

9-2013

# GEO 101N.01: Introduction to Physical Geology

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## **Introduction to Physical Geology (GEO 101N, Sect. 01, 3 credits) Fall, 2013**

Instructor: Dr. Kathleen Harper  
email: [kathleen.harper@umontana.edu](mailto:kathleen.harper@umontana.edu)

Office: CHCB 371  
Phone: 243-4720

**Class Meetings:** MWF from 11:10 AM - 12:00 PM, CHCB 131

**Office Hours: Monday and Wednesday; 1-2PM or by appointment.** Please do not hesitate to contact me to arrange to meet at another time.

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**Course Description:** This course is an introduction to geosciences; the study of how the Earth works. Humans around the world are impacted everyday by geologic hazards and by access to natural resources. This course will help you to develop a new understanding of the physical processes that have gone into making the Earth as we know it, and an awareness of how Montana fits into the global picture. This knowledge will help you make intelligent decisions about issues that affect humankind.

**Course Objectives:** After completing this course, you will be able to:

- describe, analyze, and assess the geologic features, events, and processes that impact your daily life
- use evidence (e.g., from graphs, rocks, maps, etc.) to support an interpretation or explain a concept
- understand the general principles associated with the discipline of geosciences including:
  - 1) Geoscientists use repeatable observations and testable ideas to explain and understand our planet
  - 2) Earth is 4.6 billion years old and has a complex and varied history
  - 3) Earth is a complex system of interacting rock, water, air, and life
  - 4) Earth is continuously changing, primarily due to active plate tectonics
  - 5) Humans depend on Earth for resources that are formed by geologic processes
  - 6) Natural hazards pose risks to humans and must be understood in order to minimize and mitigate risks
  - 7) Humans significantly alter the Earth and geologic processes have in turn impacted the development of human civilization

**Required materials:**

1) **Exploring Geology (3<sup>rd</sup> Edition)** with CONNECT Plus 1-semester Access Card, Reynolds, Johnson, Morin, and Carter (ISBN: 978-0077598570). Alternatively, ebook and/or online access to CONNECT website can be purchased online.

2) **Iclicker remote (classroom response system)** You may purchase an iclicker remote at the bookstore (ISBN: 0716779390). Alternatively, a web version can be used via paid subscription on a smart phone, tablet, or laptop – To subscribe and download apps, go to [www.iclickergo.com](http://www.iclickergo.com)

**Textbook:** Access to the textbook is essential for this course. You may purchase a paper book or you may purchase an ebook through McGraw-Hill Connect. To do this, go to the section website: [http://connect.mcgraw-hill.com/class/k\\_harper\\_fall\\_2013\\_section\\_1](http://connect.mcgraw-hill.com/class/k_harper_fall_2013_section_1) You can sign up for a 3-week free trial for the ebook and online access if you would like to try out the ebook. A paper textbook is also on reserve at Mansfield Library. It is most effective for your learning to read chapters of the text prior to the class in which they will be discussed.

**iclicker:** The iclicker will be used at every class period. The purpose of the iclicker is to give the instructor feedback on student understanding as well as to monitor participation. It must be the iclicker model – other brands will not work. Course credit for clicker use in class will begin **Wednesday, September 5th**.

Use your iclicker once in class. Then go to the website ([www.iclicker.com](http://www.iclicker.com)) and register it. Use your NetID when registering your clicker and enter your name as it appears in the official university directory.

**Note that using another student's clicker in class is considered academic dishonesty – this will result in both students receiving zero iclicker points for the semester and will be subject to academic penalty by the University.**

**Moodle:** You can access the Moodle course supplement by going to UMOonline from the UM homepage. You will see GEO101 listed when you enter Moodle. For Tech Support, call the UMOonline Techs at 406.243.4999 or



866.225.1641 (toll-free) or email them at [umonline-help@umontana.edu](mailto:umonline-help@umontana.edu). They are only available during the regular work day on Monday through Friday.

**Online Assignments:** Due dates for online assignments are listed on the schedule included here.

- Learnsmart modules are on McGraw-Hill Connect (follow link on Moodle). When you register for Connect, enter your name as it appears in the university directory. These assignments are scored on completion only. Your grade will be visible in McGraw-Hill Connect. I will transfer these periodically to the Moodle gradebook. Please note this website has its own technical support staff. They are available for extended hours.
- Reading quizzes will be on Moodle – you will be able to take the quizzes three times (up to 20 minutes each attempt) up to the deadline time given – your highest scoring attempt will be recorded for your grade. Your quiz grades will show up immediately in the Moodle gradebook.

**Assessment:** Exams 1, 2, and 3 – 35% total, lowest of the three dropped  
Final Exam (required) – 20%  
Clicker points – 5%  
In-class work– 15%  
LearnSmart modules – 10%  
Reading quizzes – 15%

**Final grade:** This course must be taken for a traditional letter grade to apply it to Gen Ed. A minimum of C- must be earned to apply the course for Gen Ed credit. The following scale may be adjusted at my discretion.

A 93-100%	A- 90-92%	B+ 87-89%	B 83-86%	B- 80-82%
C+ 77-79%	C 73-76%	C- 70-72%	D+ 67-69%	D 63-66%
D- 60-62%	F 59 or below			

**Extra Credit** – Optional Saturday Field Trip (participation and short assignment): 5%. Other options will be offered on the Moodle site. **Maximum extra credit for these assignments is 5% of course grade.**

**Exams:** There will be three midterm exams and a final exam (which will include a comprehensive portion). Exams will include multiple choice and free-response questions, including concept sketches. All material covered in lecture, text, and assignments (see schedule below) is fair game. Makeup exams will be allowed only for university-sponsored events and for extraordinary circumstances – please note that your lowest-scoring midterm of the three will be dropped. All students are required to take the final exam.

**Communication:** Please note that I will only use your official UM email to communicate with you. This is required to comply with FERPA (the Federal Educational Rights and Privacy Act). Email is the preferred way to contact me – a message left on my office phone will take longer to reach me. **It is your responsibility to make sure you get messages sent to your UM email address.**

**Studying & Time Expectations:** A standard benchmark for studying for a college science class is **2-3 hours of work outside of class for each hour in class**. This means that for our 3-hour class, you should plan to spend 6-9 hours per week outside of class on reading the textbook chapter, doing LearnSmart modules and studying in ways that are most effective for you.

**Students with Disabilities:** Whenever possible, and in accordance with civil rights laws, the University of Montana will attempt to provide reasonable modifications to students with disabilities who request and require them. Please feel free to setup a time with me to discuss any modifications that may be necessary for this course. For more information, visit the Disability Services for Students website at [www.umt.edu/dss/](http://www.umt.edu/dss/)

**Academic Integrity:** All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at [http://life.umt.edu/vpsa/student\\_conduct.php](http://life.umt.edu/vpsa/student_conduct.php)

**Classroom courtesies:** This will be a large class and the classroom can be expected to be full. Please be considerate of your classmates. Please do not engage in extraneous talking and other distracting behavior in the classroom. Use of cell phones, laptops, and other electronic devices for purposes other than participating in class is distracting and disrespectful and is not acceptable in the classroom.

## GEO101-01 Fall, 2013 Course Schedule

Date	Day	Chapter/Section in <i>Exploring Geology 3e</i>	Assignments
Aug. 26	M	Ch. 1 The Nature of Geology (omit 1.4, 1.9-10)	
Aug. 28	W	Ch. 2 Investigating Geologic Questions (omit 2.2, 2.10-11)	
Aug. 30	F	Ch. 2 Investigating Geologic Questions	
<b>Sep. 2</b>	<b>M</b>	<b>Labor Day Holiday – No Class</b>	LearnSmart Ch. 1/2 & Chapter 1/2 quiz due Mon midnight
Sep. 4	W	Ch. 3 Plate Tectonics (omit 3.9, add 10.3)	
Sep. 6	F	Ch. 3 Plate Tectonics	
Sep. 9	M	Ch. 3 Plate Tectonics	LearnSmart Ch. 3 & Chapter 3 quiz due Mon 11AM
Sep. 11	W	Ch. 3 Plate Tectonics	
Sep. 13	F	Ch. 4 Earth Materials (omit 4.7, 4.15)	
Sep. 16	M	Ch. 4 Earth Materials	LearnSmart Ch. 4 & Chapter 4 quiz due Mon 11AM
<b>Sep. 18</b>	<b>W</b>	<b>EXAM #1 (covers Ch. 1, 2,3,4)</b>	
Sep. 20	F	Ch. 5 Igneous Environments (omit 5.5, 5.8, 5.13-15)	
Sep. 23	M	Ch. 5 Igneous Environments	
Sep. 25	W	Ch. 6 Volcanoes and Volcanic Hazards (omit 6.5, 6.9, 6.15)	
Sep. 27	F	Ch. 6 Volcanoes and Volcanic Hazards	
Sep. 30	M	Ch. 6 Volcanoes and Volcanic Hazards	LearnSmart Module Chapter 5 and 6 & Chapter 5/6 quiz due Mon 11AM
Oct. 2	W	Ch. 7 Sedimentary Environments and Rocks (omit 7.8-12, 7.15)	
Oct. 4	F	Ch. 7 Sedimentary Environments and Rocks	
Oct. 7	M	Ch. 8 Deformation and Metamorphism (omit 8.10-11, 8.13-15)	LearnSmart Module Chapter 7 & Chapter 7 quiz due Mon 11AM
Oct. 9	W	Ch. 8 Deformation and Metamorphism	
Oct. 11	F	Ch. 11 Mountains, Basins, and Continents (omit 11.3, 11.5, 11.9, 11.11, 11.14)	
Oct. 14	M	Ch. 11 Mountains, Basins, and Continents	LearnSmart Module Chapter 8/11 & Chapter 8/11 quiz due Mon 11AM
<b>Oct. 16</b>	<b>W</b>	<b>EXAM #2 (covers Ch. 5, 6, 7, 8, 11 )</b>	
Oct. 18	F	Ch. 12 Earthquakes and Earth's Interior (omit 12.11-14, 12.17)	
Oct. 21	M	Ch. 12 Earthquakes and Earth's Interior	



<b>Date</b>	<b>Day</b>	<b>Chapter/Section in <i>Exploring Geology 3e</i></b>	<b>Assignments</b>
Oct. 23	W	Ch. 12 Earthquakes and Earth's Interior	
Oct. 25	F	Ch. 12 Earthquakes and Earth's Interior	
Oct. 28	M	Ch. 9 Geologic Time (omit 9.7, 9.10-12)	LearnSmart Module Chapter 12 & Chapter 12 quiz due Mon 11AM
Oct. 30	W	Ch. 9 Geologic Time	
Nov. 1	F	Ch. 9 Geologic Time	
Nov. 4	M	Ch. 18 Energy and Mineral Resources (omit 18.6-18.8, 18.14)	LearnSmart Module Chapter 9 & Chapter 9 quiz due Mon 11AM
Nov. 6	W	Ch. 18 Energy and Mineral Resources	
Nov. 8	F	Ch. 18 Energy and Mineral Resources	
<b>Nov. 11</b>	<b>M</b>	<b>Veterans Day Holiday – No Class</b>	LearnSmart Module Chapter 18 & Chapter 18 quiz due Mon midnight
<b>Nov. 13</b>	<b>W</b>	<b>EXAM #3 (covers Ch. 12, 9, 18)</b>	
Nov. 15	F	Ch. 16 Streams and Flooding (omit 16.4, 16.10-11, 16.15-16)	
Nov. 18	M	Ch. 16 Streams and Flooding	LearnSmart Module Chapter16 & Chapter 16 quiz due Mon 11AM
Nov. 20	W	Ch. 17 Water Resources (omit 17.6-7)	
Nov. 22	F	Ch. 17 Water Resources	
Nov. 25	M	Ch. 17 Water Resources	LearnSmart Module Chapter17 & Chapter 17 quiz due Mon 11AM
<b>Nov. 27-29</b>	<b>W/F</b>	<b>Thanksgiving Holiday – No Classes</b>	
Dec. 2	M	Ch. 13 Climate (only 13.10-13.12) and Ch. 14 Glaciers and Changing Sea levels (omit 14.9-14.16, 14.18-19)	
Dec. 4	W	Ch. 13 Climate and Ch. 14 Glaciers and Changing Sea levels	
Dec. 6	F	Ch. 13 Climate and Ch. 14 Glaciers and Changing Sea levels	LearnSmart Module Chapter 13/14 & Chapter 13/14 quiz due <b>Monday, Dec 9th</b> at midnight
<b>Dec. 9</b>	<b>W</b>	<b>EXAM #4 (FINAL) - Ch. 16, 17, 13, 14; Monday, December 9th, 8:00AM-10:00AM</b>	

Tentative date for optional field trip: Saturday, October 12<sup>th</sup>

**The above schedule, policies, procedures, and assignments for this course are subject to change in the event of extenuating circumstances, by mutual agreement, and/or to ensure better student learning.**