## **University of Texas at El Paso (UTEP)**

**Department of Earth, Environmental and Resource Sciences**

**Instructor:** Dr. Mark Engle ([maengle@utep.edu](mailto:maengle@utep.edu))

**Office:** Geology Building 302A

**Office hours:** Monday, 9:00 - 10:00 AM in my office. Otherwise, email me.

**Teaching Assistant:** Jose Talamantes ([jmtalamantes2@miners.utep.edu](mailto:jmtalamantes2@miners.utep.edu))

### **Course Description**

Physical geology is the study of earth materials, structures, and events. We begin by focusing on plate tectonics, minerals as a building unit for rocks, and igneous rocks. We then turn to sedimentary and metamorphic rocks, deformation, the techniques used for age determinations, and earthquakes and crustal deformation. The final part of the semester takes the basic knowledge we have built and explores weather and climate, surface water and groundwater, and Earth resources.

### **Learning Outcome**

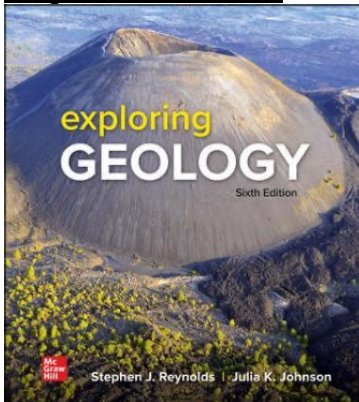
At the end of the course, students will:

- Understand the interrelationships between Earth processes and materials
- Recognize various tectonic settings on Earth
- Predict the nature of seismic and volcanic activity at the various tectonic settings
- Understand plate tectonics and the concept of a dynamic planet
- Understand what drives geologic processes
- Identify rocks and minerals by their physical properties and relate them to their environment of formation
- Understand the rock cycle, the water cycle, and the life cycle (evolution)
- Appreciate the variety of temporal and spatial scales of cycles
- Apply physics, chemistry, biology and mathematics to solve geologic problems
- Draw connections between geology and human events

## **Learning Modules**

This course is designed using a modular format—that is, each week is “packaged” as a single module so that all the materials, lectures, submission areas, discussion posts are in one area for a given week. There will be a forum or message board contained in each module, that will allow you to ask questions or discuss the week’s material. It’s likely that if you are confused or have questions, others in the class are too. So, I would request that you upload questions there and the TA and I will check there regularly. Of course, we are also available for individual questions via e-mail or through office hour meetings. I may also add information about current events related to geology there as well.

## **Required Materials:**



1) Exploring Geology, 6<sup>th</sup> Edition, by Steve Reynolds and Julia Johnson.

2) Access to McGraw-Hill’s Connect for the Textbook. ***If you purchase access to McGraw-Hill’s Connect, it includes access to an on-line version of the textbook.*** Get access to Connect using the link in BlackBoard.

## **Using McGraw-Hill’s Connect and SmartBook:**

Connect is an online homework and learning management platform that is linked to your textbook. Connect uses technology that adapts content to your skill level to make more-efficient use of your study time and create a more-effective reading experience. This tool helps you stay organized with assignments, target difficult material to practice and improve your skills, review for exams, and track your performance. The assignments within the Connect framework are SmartBook assignments, which we have found are particularly helpful. The SmartBook assignments are integrated into BlackBoard and you’ll need to register within BlackBoard by following this [video](#).

If you are having trouble registering for or accessing Connect, please contact McGraw-Hill Education’s Customer Support.

Website: [www.mhhe.com/support](http://www.mhhe.com/support) | Phone: (800) 331-5094

## **COVID-19 Precaution Statement**

Please stay home if you have been diagnosed with COVID-19 or are experiencing COVID-19 symptoms. If you are feeling unwell, please let me know as soon as possible,

so that we can work on appropriate accommodations. If you have tested positive for COVID-19, you are encouraged to report your results to [covidaction@utep.edu](mailto:covidaction@utep.edu), so that the Dean of Students Office can provide you with support and help with communication with your professors. The Student Health Center is equipped to provide COVID-19 testing.

The Center for Disease Control and Prevention recommends that people in areas of substantial or high COVID-19 transmission wear face masks when indoors in groups of people. The best way that Miners can take care of Miners is to get the vaccine. If you still need the vaccine, it is widely available in the El Paso area, and will be available at no charge on campus during the first week of classes. For more information about the current rates, testing, and vaccinations, please visit [epstrong.org](http://epstrong.org).

### **Attendance/Lectures:**

Attendance, which is key to success in this class, is mandatory. Given on-going and very real concerns about COVID-19, please do not physically come to class if you are feeling ill. Rather, please email me at least 24 hours prior to the start of class and I will forward you a Zoom link. However, I will not be recording the Zoom meetings and will not continuously provide them. I have found that students who attend remotely generally perform much worse in the class than students that attend the live lectures.

To encourage attendance, I will describe assignments in the lectures (either a concept sketches or something else). In addition, I will use the iClicker software to ask questions of you during class. Your response to those questions will be recorded and included in your final grade.

### **Course Communication:**

There are a number of ways we can keep the communication channels open:

- **Office Hours:** My office hours are on Mondays from 9:00 A.M.-10:00 A.M. Mountain Time. If you would like to meet at a different time or via Zoom, just email me.
- **Email:** UTEP e-mail is the best way to contact me ([maengle@utep.edu](mailto:maengle@utep.edu)). I will make every attempt to respond to your e-mail within 24-48 hours of receipt. When e-mailing me, be sure to email from your UTEP student account and please put the course number in the subject line. In the body of your e-mail, clearly state your question. At the end of your e-mail, be sure to put your first and last name, and your university identification number. Note that I cannot discuss your grades or other sensitive information to a non-UTEP email address.
- **Announcements:** Check the Blackboard announcements frequently for any updates, deadlines, or other important messages.

### **Course etiquette:**

Exams will be open-book from your lecture notes and concept sketches (this does not include notes from your labs or the book itself). Therefore, it is very important that you take notes during the lectures.

### **Grading:**

1. SmartBook assignments, available through McGraw-Hill Connect via BlackBoard (1 per week). These assignments will be due on Monday at 10 AM for the week assigned (unless Monday is a holiday, in which case they will be due on Wednesday at 10 AM). They are intended to get you started with learning the material in the chapters prior to lecture so that we can spend lecture time on advanced topics. Each SmartBook assignment will be worth 10 points towards your final grade. **There will be no make-ups or extensions on SmartBook deadlines! Please see extra credit section below as an alternative.**

2. Concept sketches or other assignments (1 per week, most weeks). They will be announced during the lectures to encourage lecture attendance. Concept sketches can be hand-drawn or drawn digitally using a program such as Inkscape (free from Inkscape.org) or Adobe Illustrator and will be graded both on their ability to capture key parts of the drawing and for explanatory text describing the drawing. The weekly assignments will need to be uploaded to Blackboard by Friday at 5 PM for the week assigned. Please adjust the file size/image resolution to be readable, but not extremely high resolution to make files too large (e.g., > 10 MB). Also, please don't submit the pictures as videos. Each concept sketch or in-class assignment will be worth 10 points towards your final grade. **There will be no make-ups or extensions on assignments! Please see extra credit section below as an alternative.**

3. During regular lectures I will ask questions of you using the cloud-based iClicker software. This will help me understand what you know, give everyone a chance to participate in class, and increase how much you learn when we are in class together. This will also provide you with feedback on how well you are comprehending course concepts and help you master challenging concepts. The use of iClicker in this course will account for 100 points toward your final grade.

You are required to bring a device to participate in my iClicker sessions during class. You can participate with a smartphone, tablet, or laptop. It is your responsibility to set up your iClicker student account in a timely fashion, as well as making sure your device is working properly. If you do not have an existing iClicker student account then you will need to create one to be able to participate in class. You will also need to connect to either UTEP's Wi-Fi (UTEPSecure) or to your mobile data plan while using iClicker on campus. **There will be no make-ups or extensions on assignments! Please see extra credit section below as an alternative.**

4. Four online exams will be given throughout the semester on the specified date. In addition, a comprehensive final exam will be given on the date determined by the University (see Course Outline below). The 4 highest exam scores will be used to determine the grade for this category. Each exam will cover the material from that segment of the lecture, except for the comprehensive final exam. The dates for the exams are listed in the schedule at the end of the syllabus. **Missed Exams:** You may drop one exam for whatever reason and take the final to replace it. **There will be no makeup exams!!!**

## Extra Credit

There are three extra credit projects that are each worth 10-20 points towards your grade. *Please note the assignment deadlines.*

1. **VIDEO SUMMARY (Due Sept. 26 at 5 PM):** Watch a Nova, Discovery, National Geographic, or other television, video, documentary, or online special, with a geology focus. Write a 2-page summary (1.5 spaced, size 11 font, 1" margins), including any relevant information and your thoughts on it. Worth 10 points.
2. **RESEARCH PAPER (Due Oct. 17 at 5 PM):** Pick an item you own that is composed of geologic materials and write a 3-page research paper (1.5 spaced, size 11 font, 1" margins, length not including references, figures, or tables) about it. The report needs to include a list of: 1) what geologic materials it is made of (e.g., car tires are made of rubber, which comes from oil); 2) what countries the geologic materials are mined, processed, and recycled in (Google the U.S. Geological Survey's Mineral Yearbooks); 3) where the item was made and how it was transported to you (think about what fuels were used to get it to you); and 4) can the item be recycled, is it recycled and if so, where is it recycled?; and 5) how this exercise had made you re-think your behaviors. Make sure to include a title, figures or photographs (1 minimum), and references (3 minimum, 2 may be webpages). Make sure to proofread your paper. Worth 20 points.
3. **GEOLOGY PAMPHLET (Due Nov. 21 at 5 PM):** Pick a local hiking trail, nature path, or scenic drive in the El Paso region. Create a pamphlet describing the geology along the trail that could be used by others to learn about local geology. Your pamphlet should include a title, text, photos, figures, and references. You should go hike the trail (which will be the fun part!) and observe the rocks, sediments, or other geologic features you observe along your hike. Worth 20 points.

**Your final grade is based on your total score from the SmartBook assignments (10 points each), in-class assignments/concept sketches (10 points each), iClicker participation (100 total points) and exams (50 points each; only the score from the 4 highest exams will be counted).**

Grading scale: 90%-100%=A; 80%-89.9%=B; 70%-79.9%=C; 60%-69.9%=D; <60% =F

Getting dropped from class: If you are severely failing the class (grade <40%) at the Drop Date (October 28) or miss 3 or more assignments in a row, I may drop you course. If you would like to remain in the class and are under one or more of those conditions, please contact me prior to the drop date.

### **Students with Disabilities**

If you have a disability or if you are experiencing learning difficulties, please contact the Center for Accommodations and Support Services (CASS) or visit their portal ([cassportal.utep.edu](http://cassportal.utep.edu)). You may contact them Monday through Friday 8:00a.m.-5:00p.m.

Phone:(915) 747-5148. Union Building East Room 106 [cass@utep.edu](mailto:cass@utep.edu). They provide any necessary accommodations. You should also meet with me in order to facilitate your needs. You are expected to provide documentation of your disability in order to make special arrangements in this class.

### **Academic Misconduct**

Academic dishonesty will be not tolerated in this class (please refer to the student conduct code handbook for details regarding university policy and definitions). Dishonesty includes, but is not limited to, plagiarism on term papers, unauthorized notes brought into an exam; copying answers from another student or letting another student copy your answers. The penalty for the first offense will be a grade of zero points on the exam or assignment. Penalty for the second offense will be an F for the course.

### **Helpful Hints:**

- Attend lectures (online or in-person)!
- Review material regularly - multiple short study sessions over a period of weeks are more effective than a single "cram" the night before an exam.
- Form a study group. Each member should study material on their own before meeting with the group for discussion and comparison.
- Write out definitions and answers to essay questions. Use the board in an empty classroom or your class notebook. Don't just passively read your notes!
- Ask questions in Blackboard you don't know or are confused.
- Combine class notes, textbook, and web materials when studying. Each provides a different perspective.
- Pay attention to the news and current events to see how they relate to geology.
- Read your text in SMALL doses; don't plan on one massive reading session the night before the exam.
- Be sure to look at the pictures and diagrams in the text.

### **Campus Carry**

Persons holding a Concealed Handgun License can lawfully carry their handgun into a UTEP classroom as long as the gun remains concealed. Open carry remains prohibited on campus. In other words, none of us should see (or be able to tell that there is) a gun at UTEP. Call the University Police at 747-5611 or dial 911 if you see any individual on campus with a handgun or other type of weapon. For more information on campus carry, see [<http://sa.utep.edu/campuscarry/>]; for more information on overall campus safety, see [<http://admin.utep.edu/emergency>].

### **iClicker**

In order to participate in my iClicker sessions and ensure that your grades are properly reflected in Blackboard, see below for instructions:

- **Log into Blackboard and click on the course for this class. Search for the iClicker icon on the Learning Modules Tab and click on it.**
  - Sign into your iClicker student account from the window that opens.

- If you do not have an iClicker student account, create one by clicking "**Sign Up!**" It's free to create an account. You should **use your university email address** ([username@miners.utep.edu](mailto:username@miners.utep.edu)) when creating your account. When asked to register a remote device, **choose not at this time or skip**.
- **If you already have an existing account, DO NOT create a new one. If you do not remember your account email or password please contact the [UTEP Technology Support HelpDesk](#).**
- Clicking the iClicker link in my Blackboard course will ensure your iClicker grades show up in my Blackboard gradebook when I sync the grades.
- This will also add my iClicker Cloud course to your iClicker student account so you'll be ready to participate in class.
- It is your responsibility to regularly check your iClicker grades for any discrepancies and bring them to my attention within 48 hours.

**Note:** Upon signing up for a **new** account you will see a message about a 14 day free trial. You **will not** need to purchase a subscription after the 14 day free trial is over because the use of iClicker is provided to you for free by UTEP.

### **How to participate in my iClicker sessions during each class.**

- Each time our class meets, make sure you have selected my course from the main screen of your iClicker Student account.
  - When I start a session, click the **Join** button that appears on your screen, then answer each question I ask in iClicker.
  - For all question types except Multiple Choice, make sure you press **Send/Enter**.

### **Need help with your iClicker student app?**

- If you are having issues connecting to the iClicker student app, check out these [iClicker Connectivity Tips](#).
- Find answers to many of your questions by visiting [iclicker.com/support](http://iclicker.com/support) at any time.
- Contact the [UTEP Technology Support HelpDesk](#) or email [blackboard@utep.edu](mailto:blackboard@utep.edu)

## COURSE OUTLINE

Week (date indicates Monday of that week)	Topic	Reading assignment, chapter	SmartBook Assignment (due Monday at 10 AM, unless otherwise noted)*
Week 1 (8/22)	Introduction and Nature of Geology	1	None
Week 2 (8/29)	Plate Tectonics (1 <sup>st</sup> SmartBook assignment due on 8/29 at 10 AM)	3	3
Week 3 (9/5)	Earth materials; Labor Day (9/5) – no lecture	4	4 (Due on 9/7)
Week 4 (9/12)	Magma and igneous activity	5	5
Week 5 (9/19)	Sedimentary rocks; <b>Exam 1 on 9/21</b>	7	7
Week 6 (9/26)	Deformation and metamorphism; <i>Extra Credit #1 due on 9/26</i>	8	8
Week 7 (10/3)	Geologic time	9	9
Week 8 (10/10)	Seafloor, mountains, and basins; <b>Exam 2 on 10/12</b>	10, 11	10, 11
Week 9 (10/17)	Earthquakes and Hazards, Earth interior; <i>Extra Credit #2 due on 10/17</i>	12	12
Week 10 (10/24)	Climate and weather; <i>Drop day is Oct. 28</i>	13	13
Week 11 (10/31)	Weather, soils, and unstable slopes	15	15
Week 12 (11/7)	Streams and flooding; <b>Exam 3 on 11/9</b>	16	16
Week 13 (11/14)	Water resources	17	17
Week 14 (11/21)	Energy and mineral resources; Thanksgiving Holiday (11/24-11/25) - no lecture; <i>Extra Credit #3 due on 11/21</i>	18	18
Week 15 (11/28)	Review on 11/28; <b>Exam 4 on 11/30 (last day of this class)</b>		
Final Exam	12/9, 1:00PM-3:45PM		

\* The weekly SmartBook assignments are included in the weekly module in BlackBoard for the corresponding week. For example, the first SmartBook assignment is due at 10AM on Monday of week 2 and can be found within the BlackBoard module for week 2 (which will be available at least 1 week in advance of the due date).

UPDATED 8/19/22